

HIL/LHD/ENV/MoEF/983

Date: 20.11.2024

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

Sub: Compliance Report of EC conditions for Pakhar (35.12 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga, Jharkhand for the period April'24 to September'24.

Ref: Environmental Clearance letter no J-11015/137/2006-IA II (M) dated 5th April 2007

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar (35.12 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited located** in Lohardaga, Jharkhand for the period April'24 to September'24.

The lease detail is as below.			
Lease area (ha)	Production Capacity (MT)	Lease Period	
35.12	200000	17.04.1975 to 31.03.2030	

Hope you will find the same in order.

Thanking You

Yours Sincerely FOR HINDALCO INDUSTRIES LIMITED

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

Enclosure: - As above

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

Name of the Project : Pakhar Bauxite Mine (35.12 ha)
M/s Hindalco Industries Limited

Environment Clearance No. &

date

: J-11015/137/2006-IA.II(M), dated 05.04.2007

Period of compliance Report : From 1st April'24 to 30th September'24

Specific Conditions: -

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

Reply: Implementation of the stipulated conditions in the NOC was fulfilled, after which consent to operate was obtained from time to time while the mine was operational.

Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

The entire land was acquired in accordance with applicable laws while the mine was operational.

Condition iii: - Environmental clearance is subject to grant of forestry clearance, Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 3.45ha forestland shall be obtained before starting mining operation in that area.

Reply: - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Shallow depth mining was carried out in the past; therefore, groundwater was not intersected during mining operations while the mine was operational.

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

Reply: - No natural water course was obstructed during mining operations in past. Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition vi: -Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - Presently, The mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. There is no external OB dump in mine lease area.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition viii: - 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: - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition ix: - Plantation shall be raised in an area of 24.83ha 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: - Already 32.85 ha has been planted in and around the mine/Plateau area.

Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition x: - 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: - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition xi: - 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 – premonsoon (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: - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - Presently, the mine has not been in operation as the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

Condition xv: - 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: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

Condition xviii: - The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as 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. 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. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition xix: - 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: - Approval letter of Final Mine closure plan duly approved by Indian Bureau of Mines is hereby attached as **Annexure-1**.

General Conditions

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines

Data of the same are enclosed herewith as **Annexure 4**.

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

Reply: - Monitoring Reports of Pakhar Plateau is enclosed as **Annexure-2**.

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

Reply: - Monitoring Reports of Pakhar Plateau is enclosed as **Annexure-2**.

Condition v: - 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: - The winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Condition vi: - 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 / μ

Reply: - The winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation.

The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - The winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation. We have Environment Management Cell for our Pakhar Group of Mines. This cell is looking after Environment issues of this Mine. The copy of the same is attached herewith as **Annexure-3.** The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

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

Reply: - The winning of bauxite is closed w.e.f. 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines.

Approval letter of Final Mine closure plan duly approved by IBM is hereby attached as **Annexure-1**

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

Reply: - Statement of budgetary provision and actual expenses for environmental protection measure is enclosed as **Annexure-5**. The final mine closure plan (FMCP) has been submitted and approved by Indian Bureau of Mines. Now, the Regional Office of MoEFC&CC is in Ranchi.

Condition xii: - 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: - Agreed. However, the winning of bauxite is closed w.e.f 08.06.2009 due to the exhaustion of mineral reserve. Therefore, the mine has not been in operation. Now, the Regional Office of MoEFC&CC is in Ranchi.

Condition xiii: - 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, Central Pollution Control Board and State Pollution Control Board.

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

Condition xiv: - 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: - Already complied. A copy of clearance letter has already been submitted.

Condition xv: - 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: - Already complied. The EC Letter has been submitted to JSPCB for display of same at its Regional office and other government offices.

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

Reply: - Already complied. The information on grant of the EC has been published in two local newspapers. The copy of the advertisement has already been submitted to the Regional Office of the MoEFCC vide our letter no. HIL/GMO(M)/ENV/142 dated 23.05.2007. Now, the Regional office of MoEF&CC is in Ranchi.



GOVERNMENT OF INDIA MINISTRY OF MINES INDIAN BUREAU OF MINES OFFICE OF THE REGIONAL CONTROLLER OF MINES

Telephone: (0651) 2242889 (0651) 2242903 Fax: (0651) 2242903 E-mail: ro.ranchi@ibm.gov.in

RAN/LOH/BX/FMCP-02/2014-15.

318-B,Road No.- 3, Ashok Nagar, Ranchi - 834 002, Date: 93/04/2015

To: Shri A. K. Agarwal,

> Director cum Nominated Owner M/s HINDALCO Industries Ltd... Court Road, Lohardaga - 835 302 (Jharkhand).

Sub: Approval of Final Mine Closure Plan in respect of PAKHAR Bauxite Mines of M/s HINDALCO Industries Ltd. over an area of 38.95 hectares in village-Pakhar, Lohardaga district of Jharkhand State submitted under Rule 23C of MCDR, 1988.

Ref: Your A.G.M. (Geology) letters no. HIL/LHD/BX/IBM/245 Dated 02/08/2014 Your R.Q.P. letter nos. NIL, dated.03/11/2014 & 26/12/2014

This office letter no. रांची/लोहरदगा/बाक्साइट/एफ.एम.सी पी.-02/2014-15,दिनांक:26/09/2014

Sir.

In exercise of the powers conferred by the sub-rule 2 of Rule 23C of Mineral Conservation & Development Rules, 1988; I hereby approve the above said Final Mine Closure Plan in respect of PAKHAR Bauxite mines of M/s HINDALCO Industries Ltd. over an area of 38.95 hectares in village-Pakhar, Lohardaga district of Jharkhand State, submitted under Rule 23C of MCDR, 1988. This approval is subject to the following conditions: -

- that the Final Mine Closure Plan is approved without prejudice to any other laws applicable to the mine/lease area from time to time whether made by the Central Government, State Government or any other Authority.
- that this approval of the Final Mine Closure Plan does not, in any way, imply the approval of the Government in terms of any other provisions of the Mines & Minerals (Development & Regulation) Act, 1957 or the Mineral and any other laws including Concession Rules, 1960 (Conservation) Act, 1980, Environment (Protection) Act, 1986 and the rules made there under.

that the Final Mine Closure Plan is approved without prejudice to any order (iii) or direction from any court of competent jurisdiction.

- that the Regional Office, Indian Bureau of Mines, Ranchi shall be informed (iv) after completion of activities of final mine closure as per proposal of the Final Mine Closure Plan.
- that the Yearly report as required under Rule 23E(2) of MCDR 1988 setting (V) forth the extent of protection and rehabilitation works carried out as envisaged in the approved final mine closure plan and if there is any deviations, reasons thereof shall be submitted before 1st July of every year to the Regional office, Indian Bureau of Mines, Ranchi.

No.: RAN/LOH/BX/FMCP-02/2014-15.

(iv) The financial assurance submitted for Rs. 2,74,000/-(Two lacs seventy four thousand only) is valid up to 31/03/2016. A new bank guarantee is to be submitted on or before its expiry i.e. 31/03/2016, if the rehabilitation proposal not completed by the time.

Encl.: One copy of approved Final Mine Closure Plan.

Yours faithfully

Regional Controller of Mines

Copy forwarded for information to: -

1. The Director (Mines),

Directorate of Mines and Geology,
Government of Jharkhand,
Nepal House Area, Doranda.

Ranchi - 834 002. (Jharkhand), along with a copy of approved Final Mine Closure Plan. It is requested to ensure that the determination of aforesaid lease is not accepted unless and until a certificate issued by the Indian Bureau of Mines under Rule 29A (2) of Mineral Concession Rules, 1960 to the effect that protective, reclamation and rehabilitative works as envisaged in the approved Final Mine Closure Plan are carried out.

- 2. The Director of Mines Safety
 Ranchi Region
 CMPDIL-Campus
 3rd Floor, Old Building
 Kanke Road, Ranchi-834008
 along with a copy of approved Final Mine Closure Plan.
 - 3. Shri P.K. Sen, RQP, Kali Mandir Road, Doranda, Ranchi - 834 002.

(R. Purohit)
Regional Controller of Mines

ENVIROCHECK

Lab: MIG, R-3 Housing Colony, Dhanbad, Pin-826001, State- Jharkhand.

Pakhar (115.13) Bauxite Mine-Environmental Monitoring Report

April 2024





TEST REPORT

Test Report No.	: ENVJK/1173/APR/TR(W)24-25	Report Release Date	: 22.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETA	ULS	SAMPLE DETAILS		
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1698 : Near Mine Block-B, Quarry No.3 PakharBauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.04.2024 to 13.04.2024 : 15.04.2024	
Mines Status	Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvl. Ltd.	
Period of Analysis	: 15.04.2024 to 22.04.2024	Sample Condition	: Sealed &Preserved	

MI	ETEOROLOGICAL INFORMATION	V.			
1	Average Temperature (°C) 331	2	Harometric Pressure (mm	Hg) : 734	
3	Relative Humidity (%) ; 58	4	Weather Condition	; Clear	

	Disciplin	ne: ChemicalGroup; Atmospheric Pollu	tion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part 23): 2006	67	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part 2): 2001	10.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	1S 5182 (Part 6): 2006	23.2	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	jig/in ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Ph)	µg/m ⁵	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m ³	15 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	ρg/m ³	USEPA Method - TO-3 (GC-MS Method)	<1.0	05(Annual)
Benzo-(a)-Pyrene	ng/m³	USEPA Method - TO-3A (GC-MS Method)	<0,5	Of(Amual)

Reviewed by :

Code !

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

Page | of |

Aharkhand

826001

Housing





TEST REPORT

Test Report No.	: ENVJK/1174/APR/TR(W)24-25	Report Release Date	: 22.04.2024	
Work Order No.	÷ 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETA	MLS	SAMPLE DETAILS	
Customer Name	:Hindalco Industries Limited	Sample Ref. No.	: ENVJK/2024/AA/1699
		Location	: Near Mine Block-B, Quarry No4 Pakhur Bauxite Mine (115.13 ha)
		Sampling Date	: 12.04.2024 to 13.04.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 15.04.2024
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	Operational	Sampling Done By	: ELES Pyt. Ltd.
Period of Analysis	: 15.04.2024 to 22.04.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) 31	2	Barometric Pressure (mm)	lg) ±734
3	Relative Humidity (%) : 59	4	Weather Condition	Clear

	Discipli	ne: ChemicalGroup: Atmospheric Pollu	tion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	1S 5182 (Part 23): 2006	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L; 2006	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part 2): 2001	10.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part 6): 2006	26.4	80 (24hrs)
Ozone (O ₁)	µg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3,5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H _e)	μg/m³	USEPA Method - TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m)	USEPA Method - TQ-3A (GC-MS Method)	<0,5	01(Annual)

Reviewed by :

79000

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

Part.

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Tharkhand

Housital



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Lab | MHG, R-5 Housing Collins; Disselbad, Pin - 826003), State - Barkhand \$ 9830067044 / \$ 9304513737

TEST REPORT

Test Report No.	: ENVJK/1175/APR/TR(W)24-25	Report Release Date	: 22.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	:Hindalco Industries Limited	Sample Ref. No.	: ENVJK/2024/AA/1700
	The second secon	Location	: Near Mine Block B, Quarry No6
			Pakhar Bauxite Mine (115.13 ha)
		Sampling Date	: 12,04,2024 to 13.04,2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 15.04,2024
	A STATE OF THE STA	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 15.04.2024 to 22.04.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORM	IATION			
1	Average Temperature ("C)	: 31	2	Barometric Pressure (mmHg	() : 734
3	Relative Humidity (%)	59	4	Weather Condition	: Clear

	Disciplin	ne: ChemicalGroup: Atmospheric Pollu	tion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part 23): 2006	67	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part 2): 2001	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part 6): 2006	23.7	80 (24hrs)
Ozone (Os)	μg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Ph)	μy/m³	IS 5182 (Part- 22): 2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m1	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CaH ₆)	μg/m ^s	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	USEPA Method – TO-3A (GC-MS Method)	< 0.5	01(Annual)

Reviewed by :

897.00 -

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

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TEST REPORT

Test Report No.	: ENVJK/1176/APR/TR(W)24-25	Report Release Date	: 22.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1701 : Near Mine Block-B, Quarry No7 Pakhar Bauxite Mine (115.13 ha)
Address	: Lohardaua, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	. 12.04.2024 to 13.04.2024 : 15.04.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.
Period of Analysis	: 15.04.2024 to 22.04.2024	Sample Condition	: Scaled & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	:31	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%).	: 59	.4	Weather Condition	Clear

	Disciplin	ne: ChemicalGroup: Atmospheric Pollo	tion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part 23); 2006	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part 2): 2001	8.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part 6): 2006	26.1	80 (24hrs)
Ozone (O ₁)	μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	15 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m ³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method - IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	pg/m ²	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	USEPA Method – TO-3A (GC-MS Method)	< 0.5	01(Annual)

Reviewed by:

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(Saswata Burman Roy, Dy. Quality Manager

Authorised Signatory:

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(Bapan Das, Dy. Technical Manager)

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TEST REPORT

Test Report No.	: ENVJK/1169/APR/TR(W)24-25	Report Release Date	: 23.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1694 : Near Bunglapart Village PakharBauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 12.04.2024 to 13.04.2024 : 15.04.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 15.04.2024 to 23.04.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature ("C)	: 32	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 61	4.	Weather Condition	: Clear

	Discipli	ne: ChemicalGroup: Atmospheric Pollu	tion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	1S 5182 (Part 2): 2001	7.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part 6): 2006	19.4	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs).
Lead (Pb)	μg/m ⁵	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₉)	µg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	USEPA Method - TO-3A (GC-MS Method)	<0,5	01(Annual)

Reviewed by:

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(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

Thomas

(Bapan Das. Dy. Technical Manager)

Page 1 of 1

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TEST REPORT

Test Report No.	: ENVJK/1170/APR/TR(W)24-25	Report Release Date	: 23.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1695 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.04.2024 to 13.04.2024 : 15.04.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvi. Ltd.
Period of Analysis	= 15.04.2024 to 23.03.2024	Sample Condition	Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1.	Average Temperature (°C) : 32	2	Barometric Pressure (mm	iHg) : 734	
3	Relative Humidity (%) : 61	4	Weather Condition	4 Clear	

	Disciplin	ne: ChemicalGroup: Atmospheric Pollu	tion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part 23): 2006	60	100 (24hrs).
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part 2): 2001	8.7	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part 6): 2006	22.1	80 (24hrs)
Ozone (O ₂)	µg/m ¹	1S 5182 (Part+ 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m ²	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (CsH ₀)	μg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by z

****End of Report****

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Authorised Signatory:

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

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Keikata Office : 63/8, Rastraguru Avenue 201245 - 700028 [033-25792891/25497490 Email envirocheck50@igmail.com



TEST REPORT

Test Report No.	: ENVJK/1171/APR/TR(W)24-25	Report Release Date	; 23.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1696 : Near UtkarmitRajkiyaPrathmik VidyalayaBunglapart Village PakharBauxite Mine	
Address	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 12.04.2024 to 13.04.2024 : 15.04.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 15.04.2024 to 23.04,2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 32	2	Barometric Pressure (mml-	lg) : 734
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

	Discin	line: ChemicalGroup: Atmospheric Pol	lution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part 23): 2006	59	100 (24hrs)
Particulate Matter (PM2,5)	μg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	1S 5182 (Part 2): 2001	8.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part 6): 2006	24.5	80 (24hrs)
Ozone (O ₃)	μg/m)	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m [†]	IS 5182 (Part- 22): 2019	< 0.002	l (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ⁱ	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m ³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annial)
Benzo-(a)-Pyrene	ng/m ³	USEPA Method – TO-3A (GC-MS Method)	< 0.5	01(Annual)

Reviewed by ?

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(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

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(Bapan Das, Dy. Technical Manager)

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TEST REPORT

Test Report No.	: ENVJK/1172/APR/TR(W)24-25	Report Release Date	: 23.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1697 : Near UtkarmitRajkiyaPrathmik VidyalayaDumrapari Village PakharBauxite Mine
Address Mines Status	: Lobardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.04.2024 to 13.04.2024 : 15.04.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 15.04 2024 to 23.04.2024	Sample Condition	; Sealed & Preserved

M	ETEOROLOGICAL INFORM	MATION			
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear

	Discip	line: ChemicalGroup: Atmospheric Pol	lution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	59	100 (24hrs)
Particulate Matter (PM2,5)	μg/m ³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part 2): 2001	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part 6): 2006	22.7	80 (24hrs)
Ozone (O _i)	µg/m³	IS 5182 (Part- 9): 2019	<20.	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	USEPA Method - TO-3A (GC-MS Method)	< 0.5	01(Annual)

Reviewed by :

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(Saswata Burman Roy, Dy. Quality Manager) &

Authorised Signatory:

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(Bapan Das, Dy. Technical Manager)

Page 1 of 1

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CONTENT

	Hindalco Industries: Pakhar (115.13)Environmental Monitoring Report May2024
	Pakhar (115.13)
	AMBIENT AIR QUALITY- CORE ZONE
1	Near Mine Block-B, Quarry No.3
2	Near Mine Block-B, Quarry No.4
3	Near Mine Block B, Quarry No - 6
4	Near Mine Block-B, Quarry No.7
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Bunglapart Village
2	Yatri Shed (Near K-10)
3	Near UtkarmitRajkiyaPrathmikVidyalayaBunglapart Village
4	Near UtkarmitRajkiyaPrathmikVidyalayaDumrapart Village
	Drinking Water
	Effluent Water



PEOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECES7130124



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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2668	Report Release Date	: 18,05,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC135872400000637F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/2959 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ba)	
Address	: 1,ohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 10.05.2024 to 11.05.2024 : 13.05.2024	
Missas Status	(According)	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	; Operational	Sampling Done By	: ELES PVL Ltd.	
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	71	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1): 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	26.5	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	MB/Wg.	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.017	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01; 2021	<2.0	06 (Annual)

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 200AECE9713D124

NGINEERING SERVICES PVT. LTD.

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/2668	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400000637F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m*	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Вепхо-(а)-Рутепе	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

AKASH KUMAR Quality Managur ELES PVT, LTD.

****End of Report****

Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Menantal

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2669	Report Release Date	: 18.05,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC135872400000638F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/2960 : Near Mine Block-B, Quarry No4 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.05.2024 to 11.05.2024 : 13.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg	742
3	Relative Humidity (%) : 59	4	Weather Condition	Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	76	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	13.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	22.2	80 (24hrs)
Ozone (O ₁)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ^y	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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

Website: www.elespi.co.in

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2669	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ATT 45 AT-	THE STREET CONTRACTORS			

ULR No.	: TC135872400000638F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₄)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Вепго-(а)-Рутепе	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR Quality Managar ELES PVT. LTD.

End of Report**

Authorised Signatory

Dr. Deependra Kumar Sinhu Ph. D Enveronmental Forgo. ELES Pvt. Ltd. Technical Manta

Page 2 of 2

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

ENGINEERING SERVICES PYT, LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2670	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000639F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/2961 : Near Mine Block B, Quarry No6 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	= 10.05.2024 to 11.05.2024 = 13.05.2024 = Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFORM	MATION			
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	1S 5182 (Part- 23): 2022	74	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ¹	IS 5182 (Part- 24): 2019	39	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	9.3	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	25.1	80 (24hrs)		
Ozone (O ₂)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	18 5182 (Part- 22): 2019	0.013	1 (24hrs)		
Nickel (Nī)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2670	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000639F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₅ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

AKASH KUMAR Quality Managur ELES PVT LTD ****End of Report***

Authorised Signatory

Dr. Deependra Kumar Sinita Ph. D Environmental Eags. ELES Pvt. Ltd. Technical Manner

Page 2 of 2

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/2671	Report Release Date	; 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000640F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/2962 : Near Mine Block-B, Quarry No7 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 10.05.2024 to 11.05.2024 : 13.05.2024	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	13.05.2024 to 18.05,2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature ("C)	: 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ¹	IS 5182 (Part- 24); 2019	43	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	11.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	21.9	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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San Erromanno Leo Filton



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/2024/2671	Report Release Date	; 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000640F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁵	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Managur ELES PVT LTD

****End of Report****

Authorised Signatory

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

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

NGINEERING SERVICES PVT, LTD.

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TEST REPORT

Test Report No.	; ELES/RNC/2024/2672	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	; TC135872400000641F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/2963 : Near Bunglapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.05,2024 to 11.05,2024 : 13.05,2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	- Operational	Sampling Procedure Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	= 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmH)	g) : 742	
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	63	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ²	IS 5182 (Part- 24): 2019	36	60 (24lus)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	9.1	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	23.3	80 (24hrs)		
Ozone (O ₃)	ug/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenie (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

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

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TEST REPORT

: ELES/RNC/2024/2672 Report Release Date : 18,05,2024 Test Report No. Work Order Date : 28.03,2024 Work Order No. : 13612312113

: TC135872400000641F ULR No.

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR

Quality Managar ELES PVT. LTD. End of Report****

Authorised Signatory Sinis Dr. Deependra Kum Ph. D Environmental Eng. ELES Pvt. Ltd. Technical Liannon

Page 2 of 2 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 connot 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 fall or in part shall not be published, advenue, 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 unsubstrived alteration & Babilization 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 he done within 15days from the Date of Test Report released/issued. After the time persod stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours farmat. Abbreviation used: N/A (Not Applicable), BDI. (Below Detection Limit). LDL (Lower Detection Limit)



PLDT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARRHAND) GST NO:- 2014ECE9713D124

ENGINEERING SERVICES PUT, LTD.

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2673	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	; TC135872400000642F		

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/2964 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.05.2024 to 11.05.2024 : 13.05.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvl. Ltd.
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	68	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ^J	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec- 1): 2023	11.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	18 5182 (Part- 6): 2022	25.1	80 (24hrs)
Ozone (O ₃)	μg/m³-	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22); 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6,0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

NGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. ; ELES/RNC/2024/2673 Report Release Date : 18.05,2024

Work Order No. : 13612312113 Work Order Date : 28.03,2024

ULR No. : TC135872400000642F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Managar ELES PVT. LTD.

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinhu Ph. D Environmental Enga. ELES Pvt. Ltd. Technical Mammuni

Page 2 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2674	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000643F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/2965	
		Location	: Near Utkarmit Rajkiya Prathmik	
		100	Vidyalaya Bunglapart Village	
			Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 10.05.2024 to 11.05.2024	
		Sample Received Date	: 13.05.2024	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	= 13.05.2024 to 18.05,2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORM	IATION			
1	Average Temperature (°C)	33	2	Barometric Pressure (mmHg)	±742
3	Relative Humidity (%)	59	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): 2022	67	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	22.5	80 (24hrs)
Ozone (O ₃)	μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₇)	μg/m [*]	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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TEST REPORT

Test Report No. : ELES/RNC/2024/2674 Report Release Date : 18.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000643F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

AKASIM MUMAR Quality Manager

ELES PVT. LTD.

****End of Report***

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environments Engg. ELES Pvt. Ltd. Technical Manning

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2675	Report Release Date	: 18.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000644F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/2966 : Near Utkarmit Rajkiya Prathmil Vidyalaya Dumrapart Village Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10,05,2024 to 11,05,2024 : 13,05,2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt, Ltd.	
Period of Analysis	: 13.05.2024 to 18.05.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part- II/Sec- 1): 2023	8.6	80 (24hrs)	
Nitrogen Di-Oxide (NOz)	µg/m³	IS 5182 (Part- 6): 2022	22.4	80 (24hrs)	
Ozone (O ₁)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m²	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m¹	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ⁷	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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TEST REPORT

Test Report No. : ELES/RNC/2024/2675 Report Release Date : 18.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000644F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _u H _k)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	OI(Annual)

Reviewed by

AKASH KUMAR Quality Manager ELES PVT LTD ****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph D Environmental 5-39 ELES Pvt. Ltd. Tachnical Manager

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2890	Report Release Date	: 28.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000850F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/2977 : 11.05.2024 : 13.05.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample Sampling Procedure	: Drinking Water : Pakhar-115.13 (Bauxite Mine) : ELES/DOC/SMPL/01	
Mines Status	: Operational	Sampling Done By	: ELES Pvt, Ltd.	
Period of Analysis	: 13.05.2024 to 20.05.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group:	Water		ory Limit
Discipline, Caemicai		Group.	- STATES	AND DESCRIPTION OF THE PERSON	10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 25,3 °C)	2	APHA 24th Ed.2023, 4500-H	6.51	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed,2023, 2130 B	0.89	1.0	5.0
Taste	9	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	~	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.0	.5	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	48	500	2000
Chloride (as Cl)	mg/L	APHA 24 th Ed.2023, 4500 CI B	5.7	250	1000
Fluoride (as F)	mg/L	APHA 24 th Ed.2023, 4500 F-D	BDL (DL: 0.1)	1,0	1.5
Total Alkalinity (as CaCO ₃)	mg/L	APHA 24 th Ed.2023, 2320 B	8.2	200	600
Total Hardness (as CaCO ₅)	mg/L	APHA 24th Ed.2023, 2340 C	6.1	200	600
Sulphate (as SO ₄)	mg/L	APHA 24th Ed.2023, 4500 SO _€ 2-E	1.22	200	400
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed,2023, 4500 NO ₂ -B	1.24	45	No Relaxation

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 208AECE97130124

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CIN: U749991H201BFTC011125

TEST REPORT

Test Report No. : ELES/RNC/2024/2890 Report Release Date : 28.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000850F

Discipline : Chemic	at	Grou	ip: Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	0.2	1.0
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	1.6	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemi	cal	Gre	oup : Residues i	n Water	
Aluminum (as AI)	mg/L	1S 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	1S 3025 (Part-37): 2022	BDL (DL: 0.005)	0,01	No Relaxation
Boron (as B)	mg/L	1S 3025 (Part-57) : 2021	BDL (DL; 0.2)	0.5	2.4
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium(as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.083	1.0	1.0
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56); 2019	BDL (DL: 0.01)	0.01	No Relaxation

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

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CAN: U74999JH2018FTC011125

TEST REPORT

Test Report No. : ELES/RNC/2024/2890 Report Release Date : 28.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000850F

Discipline : Chemical		Group: Resid	ues in Water	The second distriction of the second distric	ory Limit 10500:2012
Parameter Unit		Test Protocol	Result	Acceptable Limit	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	5	1.5
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation
Polychlorinated biphenyls (PCB)	µg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation
Pesticides				Li	mit
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		20
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	0.0
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
Malathion	μg/L	ELES/GC/SOP/01; 2023	BDL (DL: 0.5)	1	90
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0	.30
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 0	.0
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	. 2	2.0
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	10	
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0	.03
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0	.01

Page 3 of 4

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

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CN: U74999JH2018PTC011125

TEST REPORT

Test Report No.	: ELES/RNC/2024/2890	Report Release Date	: 28.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000850F		

Pesticides				
Parameter	Unit	Test Protocol	Result	Limit
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40
DDT(o,p and p,p-isomers of DDT,DDEand DDD)	μg/L	ELES/GC/SOP/02; 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Group	: Water	
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected

Remarks: 1. pH and RFC done at Lab.

Reviewed by AKASH KUMAR Quality Managor ELES PVT LTD

****End of Report****

Authorised Signatory

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

Page 4 of 4

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

ERING SERVICES PVT. LTD.

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

Website ; www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/2890	Report Release Date	: 28.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/DW/2977	
		Sampling Date	: 11.05.2024	
		Sample Received Date	13.05.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample	Drinking Water	
		Source/Location of Sample	: Pakhar-115.13 (Bauxite Mine)	
		Sampling Procedure	: ELES/DOC/SMPL/01	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 13.05.2024 to 20.05.2024	Sample Condition	: Sealed & Preserved	

Discipline : Ch	emical	Group : Wate	r		tory Limit 10500;2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	CL-6, IS: 3025 (P-39)	BDL (DL: 0.1)	1.0	No Relaxation

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

AKASH KUMAR Quality Managur ELES PVT LTD

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sintra Ph. D Environmental Engig PLES Pvt. Ltd. Technical Man

Page I of I

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2906	Report Release Date	: 28.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000866F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/EF/2979	
		Sampling Date	:11.05.2024	
		Sample Received Date	: 13.05.2024	
NAC TO	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Type of Sample	: Effluent Water	
Address	: Lohardaga, Jharkhand-835302	Source of Sample	: Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha)	
		Sampling Procedure	: ELES/DOC/SMPL/01	
Mines Status	: Operational	Sample Collected By	: ELES Pvt. Ltd.	
Period of Analysis	: 13.05.2024 to 20.05.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical	Group: Pollution & F	nvironment	Discharge Limits – CPC EPR, 1986 Schedule V		
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 25.3°C)	~	APHA 24th Ed,2023,4500-H	8.59	5.5-9.0	5.5-9.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16); 2023	163		240
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	50	100	200
Dissolved Oxygen (DO)	mg/L	IS 3025 (Part-38): 2019	5,4	44	**
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	1S 3025 (Part-44): 2023	24.8	30	100
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2023	294	250	=
Dissolved Phosphate (as P)	mg/L	15 3025 (Part-31/Sec-1): 2022	2.0	5.0	-
Fluoride (as F)	mg/L	(\$ 3025 (Part-60): 2019	BDL (DL: 0.1)	2.0	1.5
Sulphide (as S)	mg/L	IS 3025 (Part-29) ; 2019	BDL (DL: 0.04)	2.0	-
Oil & Grease	mg/L	1S 3025 (Part-39): 2021	3.4	10	10

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TC-13887

TEST REPORT

Test Report No.	; ELES/RNC/2024/2906	Report Release Date	: 28.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000866F		

Discipline: Chemical		Group: Residues in Water		Discharge Limits – CPCB EPR, 1986 Schedule VI	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
Lead (as Pb)	mg/L	APHA 24th Ed.2023, 3111 B	BDL (DL: 0.01)	0.1) +- -
Manganese (as Mn)	mg/L	APHA 24th Ed.2023, 3111 B	0.196	2.0	+
Mercury (as Hg)	mg/L	IS 3025(Part-48): 1994; RA2019	BDL (DL; 0.001)	0.01	
Nickel (as Ni)	mg/L	APHA 24th Ed.2023, 3111 B	BDL (DL: 0.01)	3,0	-
Zinc (as Zn)	mg/L	APHA 24th Ed.2023, 3111 B	BDL. (DL: 0.1)	5,0	-

Remarks: pH done at Lab.

Reviewed by AKASH KUMAR Quality Managar

ELES PVT LTD.

****End of Report****

Authorised Signatory

Ph. Diependra Kumar Sinha Ph. Dienvironmental Engg. ELES Pvt. Ltd. Technical Manar

Page 2 of 2

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CONTENT

	Hindalco Industries: Pakhar (115.13) Environmental Monitoring Report June2024
	Pakhar (115,13)
	AMBIENT AIR QUALITY- CORE ZONE
1	Near Mine Block-B, Quarry No.3
2	Near Mine Block-B, Quarry No.4
3	Near Mine Block B, Quarry No - 6
4	Near Mine Block-B, Quarry No.7
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Bunglapart Village
2	Yatri Shed (Near K-10)
3	Near UtkarmitRajkiyaPrathmikVidyalayaBunglapart Village
4	Near UtkarmitRajkiyaPrathmikVidyalayaDumrapart Village







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TEST REPORT

Test Report No.	: ELES/RNC/2024/3339	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001291F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3696 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 hn)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15.06,2024 to 16.06,2024 : 17.06,2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	:39	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%)	: 57	4	Weather Condition	: Clear	

Discipline: Chemical		Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23); 2022	62	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec-1): 2023	12.6	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	20.2	80 (24hrs)	
Ozone (O ₂)	μg/m³	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m ⁴	15 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9733D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3339	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001291F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (CsHn)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

Authorised Signatory

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3340	Report Release Date	: 22,06,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001292F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/3697 Near Mine Block-B, Quarry No4 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15.06.2024 to 16.06.2024 : 17.06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	: 17.06,2024 to 22,06,2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 39	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	:57	4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	67	100 (24hrs)	
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	8.8	80 (24hrs)	
Nitrogen Di-Oxide (NOz)	µg/m³	IS 5182 (Part- 6): 2022	25.7	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m¹	1S 5182 (Part- 22): 2019	0.0012	I (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	-20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RNC/2024/3340 Report Release Date : 22.06.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001292F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₀ H ₀)	µg/m³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m¹	ELES/GC/SOP/05: 2023	<0.5	O1(Annual)	

AKASH KUMAR Quality Manager ELES PVT, LTD.

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 104AECE9713D124

ENGINEERING SERVICES PVT. LTD

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



Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/3341	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC135872400001293F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3698 : Near Mine Block B, Quarry No6 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15.06.2024 to 16.06.2024 : 17.06.2024 : Ambient Air	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvl. Ltd.	
Period of Analysis	: 17.06.2024 to 22.06.2024	Sample Condition	Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 39	2	Barometric Pressure (mml-	(g) : 742	
3	Relative Humidity (%) : 57	4	Weather Condition	: Clear	

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ⁵	IS 5182 (Part- 23): 2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec- 1): 2023	11.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	JS 5182 (Part- 6): 2022	28.3	80 (24hrs)	
Ozone (O ₃)	μg/m³	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ²	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20446CE9713D124

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/3341	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001293F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H _s)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

Authorised Signatory

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20AAECE9713D324

ENGINEERING SERVICES PVT, LTD.

**

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TG-7258

TEST REPORT

Test Report No.	: ELES/RNC/2024/3342	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001294F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3699 : Near Mine Block-B, Quarry No7 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.06.2024 to 16.06.2024 ; 17.06.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	± 17,06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) ± 39	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%) : 57	4	Weather Condition	: Clear	

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ¹	IS 5182 (Part- II/Sec- 1): 2023	8.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	24,4	80 (24hrs)	
Ozone (O ₂)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m*	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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

RING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RNC/2024/3342 Report Release Date : 22.06.2024 Work Order No. : 13612312113

ULR No. : TC135872400001294F Work Order Date : 28.03.2024

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₄)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05; 2023	< 0.5	01(Annual)	

Quality Manager FLES PVT. LTD.

****End of Report****

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3343	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001295F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELFS/RNC/2024/AA/3700 : Near Bunglapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.06.2024 to 16.06.2024 : 17.06.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 39	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 57	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	56	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	1S 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1): 2023	11.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	19.1	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m'	IS 5182 (Part- 22); 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ⁷	ELES/AIR/SOP/01: 2021	<2.0	96 (Annual)

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No. : ELES/RNC/2024/3343 Report Release Date : 22.06.2024
Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001295F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR Quality Manager ELES PVT. LTD.

**** End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-934003 (JHARKHAND) GST NO:- 20A46CE9713D124

ENGINEERING SERVICES PYT. LTD

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3344	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001296F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3701 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15.06.2024 to 16.06.2024 : 17.06.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (%C)	: 39	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	; 57	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	62	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1): 2023	13.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	22.7	80 (24hrs)
Ozone (O ₃)	pg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	1S 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AJR/SOP/01: 2021	<2.0	06 (Annual)

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

.ES/RNC/2024/3344	Report Release Date	: 22.06.2024
612312113	Work Order Date	: 28.03.2024

ULR No. : TC135872400001296F

Discipling	: Chemical	Group: Att	nospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _s H _n)	ug/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

AKASH KUMAR Quality Managar ELES PVT. LTD

****End of Report****

Authorised Signatory
Dr. Deependra Kurnar Sinha
Ph. D Environmental Engg.
ELES 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.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3345	Report Release Date	: 22.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC135872400001297F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/3702
		Location	: Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Viltage
Address	: Lohardaga, Jharkhand-835302	Sampling Date	Pakhar Bauxite Mine 15,06,2024 to 16,06,2024
		Sample Received Date	: 17.06.2024
		Type of Sample	: Ambient Air
	K-17-3 A	Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	± 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION				
1	Average Temperature (*C) : 39	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%) : 57	4	Weather Condition	Clear	

Discipline:	Chemical	Group: Atm	ospheric Polls	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part- II/Sec- 1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	17.2	80 (24hrs)
Ozone (O ₃)	µg/m¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m³	15 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

ENGINEERING SERVICES PUT. 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/2024/3345 Report Release Date : 22.06.2024 Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001297F

Discipline	:: Chemical	Group: Att	mospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₅ H ₆)	μg/m [®]	ELES/GC/SOP/06: 2023	<2.5	05(Armial)
Benzo-(a)-Pyrene	ng/m	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR Quality Manager ELES PVT LTD

****End of Report****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3346	Report Release Date	: 22.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001298F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3703 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine
Address	: Lobardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.06.2024 to 16.06,2024 : 17.06.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.06.2024 to 22.06.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 39	2	Barometric Pressure (mmHg)	±742
3	Relative Humidity (%) : 57	4	Weather Condition	: Clear

Discipline:	Discipline: Chemical		Group: Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	64	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec- 1): 2023	10.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	18.1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0,011	1 (24hrs)
Nickel (Ni)	ng/m ^a	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD

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

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



TEST REPORT

Test Report No. : ELES/RNC/2024/3346 Report Release Date : 22.06.2024
Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001298F

Discipline	:: Chemical	Group: At	Group: Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _n H _n)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

AKASYPYCOMAR Quality Manager FLES PVT. LTD

****End of Report****

Authorised Signatory

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

Page 2 of 2

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CONTENT

	Hindalco Industries: Pakhar (115.13) Environmental Monitoring Report July2024
	Pakhar (115.13)
	AMBIENT AIR QUALITY- CORE ZONE
1	Near Mine Block-B, Quarry No.3
2	Near Mine Block-B, Quarry No.4
3	Near Mine Block B, Quarry No - 6
4	Near Mine Block-B, Quarry No.7
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Bunglapart Village
2	Yatri Shed (Near K-10)
3	Near UtkarmitRajkiyaPrathmikVidyalayaBunglapart Village
4	Near UtkarmitRajkiyaPrathmikVidyalayaDumrapart Village





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

ENGINEERING SERVICES PVT. LTD

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TEST REPORT

Test Report No.	; ELES/RNC/2024/4082	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002017F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4677 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.07.2024 to 15.07.2024 : 17.07.2024	
Mines Status	; Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	:742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline:	Chemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	10.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 2019 (NDIR Method)	<1,0	2 (8hrs)
Lead (Pb)	μg/m³	1S 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m1	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4082	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
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ULR No. : TC135872400002017F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H _s)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

AKASH KUMAR Quality Manager ELES PVT LTD

****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (JHARKHAND) G57 NO:- 20AAECE9713D1Z4

GINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4083	Report Release Date	± 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002018F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4678 : Near Mine Block-B, Quarry No4 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	; 14.07.2024 to 15.07,2024 ; 17.07.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline: (Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μy/m³	1S 5182 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μμ/m³	IS 5182 (Part-II/Sec-1): 2023	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)
Ozone (Ox)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	1S 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	JS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenie (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2,0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 28AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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TG-13981

TEST REPORT

ULR No.	: TC135872400002018F		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
Test Report No.	: ELES/RNC/2024/4083	Report Release Date	: 22.07.2024	

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Amual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR Quality Manag: ELES PVT_LTD

****End of Report****

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

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4084	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002019F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4679 : Near Mine Block B, Quarry No6 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.07.2024 to 15.07.2024 : 17.07.2024 : Ambient Air	
Mines Status	; Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1); 2023	10.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	(S 5182 (Part- 6): 2022	23.4	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m'	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22); 2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD

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

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



TC-UMBT

TEST REPORT

Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
Test Report No.	: ELES/RNC/2024/4084	Report Release Date	; 22.07.2024	

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H _s)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASHI KUMAR Quality Manager ELES PVT LTD

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Engg.

ELES 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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4085	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002020F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4680 : Near Mine Block-B, Quarry No7 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.07.2024 to 15.07.2024 : 17.07.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmH	g) :742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	59	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part-24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (\$O ₂)	µg/m ³	IS 5182 (Part- II/Sec- 1): 2023	7.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	20.8	80 (24hrs)	
Ozone (O ₅)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page I of 2

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

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12-1302

TEST REPORT

Test Report No.	: ELES/RNC/2024/4085	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002020F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (CsHs)	µg/m ¹	ELES/GC/SOP/06: 2023	<2,5	05(Annual)	
Вепго-(а)-Ругепе	ng/m ¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR Quality Manager ELES PVT_LTD

****End of Report****

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:- 20AAECE9713D12A

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4086	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002021F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/4681	
		Location	: Near Bunglapart Village Pakhar Bauxite Mine	
		Sampling Date	: 14.07.2024 to 15.07.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 17,07,2024	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg	;) : 742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	52	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	15 5182 (Part- 24): 2019	27	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1): 2023	8.9	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	17.5	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)		
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4086 Report Release Date : 22.07,2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002021F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

AKASH KUMAR Quality Managar ELES PVT, LTD

****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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

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TC-13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/4087	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002022F	***	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4682 : Yatri Shed (Near K-10) Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.07.2024 to 15.07.2024 : 17.07.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmH	(g) : 742
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Discipline:	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	57	100 (24hrs)	
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	8.9	80 (24lus)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	20.1	80 (24hrs)	
Ozone (O ₂)	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₇)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ^X	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

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TEST REPORT

Test Report No. : ELES/RNC/2024/4087 Report Release Date : 22.07.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002022F

Discipline: Chemical Group: Atmo		mospheric Pollu	ition	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _t H _t)	irg/m ^E	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR Quality Managur ELES PVT LTD

****End of Report***

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

Page 2 of 2

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PLOT NO-30, MANSAROYAR ENCLAYE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:-20A46CE9713D124

ENGINEERING SERVICES PVT. LTD

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4088	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002023F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4683 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 14.07.2024 to 15.07.2024 : 17.07.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%) : 63	4	Weather Condition	; Partly Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	55	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	μg/m³	IS 5182 (Part- 6): 2022	18.4	80 (24hrs)
Ozone (O ₁)	μg/m³	1S 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ^s	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ⁴	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	18 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	55	06 (Annual)

Page 1 of 2

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4088 Report Release Date : 22.07.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002023F

Discipline: Chemical		Group: Atmospheric Pollu		tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m [∓]	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

AKASH KUMAR Quality Manager FLES PVT LTD

****End of Report***

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

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD

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TC-12587

TEST REPORT

Test Report No.	; ELES/RNC/2024/4089	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	± 28.03.2024
ULR No.	: TC135872400002024F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4684 : Near Urkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 14.07.2024 to 15.07.2024 : 17.07.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	; Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmH	g) : 742
3	Relative Humidity (%) : 63	4	Weather Condition	Partly Cloudy

Discipline: (hemical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec- 1): 2023	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ¹	IS 5182 (Part- 6): 2022	16.8	80 (24hrs)
Ozone (O ₂)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m1	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lend (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m²	1S 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

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10.1400

TEST REPORT

Test Report No.	: ELES/RNC/2024/4089	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002024F			-

Discipline	Discipline: Chemical Group: Atmo		mospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m*	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

Reviewed by

AKASH KUMAR Quality Managar

ELES PVT LTD

****End of Report**

Dr. Deependra Kumar Sinha Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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CONTENT

	Hindalco Industries: Pakhar (115.13) Environmental Monitoring Report	August 2024
	Pakhar (115.13)	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near Mine Block-B, Quarry No.3	
2	Near Mine Block-B, Quarry No.4	
3	Near Mine Block B, Quarry No - 6	
4	Near Mine Block-B, Quarry No.7	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Pratnmik Vidyalaya Dumrapart Village	
	Drinking Water	
	Effluent Water	





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TEST REPORT

Test Report No.	: ELES/RNC/2024/4609	Report Release Date	: 16.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002534F		

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5288 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 09.08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORM	ATION			
1	Average Temperature (°C)	28	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	67	4	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	55	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	(S 5182 (Part- II/Sec- 1): 2023	8.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	19.3	80 (24hrs)		
Ozone (O ₃)	μg/m ⁴	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4609 Report Release Date : 16.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002534F

Discipline	Discipline: Chemical Group: Atmo		al Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Managor ELES PVT LTD.

****End of Report***

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

Page 2 of 2

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

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TC-1980

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4610	Report Release Date	: 16.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002535F		

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5289 : Near Mine Block-B, Quarry No4 Pakhar Bauxite Mine (115.13 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 09.08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline: (Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	. 53	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec- 1); 2023	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	20.3	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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ENGINEERING SERVICES PUT. LTD.

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**

TC-19567

TEST REPORT

Test Report No.	: ELES/RNC/2024/4610	Report Release Date	: 16.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002535F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Manager ELES PVT, LTD.

****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 20AAECE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4611	Report Release Date	: 16.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002536F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	# Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5290 : Near Mine Block B, Quarry No6 Pakhar Bauxite Mine (115.13 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 09.08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline: (Chemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	7.6	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6); 2022	20.8	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	1S 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4611 Report Release Date : 16.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002536F

Discipline	: Chemical	Group: Att	mospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₀ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m"	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by AKASH KUMAR Quality Manager ELES PVT_LTD.

****End of Report****

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

Page 2 of 2

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

ENGINEERING SERVICES PUT. L'ED.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4612	Report Release Date	: 16.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002537F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5291 : Near Mine Block-B, Quarry No7 Pakhar Bauxite Mine (115,13 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07,08.2024 to 08.08.2024 : 09,08.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd,
Period of Analysis	: 09.08.2024 to 16.08,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (minHg)	3 742
3	Relative Humidity (%)	: 67	-4	Weather Condition	: Cloudy

Discipline: 0	bemical	Group: Atm	ospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	55	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec-1): 2023	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	17.1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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Work Order No.

ENVIRONMENTAL LABORATORIES &

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

ING SERVICES PVT. LTD.

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

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TEST REPORT

Work Order Date

: 16.08.2024 Test Report No. : ELES/RNC/2024/4612 Report Release Date : 28.03.2024

ULR No. : TC135872400002537F

: 13612312113

Discipline	: Chemical	Group: Att	mospheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR Quality Manager ELES PVT LTD

****End of Report****

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-2014ECE57130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4613	Report Release Date	: 16.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002538F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5292 : Near Bunglapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 09,08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	p 742
3	Relative Humidity (%)	±67	4	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	46	100 (24hrs)		
Particulate Matter (PM2,5)	μg/m³	1S 5182 (Part- 24): 2019	22	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-Il/Sec-1): 2023	6.3	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6); 2022	15.8	80 (24hrs)		
Ozone (O ₃)	μg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m ³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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ENGINEERING SERVICES PUT. LTD.

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/4613
 Report Release Date
 : 16,08,2024

 Work Order No.
 : 13612312113
 Work Order Date
 : 28,03,2024

ULR No. : TC135872400002538F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _t H _t)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

Reviewed by AKASH KUMAR

Quality Manager ELES PVT, LTD. ****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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ENGINEERING SERVICES PUT, LTD



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4614	Report Release Date	: 16.08,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002539F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5293 : Yatri Shed (Near K-10) Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 09.08,2024 to 16,08.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:28	2	Barometric Pressure (mmHg)	≎742
3	Relative Humidity (%)	: 67	A	Weather Condition	3 Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	53	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	6.4	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	17.5	80 (24hrs)		
Ozone (O ₅)	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	pg/m³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)		
Arsenie (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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TC-13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/4614	Report Release Date	: 16.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
III.R No.	: TC135872400002539F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _t H ₄)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Manager ELES PVT. LTD

****End of Report****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4615	Report Release Date	: 16.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002540F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5294 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 09.08.2024 to 16.08.2024	Sample Condition	: Sealed & Preserved	

MU	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	48	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	21	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec-1): 2023	5.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	16.1	80 (24hrs)	
Ozone (O ₃)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m'	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/4615 Report Release Date : 16.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002540F

Discipline	: Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Berzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4616	Report Release Date	: 16.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002541F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref, No. Location	: ELES/RNC/2024/AA/5295 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 07.08.2024 to 08.08.2024 : 09.08.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 09.08,2024 to 16,08,2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 67	4.	Weather Condition	:: Cloudy

Discipline: 0	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ³	1S 5182 (Part- 23): 2022	46	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24); 2019	20	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-11/Sec-1): 2023	6.7	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	15.3	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	pg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.010	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4616 Report Release Date : 16,08,2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002541F

Discipline	: Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR
Quality Manager
ELES PVT, LTD.

****End of Report****

Authorised Signatory

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

Page 2 of 2

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4744 Report Release Date : 22.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002663F

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/5302 : 08.08.2024 : 09.08.2024 : Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample Location of Sample	: Tap Water : Mines Site (Pakhar-115.13 Bauxite Mine)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 09.08.2024 to 17.08.2024	Sampling Done By Sample Condition	: ELES Pvi. Ltd. : Sealed & Preserved	

Discipline : Chemical		Group:			tory Limit 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit	
pH (at 24.8 °C)	-	APHA 24th Ed.2023, 4500-H	6.68	6.5-8.5	No Relaxation	
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.70	1.0	5.0	
Taste	-	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agrecable	
Odour		1S 3025 (Part-5) :2018	Agreeable	Agrecable	Agreeable	
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.0	5.0	15	
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	62	500	2000	
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 Cl B	13.4	250	1000	
Fluoride (as F)	mg/L	APHA 24th Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5	
Total Alkalinity (as CaCO ₂)	mg/L	APHA 24 th Ed.2023, 2320 B	15.4	200	600	
Total Hardness (as CaCO ₂)	mg/L	APHA 24th Ed.2023, 2340 C	25.1	200	600	
Sulphate (as SO ₄)	mg/L	APHA 24th Ed.2023, 4500 SO ₄ ⁻² -E	1.98	200	400	
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	1.66	45	No Relaxation	

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

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TEST REPORT

Test Report No. : ELES/RNC/2024/4744 Report Release Date : 22.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002663F

Discipline: Chemic	al	Grou	ip: Water	The second secon	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	1S 3025 (Part-26): 2021	0.35	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	6.2	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	al	Gre	oup: Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	1S 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24 th Ed.2023; 3111B	0.079	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	100.0	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

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CIN: U74999JH2018PTC011125

ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD

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Website: www.elespl.co.in

TEST REPORT

 Test Report No.
 : ELES/RNC/2024/4744
 Report Release Date
 : 22.08.2024

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC135872400002663F

Discipline: Chemical		Group: Resid	ues in Water	Regulatory Limit as per IS10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation
Polychlorinated biphenyls (PCB)	µg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation
Pesticides				Li	mit
Alachlor	pg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 3	20
Atrazine	pg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	125	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190	
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0.30	
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		1.0
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0.03	
Álpha HCH	μg/L	ELES/GC/SOP/02; 2023	BDL (DL: 0.006)	-0	.01
Beta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	C	.04

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

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: 28.03.2024

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TEST REPORT

: ELES/RNC/2024/4744 Report Release Date : 22.08.2024 Test Report No.

: TC135872400002663F ULR No.

: 13612312113

Work Order Date

Posticides

Work Order No.

resucides				
Parameter	Unit	Test Protocol	Result	Limit
Delta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0.04
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2.0
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	0.40
DDT(o,p and p,p-isomers of DDT) (o,p DDE and p,p DDD)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0
Discipline : Biological		Group	p: Water	
- 1 m 1.1		1	1 31.4	

Total Coliform Not Per 100 mL IS 15185: 2021 (Qualitative) Detected

Shall not be detected Not Escherichia coli Per 100 mL 15 15185: 2021 Detected (Qualitative)

Remarks: 1. pH and RFC done at Lab.

AKASH KUMAR Quality Manager ELES PVT LTD

****End of Report****

Dr. Deependra Kumar Sinha Ph. D Environmental Engr. ELES Pyt. Ltd. Technical Manne

Page 4 of 4

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/4744	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample	: ELES/RNC/2024/DW/5302 : 08.08.2024 : 09.08.2024 : Drinking Water : Tap Water : Mines Site	
Mines Status Period of Analysis	: Operational : 09.08.2024 to 22.08.2024	Sampling Procedure Sampling Done By Sample Condition	(Pakhar-115.13 Bauxite Mine) : ELES/DOC/SMPL/01 : ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Group: Water		Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	IS 3025 (Part-39): 2021. Clause 6 Infrared Spectroscopic method.	BDL (DL: 0.01)	0.5	No Relaxation

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

AKASH KUMAR Quality Manager ELES PVT_LTD

****End of Report****

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

Page I of I

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TC-13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/4745	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002664F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample	: ELES/RNC/2024/EF/5303 : 08.08.2024 : 09.08.2024 : Effluent Water : Near Mine Block-B, Quarry No.3	
Mines Status	: Operational	Sampling Procedure Sampling Done By	Pakhar Bauxite Mine (115.13 ha) : ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 09.08.2024 to 17.08.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group: Pollution & E	Group: Pollution & Environment		ts - CPCB hedule VI
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 24.8°C)		APHA 24 th Ed.2023,4500-H	8.02	5.5-9.0	5.5-9.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	248	-	(++)
Total Suspended Solids (TSS)	mg/L	1S 3025 (Part-17): 2022	38.6	100	200
Dissolved Oxygen (DO)	mg/L	IS 3025 (Part-38); 2019	6.8	142	**
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	IS 3025 (Part-44): 2023	23.8	30	100
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58); 2023	165	250	144
Dissolved Phosphate (as P)	mg/L	IS 3025 (Part-31/Sec-1): 2022	3.2	5.0	
Fluoride (as F)	mg/L	1S 3025 (Part-60): 2019	0.486	2.0	1.5
Sulphide (as S)	mg/L	IS 3025 (Part-29): 2019	BDL (DL: 0.04)	2.0	, in
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	3.8	10	10

Page 1 of 2

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

ENGINEERING SERVICES PVT. LTD

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

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TC-13587

TEST REPORT

Test Report No. : ELES/RNC/2024/4745 Report Release Date : 22.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002664F

Discipline : Chemi	cal	Group : Resid	Group: Residues in Water		
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
Lead (as Pb)	mg/L	APHA 24 th Ed,2023, 3111 B	BDL (DL; 0.01)	9.1	-
Manganese (as Mn)	mg/L	APHA 24th Ed.2023, 3111 B	0.120	2.0	
Mercury (as Hg)	mg/L	1S 3025(Part-48): 1994; RA2019	BDL (DL: 0.001)	0.01	+-
Nickel (as Ni)	mg/L	APHA 24th Ed.2023, 3111 B	BDL (DL: 0.01)	3.0	-
Zinc (as Zn)	mg/L	APHA 24th Ed.2023, 3111 B	0.101	5.0	

Remarks: pH done at Lab.

AKASH KUMAR Quality Manager ELES PVT, LTD.

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Enga ELES Pvt. Ltd. Technical Mannin

Page 2 of 2

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CONTENT

100	Hindalco Industries : Pakhar (115.13) Environmental Monitoring Report	September 2024
	Pakhar (115,13)	
	AMBIENT AIR QUALITY- CORE ZONE	
[Near Mine Block-B, Quarry No.3	
2	Near Mine Block-B, Quarry No.4	
3	Near Mine Block B, Quarry No - 6	
4	Near Mine Block-B, Quarry No.7	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Bunglapart Village	
2	Yatri Shed (Near K-10)	
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village	
4	Near Utkarmit Rajkiya Prathmik Vioyalaya Dumrapart Village	
	AMBIENT NOISE	
	WORKZONE NOISE	





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TO-63587

TEST REPORT

Test Report No.	: ELES/RNC/2024/5335	Report Release Date	; 23.09.2024
Work Order No.	: 13612312113	Work Order Date	; 28.03.2024
ULR No.	: TC135872400003248F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6169 : Near Mine Block-B, Quarry No.3 Pakhar Bauxite Mine (115.13 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.09.2024 to 13.09.2024 : 16.09.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02 : ELES PVL Ltd.
Period of Analysis	: 16.09,2024 to 23,09,2024	Sampling Done By Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 72	-4	Weather Condition	; Rainy

Discipline : Chemic	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	38	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	15	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1); 2023	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	17.2	80 (24hrs)
Ozone (O ₂)	µg/m³	1S 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m	1S 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₄ H ₄)	µg/m	ELES/GC/SOP/06; 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ⁷	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by
Akash Kumar

**** End of Report****

Dr. dellyerised Signators inha

Dr. Deepend/a Komar Sinha Ph. D. Environmental Engg.

Page Lof 1 Technical Manager

The Decomes maked at Fast Report, is impossible the Laboratory under General Terms and Consistence, only on Company lease should be pre-approved General The results shown in the Leab Report reflects the feedings done by the Laboratory at the time of involvement only and arrive the financial structure. The Laboratory is corporable for all the information or time provided on the report, except the reformation or fast in provided by the client. The Report makes the regardless except the reformation of fast and are part of the tapon or not taken on a course, without prior women approval of the Laboratory. The Report in full or is part shall not be published. Whether, total for my legal across enters posit permission has been externed from the Management of the Laboratory. Attentions to drawn to the furthers of liability, compressions and parents the influence of the fact of the laboratory of the Laboratory and the following the first structure of the find of the laboratory and the first structure of the find of the laboratory and the first structure of the find of the laboratory of the first structure of the find of the laboratory of the first structure of the find of the laboratory of the first structure of the find of the laboratory of the first structure of the find of the laboratory of the first structure of the find of the laboratory of the first structure of the find of the laboratory of the first structure of the first st



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5336	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003249F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6170 : Near Mine Block-B, Quarry No.4 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.09.2024 to 13.09.2024 : 16.09.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	· 16.09.2024 to 23.09.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION						
	Average Temperature (°C)		2	Barometric Pressure (mmHg)	: 740	
_	Relative Humidity (%)	: 72	14	Weather Condition	; Rainy	

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ²	IS 5182 (Part- 23): 2022	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 ⁵	1S 5182 (Part- 2/Sec1): 2023	5.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	23.5	80 (24hrs)	
Ozone (O ₂)	µg/m³	IS-5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Ph)	μg/m³	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)	
Nickel (NI)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₄ H ₄)	μg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	Ol(Annual)	

Reviewed by

Quality Manager

****End of Report****

Dr. Deeplender & Sisse Stoha Ph. D. Environmental Engg.

Technical Manager

Page 1 of 1

The Decement stated in Two Report, is issued by the Laboratory under General Terms and Conditions, only for Company letter hand in pre-approved Jonnas. The results closes on the Fast Report refers to relates only to the jet-complyate done by the Laboratory and the Intervention of the Report refers to relates only to the jet-complyate done by the Laboratory in temporalists for all the information or data provided on the report, except the information which is prevailed by the Caloratory in temporalists for all the information or data provided on the report, except the information which is prevailed by the Caloratory in the Report of the Laboratory in the Report of Information in the Information of Laboratory in the Information in Information in the Information in Information Informatio



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5337	Report Release Date	: 23.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003250F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6171 : Near Mine Block-B, Quarry No.6 Pakhar Bauxite Mine (115.13 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12,09,2024 to 13,09,2024 : 16,09,2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 16.09,2024 to 23.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
T	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 72	4	Weather Condition	Rainy

Discipline : Chemic	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	41	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ¹	1S 5182 (Part- 24): 2019	20	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	17.1	80 (24hrs)
Ozone (O _i)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	1S 5182 (Part- 22): 2019	< 0.002	(24hrs)
Nickel (Ni)	ng/m	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (CsHs)	μg/m ⁷	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

Akas Reviewed by Quality Managar

****End of Report****

Dr. Weependri Kullist Sinha Ph. D. Environmental Engg.

recimical manager

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5338	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003251F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6172 : Near Mine Block-B, Quarry No.7 Pakhar Bauxite Mine (115.13 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.09.2024 to 13.09.2024 : 16.09.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	16.09.2024 to 23.09.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION						
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 740	
3	Relative Humidity (%)	: 72	4	Weather Condition	: Rainy	

Discipline : Chemic	al	Group :	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	48	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	(S 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part- 2/Sec1): 2023	5.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	15 5182 (Part- 6): 2022	15.5	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part- 9) 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	1S 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar

Quality Manager

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D. Environmental En

Page 1 of I

Technical Manager The Discorpens stated or Test Report, to issued by the Labourousy under Countries and Conditions, such on Company Series head in pre-opposited The Discorpers stated or Test Report, or issued by the Laboratory under German Terms and Conditions, only on Company Sette hand to pre-approved German Test Report refer or relates only to the job behalves dense by the Laboratory and the information or stated on the Test Report reflects to behalves drove by the Laboratory or the tested or the Condition or data provided on the report, except the information which is printed by the clean. The Report reflects the upper dural of the port of the state in the clean The Report reflects the upper dural or the port of the first the state in the clean the clean the clean The Report in field or any topic dural or part of the report in the Condition of the clean the cle Report is to Misses Homes, Aldresianan cond. N.A. (Nos Applicable), 1001. (Below Detection Limit). LDL (Lower Detection Lond)



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Website: www.elespl.co.in

TC:13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/5339	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Date	; 28.03.2024
ULR No.	: TC135872400003252F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6173 : Near Bunglapart Village Pakhar Bauxite Mine
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.09.2024 to 13.09.2024 : 16.09.2024
Mines Status	: Operational	Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 16.09.2024 to 23.09.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MALION				
1	Average Temperature ("C)	: 26	2	Barometric Pressure (mmHg)	: 740	
_	Relative Humidity (%)	: 72	4	Weather Condition	; Rainy	

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	42	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	19	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	15 5182 (Part-2/Sec1): 2023	5.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	16.3	80 (24hrs)	
Ozone (O ₁)	μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ⁵	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³-	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar Quality Manager

****End of Report****

Dr. Duburitur Sixtaur Sinha Ph. D. Environmental Engg.

Page | of |

The Decument unter on Last Support, as sound to the Laboratory ander General Terms and Combinions, only on Company latter head in pre-apparated forms. The cavalla shown in the Tent Report The Deciminal stated in Tail Report, is bound by the Laboratory angler General Torius and Combitions, only on Company latter hand in pre-apparent forms. The covario aboves in the Tean Report refers to the produced of the Laboratory as the term of introducement analysms which the Immie of Course, except the information which is previously for a part of the report is not faithful for all the information of Jan provided on the report, except the information which is provided contained as the report of the Laboratory. The Report is faithful for a part of the report is made after most of coverage, without apparent of the Laboratory. The Report is faithful for it part is all and any part of the report is made after the Laboratory. Attachment of the laboratory is faithful for a part of the published after the angle actions to the part performs the begin increased from the Management of the Laboratory. Attachment is the faithful for any part of the laboratory and particularly increased absorption in the faithful form of the laboratory and the laboratory and particularly increased from the Management of the Laboratory. Attachment is the faithful for the faithful form the Management of the Laboratory. Attachment is the faithful form of the laboratory of the labo



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5340	Report Release Date	: 23.09.2624
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC135872400003253F		

CUSTOMER DET	AILS	SAMPLE DETAILS	and the second second
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6174 : Yatri Shed (Near K-10) Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.09.2024 to 13.09.2024 : 16.09.2024
Mines Status	: Operational	Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	16.09.2024 to 23.09.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION						
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 740	
3	Relative Humidity (%)	: 72	4	Weather Condition	; Rainy	

Discipline : Chemic	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	43	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	20	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	15 5182 (Part- 6): 2022	14.8	80 (24hrs)
Ozone (O ₁)	µg/m [†]	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m²	1S 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Ph)	µg/m³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C _k H _k)	μg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by
Akash Kumar
Quality Managar

****End of Report****

Authorised Signatory Dr. Deependra Rumar Sinha

Ph. D. Environmental Engg.

Page I of 1

Technical Manager

The Discount stated in Test Report is around by the Laboratory order General Tomas and Conditions, only on Company Innov boal is pro-approved format. The results shown in the Fest Report refers to relate control to the job analysis done by the Laboratory order. The information separated on the Laboratory at the time of provided by the client. The Report is reported except at full and any part of the report is not also prior permanent in reported except at full and any part of the report is not for some approved of the Laboratory. The Report is not full and any part of the report is not for the source of the Assistance of the Continuency of the Laboratory at the continuence of the Continu



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.ca.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/5341	Report Release Date	: 23.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003254F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6175 : Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village Pakhar Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.09,2024 to 13.09.2024 : 16.09.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.
Period of Analysis	: 16.09.2024 to 23.09.2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION	ř.		
1	Average Temperature (°C) : 26	2	Barometric Pressure (mml	Ig) (740
3	Relative Humidity (%) : 72	4	Weather Condition	Rainy

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	40	100 (24hrs)			
Particulate Matter (PM2,5)	µg/m³	IS 5182 (Part-24): 2019	18	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	μg/m³	[S 5182 (Part- 2/Sec1): 2023	5.1	80 (24hrs)			
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	14.5	80 (24hrs)			
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)			
Ammonia (NH ₅)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	μg/m ¹	1S 5182 (Part- 22): 2019	< 0.002	1 (24hrs)			
Nickel (Ni)	ng/m¹	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m¹	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)			

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha

Alexsh Kumar Quality Managor

Page 1 of 1

The December stated of Test Region to council by the Laboratory studie General Terms and Conditions, only on Company latter head in pre- Jechnical Managers on the Yest Region refer or relates unity to the job analysis done by the Laboratory code. The automatem stand on the Test Report refrequents the findings done by the Laboratory at the time of involvement only and senior the lands of video's memoritation. The Laboratory is expensible for all the adventors or data provided on the report, except the information which to provided by the citient. The Report current for expressional average to fail and say part of the report is not taken one of content, prior normal approval of the Laboratory. The Happert on fail or in part shall not be published. adverted used for any triplinations on the principal term of the been account from the blandarment of the Laboratory. Afternoon is term to the immerse of inhelity components and production more than account of the beautiful terms of the laboratory and the component of the laboratory and labo informed for Makeys from the Date of submissionar of the Test Report. The manufactions begins are so be returned as openified. Any type of Observations or Compliants regarding the Reports shall be done within 17-birst from the Cost of Test Report educated would. After the true period stated before an acompliant with its excepted. The critic Time schoolab manuscool of Test Report of the Sillerine France Miller nation used. No. A. (Mar Applicable), BEH. (Halass Datestion Land), 2.06. (Levers Detection Land)



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Website: www.elespl.co.in



TC-13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/5342	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003255F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6176 : Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village Pakhar Bauxite Mine	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 12.09,2024 to 13.09,2024 : 16.09,2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	= 16.09,2024 to 23.09,2024	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 740	
3	Relative Humidity (%)	:72	4	Weather Condition	: Rainy	

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	44	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	5.3	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	1S 5182 (Part- 6): 2022	13.9	80 (24hrs)		
Ozone (O ₁)	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)		
Ammonia (NH _s)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)		
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m'	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	μg/m³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	DI(Annual)		

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha

Page 1 of 1

The Uncommendated or Ten Report, or mand by the Laboratory under Ground Terms and Conditions, only on Company letter hand in Technical Managers, chosen as the East Report The incurrent expert or the polymetric drive by the Laboratory under Control of the Tain Report reflects the findance by the Laboratory of the time of creative and the Tain Report reflects the findance by the Laboratory of the time of creative and south the least of the report reflects the findance by the Laboratory of the time of creative and south the least of the report reflects the advantage of the advantage to responsible the all the information of data provided in the report receipt the advantage of the Laboratory. The Report research is reported to the report of the laboratory of the Report in the published extension of the report of the laboratory of the Report in the published extension of the report of the laboratory of the Report in the laboratory of the laboratory of the Report in the laboratory of the laborato trace. Top smouthers, of absention & false fraction of the content of appearance of the Test Report is unlessful and offenders may be processed to the falsest extent of the low. All the complete my externed for Notice from the Date of Indicate was of the Tast Report. The samples from Regulatory bedies out to be retained as specified. Any type of Chargottens or Completen regarding that Reports shall be done sollers 15days from the Date of Test Report released wasted. After the time period stated before, the complaints will be accepted. The array Tener schedule maniformed in Test Report is no 2 florage format. Alchievement cond. N.A. (Son Applicable), 1901. (Hadrow Destection Limit). 1.01. (Lower Destection Limit).



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TC-13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/5356	Report Release Date	: 23.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003269F		

CUSTOMER DE	TAILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 12.09.2024 to 13.09.2024 : 16.09.2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 16.09.2024 to 23.09.2024	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg	740
3	Relative Humidity (%)	: 72	4	Weather Condition	: Rainy

Discipline: Chemical		Group: Atmospheric Pollution			
Location	Unit	Test Protocol	Resu	ilt	Regulatory Limit (Industrial Zone)
Quarry Mines Pit Pakhar Bauxite Mine (115.13 ha)	dB(A)	1S 9989: 2020	Time	Luq	
			Day Time	65	75 dB(A) Day Time &:
Sample ID: ELES/RNC/2024/AN/6190			Night Time	47	70 dB(A) Night Time



****End of Report****

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

Page 1 of 1

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ENGINEERING SERVICES PVT, LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5361	Report Release Date	: 23.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003274F			

CUSTOMER DE	TAILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 13.09.2024 : 16.09.2024 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt, Ltd.	
Mines Status	: Operational	Period of Analysis	: 16.09.2024 to 23.09.2024	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 27	2	Barometric Pressure (mml	(g) : 740	
3	Relative Humidity (%) : 70	4	Weather Condition	: Rainy	

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)
Quarry No.7 -			Time.	L_{eq}	
Pakhar Bauxite Mine (115.13 ha) Sample ID: ELES/RNC/2024/WN/6195	dB(A)	IS 4758: 2017	Day Time	73	90 dB (A)

Reviewed hus

****End of Report****

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

Page 1 of 1

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Annexure 3

Date - 22.11.2024

Office Order

Environmental Cell has been re-constituted at Pakhar Bauxite Mine (Area 115.13 ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Abhishek Pradhan(Coordinator)
- 2. Mr. Chandan Kumar- Geologist
- 3. Ms. Abhilasha Singh- Environment Engineer
- 4. Mr. Anand Prakash Tiwari- Environment Engineer

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

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)

Annexure 4

Production, Mined Out, Back Filled and Over Burden removal from April'24 to September'24								
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	NIL	NIL	NIL	NIL
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	82481	0.25	0.57	191521.65
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	63197	0.45	0.35	26905.95
4	Pakhar (8.09) Bauxite Mine	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
5	Pakhar (35.12) Bauxite Mine	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL
6	Pakhar (115.13) Bauxite Mine	115.13	300000	19.07.1996 to 31.03.2030	96744	4.29	8.89	365249.34
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	6200	0.23	0.2	10200.00
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	49850	0.96	0.85	104303.82
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	12450	0.14	0.12	13050.63
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	96115	4.69	2.46	185023.98
11	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	7175	0.97	0.43	21377.24
12	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	49120	5.28	3.56	137098.55
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	87109	2.153	0.987	225462.85

	Minerals & Minerals Limited							
14	Pakhar (109.507) Bauxite Mine	109.507	280000	26.07.2008 to 25.07.2058	147714.95	2.06	2.60	160334.49
15	Pakhar (15.58) Bauxite Mine	15.58	60000	28.04.1965 to 31.03.2030	NIL	NIL	NIL	NIL
16	Bimarla Bauxite Mine	134.526	300000	18.07.2009 to 17.07.2059	78750	4.44	7.35	116233.81
17	Amtipani Chirodih Bauxite Mine	130.01	450000	11.01.2017 to 10.01.2067	140900	4.25	1.50	235195.494

^{*}Static information about the mines included in the above table

Basudev Cangopadhyay
AVP (Planning, Environment and Compliance)

BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2024-25

The composite cost during the year 2023-24 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Bagru (75.41 ha), Hisri New (14.55 ha), Bhusar (65.31 ha), Pakhar (115.13 ha), Pakhars (109.507 ha), Pakhar (15.58 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Sherangdag (155.81 ha), Serangdag (77.89 ha), Jalim & Sanai (12.14 ha), Bimarla Bauxite Mines (134.526 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.87 ha) Kujam II (157.38 ha), and Amtipani Chirodih (130.01 ha) Bauxite Mines.

S No	Description	Budget (in Rupees) FY 2024-25 (From Apr'24 to Sep'24)	Actual (in Rupees) FY 2024-25 (From Apr'24 to Sep'24)
1	Pollution Control & Environment monitoring	61,35,000.00	53,47,442.83
2	Reclamation/ Back filing & Rehabilitation**	5,62,80,000.00	5,60,24,564.93
3	Green belt, Plantation & Water sprinkling arrangement	73,42,000.00	69,41,114.17
4	Rural Development	2,75,00,000.00	2,05,55,592.67

^{**}Part of OB removed cost.

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)