

Date: 20.11.2024

HIL/LHD/ENV/MoEF/KUJAM-II/991

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 Kujam-II Bauxite Mining project of M/s Hindalco Industries Limited located in Dist- Gumla, Jharkhand for the period April'24 to September'24.

Ref: Environmental Clearance letter no J-11015/297/2011M (M) dated 21st July 2015.

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Kujam-II** (157.38 ha) Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period April'24 to September'24.

The lease details are as below:

Lease area (ha)	Production Capacity (MT)	Lease Period	
157.38	300000	24.03.2006 to 23.03.2056	

Hope you will find the same in order.

Thanking You

Yours Sincerely

FOR HINDALCO INDUSTRIES LIMITED

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)

Enclosure: - As Above

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

Name of the Project : Kujam II Bauxite Mine (157.38 ha)

M/s Hindalco Industries Ltd

Environment Clearance No & date

: J-11015/297/2011-IA. II (M) dated 21.07.2015.

Period of compliance Report : From 1st April 2024 to 30th September 2024

A. Specific Conditions

Condition 1- Implementation of all the conditions as specified in earlier EC vide no. J-11015/242/2005-1A.I1 (M), dated 14.08.2006 and shall be complied by M/s Hindalco Industries Limited.

Reply to Condition 1 – Already Implemented. Certified compliance reports duly submitted to MoEF&CC, New Delhi by its Regional Office, Ranchi.

Condition 2- Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Jharkhand and any other Court of Law, if any, as may be applicable to this project.

Reply to Condition 2- Noted.

Condition 3- The environmental clearance is valid for 13 years as the life of mine is 13 years.

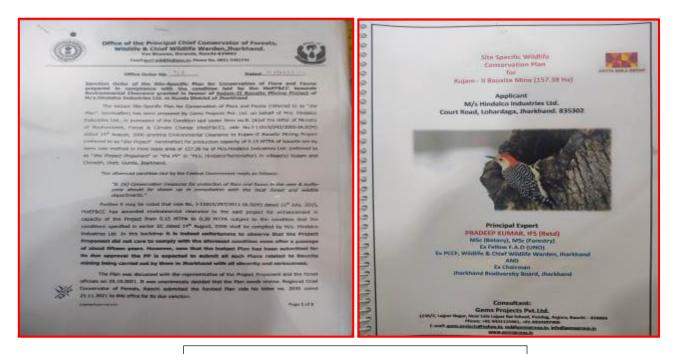
Reply to Condition 3- Noted. This may be extended subject to the enhancement of reserves in due course of mining, in line with the applicable EIA notification.

Condition 4- Environmental clearance is subject to obtaining clearance, if any, under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.

Reply to Condition 4- We understand this is not applicable to this project. The Mine is located outside an eco-sensitive zone.

However, we have prepared Site-Specific Wildlife Conservation Plan (WLCP) in consultation with State Forest Department and also obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand via Office Order No. 51 dated 03.12.2021 for conservation and protection of flora and fauna in the core and buffer zone for Kujam II Bauxite Mine.

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



Site Specific Wildlife Conservation Plan

Condition 5- The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Jharkhand and effectively implement all the conditions stipulated therein.

Reply to Condition 5 - We have obtained Consent to Operate (CTO) from the State Pollution Control Board, Jharkhand, and its stipulated conditions have been implemented effectively. Our existing Consent to Operate (CTO) is valid till 31.12.2025.

Condition 6- No mining activities will be allowed in forest area for which the Forest Clearance is not available.

Reply to Condition 6- Noted. There is no forest area involved within the lease. Therefore, there is no need for forest clearance.

Condition 7- Project Proponent has to conduct a study from an Institution of Repute on the impact of Bauxite dust on crop productivity for agricultural land located around mines and mitigation measures to be implemented by Project Proponent to reduce the impact.

Reply to Condition 7- Study conducted and report prepared. It may be noted that agriculture activity is being carried out in nearby areas and no adverse effect of mining operation is noticed. Mitigation measures suggested in the study report are being implemented.

Condition 8- Project Proponent has to implement the Recommendation by the Institute for Crops most suited in this environment and training to the farmers to switch over to new cropping system which will sustain nutrient loading.

Reply to Condition 8- Study conducted and report prepared. It may be noted that agriculture activity is being carried out in nearby areas and no adverse effect of mining operation is noticed. Mitigation measures suggested in the study report are being implemented.

Condition 9- Implementation of the Recommendations of National Institute of Miners Health for ensuring good occupational environment for mine workers.

Reply to Condition 9- As per recommendations, occupational health surveillance is being conducted periodically by specialized doctors and nurses. Regular training is being conducted on occupational health and work safety environments.

Condition 10- Use of mechanical devices with total mechanization and reducing use of explosives.

Reply to Condition 10- We are using rock breakers as mechanical devices to minimize the use of explosives. Soft strata are being completely excavated without use of any explosives. We are using Nonel for blasting and ensuring the optimal use of explosives. Additionally, we are exploring the use of xcentric rippers for excavating hard strata to further reduce the use of explosives.

Condition 11- Concurrent reclamation of mined out areas.

Reply to Condition 11- Concurrent back filling and reclamation are being carried out in mined out areas.



Concurrent reclamation

Condition 12- Use of an effective sprinkler system to suppress fugitive dust on haul road and other transport roads and comprehensive study for slope stabilization of mine benches and OB dumps in one year.

Reply to Condition 12- Effective water sprinkling is being done to suppress fugitive dust on haul road and other transport roads by mobile water tanker. The Mining Plan has already been approved by IBM, Ranchi and safety measures like benches height and slope are being maintained as per the guidelines issued by DGMS. Currently, there is no OB dump present in the mine lease area.



Mobile Water sprinkler.

Condition 13- Implementation of Action Plan on the issues raised during the Public Hearing. The proponent shall complete all the tasks as per the action plan submitted with the budgetary provisions during the public hearing held on 11.07.2013. The issues raised during Public Hearing were discussed during the Meeting, which inter-alia, included, local employment, regular water spraying to prevent pollution and socio-economic development i.e. water facilities, medical and education etc. As per the villagers' requirements, it was informed by the Proponent that they would prefer to take care of local employment, assistance in medical, drinking water and education facilities etc. These have been incorporated in the action plan with budgetary provisions.

Reply to Condition 13- Noted. The issues raised during the Public Hearing dated 11.07.2013 are being implemented as per the budgetary provisions.

Condition 14- Implementation of Recommendation of Compliance Report by Regional Office of Ministry of Environment, Forest and Climate Change.

Reply to Condition 14- Recommendations of Compliance Report by Regional Office, Ranchi are being implemented.

Condition 15- Washing of all transport vehicles should be done inside the mining lease.

Reply to Condition 15- Being complied. Washing Ramp with Oil & Grease Trap system has been made for Washing of all transport vehicles within mining lease.



Washing Ramp with Oil and Grease Trap

Condition 16- A comprehensive ore evacuation plan for all existing mines of the Project Proponent in the area may be made by streamlining transport of ore based on proper study. Reply to Condition 16- Ore evacuation plan has been prepared, and the transport of ore has been streamlined based on study. The SOP for transport is framed and in place.

Condition 17- Regular and periodical medical examination of the workers engaged in the project shall be carried out and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly.

Reply to Condition 17- Regular and periodical medical examination of the workers engaged in the project is being carried out and records are being maintained by Medical Officer. Occupational health surveillance is being conducted periodically by specialized doctors and nurses.

Condition 18- Implementation of Environment Management Policy of the Company w.r.t, judicious use of Mineral resources for growth & development synchronizing mining & environment with prosperity.

Reply to Condition 18- Environment Management Policy of the Company w.r.t, judicious use of Mineral resources for growth & development synchronizing mining & environment with prosperity is being implemented.

Mining is being carried out in a scientific and eco-friendly manner as per the Mining Plan.

Condition 19- Specific programmes be initiated especially covering education, health care, livelihood generation, infrastructure development & promotion of sports & culture for SC/ST population; Regular monitoring of ground water table to be carried out, as also the depth of water available in the network of existing wells, by constructing new piezometers as required.

Reply to Condition 19- All these aspects are covered under CSR activities, which are being carried out in and around the area. Regular monitoring the ground water table is being carried out through installation of piezometer. The copy of the same report is attached herewith as **Annexure-1**.



Piezometer installed at mine.

Condition 20- Effective safeguard measures, such as regular water sprinkling, shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul roads, loading and unloading points and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

Reply to Condition 20- Effective safeguard measures, such as regular water sprinkling is being carried out in critical areas such as haul roads, loading and unloading points and transfer points.

Regular Ambient Air Quality (AAQ) monitoring is being carried out by NABL accredited Laboratory and all parameters are found within the norms prescribed by the Central Pollution Control Board. Monitoring report of AAQ is attached herewith as **Annexure-2**. Photographs of Water Tanker is attached herewith below.



Water Tanker used for dust suppression.

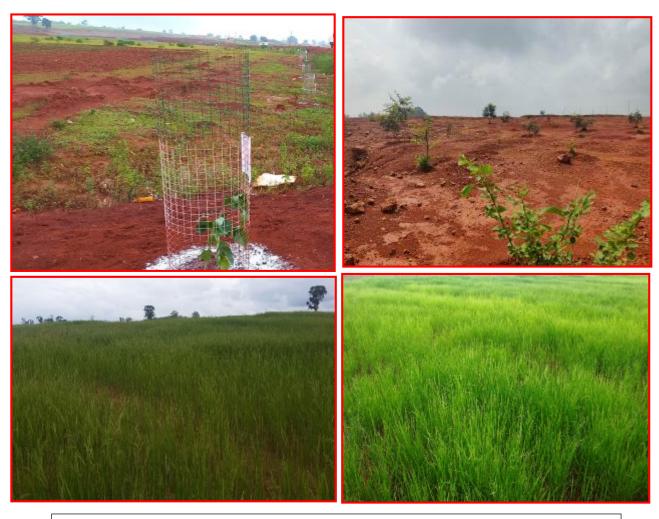
Condition 21- Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. Occupational health and safety measures for workers who are having some ailments like BP, diabetes, or are habitual smokers, should have health check-up once in six months.

Reply to Condition 21- Pre-placement medical examination and periodical medical examination of the workers engaged in the project are being carried out and records maintained as per statute.

Condition 22- Stratified layer system of plantation to be adopted in consultation with the State Govt., which would effectively mitigate the additional dust, sound and vibration.

Reply to Condition 22- Progressive plantation of native species is being carried out in and around mining lease, reclaimed area etc. in consultation with local forest department on regular basis. Total 4000 saplings have been planted on reclaimed area during the period from April'24 to September'24. Cumulative 10.28 ha areas have been planted till date. In addition to these agricultural activities (bio plantation) is going on reclaimed land as per the consent from landowners.

The Green belt development programme is in progress with the progress of mining activities.



Plantation and agriculture on reclaimed area and greenbelt area of Kujam II Mines

Condition 23- The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and ground water for the project.

Reply to Condition 23- Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation. No natural water resource/ground water is being used for mining purposes.

However, No Objection Certificate (NOC) for ground water abstraction has been obtained for drinking purposes only from CGWB/CGWA. The Photograph of Rainwater pond and Ground Water NOC are attached below.



Rainwater Harvesting Pond with fencing.



भारत सरकार जल श्रीम प्रवास जल संसामन, नहीं विकास और गंग संख्या त्रिभाग बन्दीय भूमि जल प्रशिक्तका Government of India Ministry of Jal Shakti Department of Water Resources, er Development & Ganga Rejuvenation. Central Grown Water, Authorithy

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र) NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Pr	roject Name	90			Kujan	ı li Bau	xite M	ine (15	7.38 Ha)					
Pr	roject Addre	955:			Kujan	li Bau	xite M	ine, Vil	- Kujar	n And C	hirodih, Di	st - Gi	imla		
Village:			Kujan	Kujam 8			Block:	Bishur	Bishunpur						
District:			Gumla	a				State:	Jharkh	and					
Pi	in Code:														
C	ommunicati	on Addr	ess:							Comple d - 8353	x, Court R	oad, P	o - Loh	ardaga,	
A	ddress of C	GWB R	egional Of	fice :							Region, 6 Dak Bang				
1.	NOC No.:		CGWA	A/NOC/MIN/REN/2/2024/9801 2. I			Date o	f Issuenc	e 01	01/08/2024					
3.	Application	n No.:	21-4/49	496/JH/MIN/2019				4.	Category: (GWRE 2023)		Si	Safe			
5.	Project St	atus:	Existing	g Gro	und Wa	ter			6.	NOC Type:		R	Renewal		
7.	Valid from	nc	18/09/2	024					8.	Valid up to: 17		17/09/2026			
9.	Ground W	ater Abs	straction P	ermi	tted:										
	Fresh	Water			Saline	Water	0		De	watering	9		1	otal	
	m ^a /day	m³/y		m ^a	day	m ³	/year		m³/day m³/year		m³/day m³/ye		year		
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10.	Details of	ground v	water abst	tractio	on /Dew	atering	struct	ures							
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	Abstraction		-	0	0	-1	0	0	0	0	0	0	0	0	0
	V- Dug Well; D								ne PILMP	u-Mine Pu	mps	-			
11.	. Ground Water Abstraction/Restoration Charges paid (Rs.):				6936.00										
12	Environme	Environment Compensation (if applicable) paid (Rs.):				0.00									

NOC for Ground water

Condition 24- The mining operations shall be restricted to above ground water table, and it should not intersect groundwater table. In case of working below ground water table, prior approval of the Ministry of Environment, Forest and Climate Change and Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.

Reply to Condition 24- Noted. Since shallow depth mining is being carried out, hence there is no intersection with the groundwater table. In future also, working zones will be restricted to above ground water table. We undertake that no mining is/was carried out below ground water table and the same status will be maintain in future also.

However, we are regularly monitoring the ground water table through installation of piezometer. The copy of the same report is attached herewith as **Annexure-1**.

As the water table is not intersecting during mining operation, the detailed hydro-geological study is not applicable for this mine.

Condition 25- The pollution due to transportation load on the environment will be effectively controlled & water sprinkling will also be done regularly. Vehicles with PUCC only will be allowed to ply. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Project should obtain 'PUC' certificate from all the vehicles from authorized pollution testing Centre.

Reply to Condition 25- Regular water sprinkling is being carried out along haul roads, loading and unloading points and transfer points to suppress the dust pollution. All measures are being taken to control vehicular emission. Regular maintenance of vehicles is undertaken to minimize vehicular emission. Vehicles with valid PUC certificates are allowed to transport the mineral. All vehicles are covered with tarpaulins, and non-overloading guidelines are being followed during transportation of mineral.



Tarpaulin covered Truck



Water Sprinkling for dust suppression.

Condition 26- There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis in consultation with Regional Director, Central Groundwater Board, and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.

Reply to Condition 26- A detailed plan to augment groundwater has been prepared, and suitable measures like the creation of water harvesting ponds, etc., are being taken for the augmentation of groundwater in the area, in consultation with the Central Ground Water Board.

Condition 27- Regular monitoring of ground water table to be carried out at the upstream and depth of water available in the dug well is to be measured. Monitoring to be done by establishing a network of existing wells and constructing new piezometers.

Reply to Condition 27- Regular monitoring the ground water table is being carried out through installation of piezometer. The copy of the same report is attached herewith as **Annexure-1**.

Condition 28- Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.

Reply to Condition 28- We have already established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring is being carried out and reported to the concerned authorities. Monitoring Report is attached as **Annexure 2.**

Condition 29- The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations.

Reply to Condition 29- As shallow depth mining is being carried out, there is no intersection of the groundwater table during the mining operation at present and in the future. No natural watercourse and/or water resource is being and will be obstructed due to mining operations.

Condition 30- The topsoil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 450. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office located at Ranchi on six monthly basis.

Reply to Condition 30- Topsoil is being stacked properly with proper slope as and when required for reclamation and rehabilitation. Sequential backfilling and reclamation of the mined-out area are being exercised for which topsoil is being spread on backfilled area for reclamation. Currently, there is no OB dump present in the mine lease area.

The mining is being carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**. Compliance status is being submitted to MoEF&CC on six monthly basis.

Condition 31- Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de silted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of sit material. Sedimentation pits shall be constructed at the corners of the garland drains and de silted at regular intervals.

Reply to Condition 31- To collect & manage rainwater during monsoon, part of mined out area is used as a settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary. Catch drains, Garland drains of appropriate size are being constructed in both around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies, if applicable. Sump of adequate capacity is being provided and maintained as required. Currently, there is no OB dump present in the mine lease area.



Garland drains around mine pit to prevent runoff.



Check drain and Siltation pit around mine pit to prevent runoff.

Condition 32- Dimension of the retaining wall at the toe of over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the rain fall data.

Reply to Condition 32- There is no external dump within the mine lease area as on date. However, to collect & manage rainwater during monsoon, part of mined out area is used as a

settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary.

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

Condition 33- Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained.

Reply to Condition 33- Regular water sprinkling is being carried out in critical areas prone to air pollution such as haul road, loading and unloading point and transfer points. Regular Ambient Air Quality (AAQ) monitoring is being carried out by NABL accredited Laboratory and all parameters found within the norms prescribed by the Central Pollution Control Board.

Regular monitoring of surface water (springs/perennial nallahs) is being conducted.

Monitoring report of AAQ and water quality are attached herewith as **Annexure-2**

Condition 34- Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. Drills shall either be operated with dust extractors or equipped with a water injection system.

Reply to Condition 34- Blasting time is fixed during Lunch Time i.e. 1.00 PM-2.00 PM. We have control blasting permission. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. Efforts and mitigative measures are being taken to reduce the impact of the blast. Wet Drilling practice is adopted at our mines.



Wet Drilling

Condition 35- Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, Mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

Reply to Condition 35- Local laborers are employed who reside nearby villages. However, Safe Drinking water, mobile health care facilities etc. are being provided in nearby villages under CSR programmes. Necessary infrastructures and facilities for office staff are in place at Netarhat plateau.

Condition 36- A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change. 5 years in advance of final mine closure for approval.

Reply to Condition 36- A Final Mine Closure Plan along with details of corpus fund will be submitted to the Ministry of Environment, Forest and Climate Change in appropriate time for approval as per applicable guideline and timelines mentioned in MCDR/IBM guideline who are competent authority to approve the same.

Based on present resource estimate and peak rated production capacity mentioned in EC, Mining operation is being carried out.

B. General Conditions

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

Reply to Condition 1- Noted.

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

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

Condition 3- The critical parameters such as PM10 (size less than 10 micrometer), PM2.5 (size less than 2.5 micrometer), NO in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

Reply to Condition 3- Monitoring of AAQ and water quality is being done. Monitored data is being uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. Monitoring reports are attached as **Annexure 2**.

Condition 4- Four ambient air quality-monitoring stations should be established in the core zone as well as buffer zone for PM10, PM2.5, SO2 & NOx monitoring. Location of the stations should be decided based on the ecologically sensitive targets and the frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. Data on ambient air quality should be regularly submitted to the Ministry including its Regional Office located at Ranchi and the State Pollution Control Board/Central Pollution Control Board once in six month.

Reply to Condition 4- We have already established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring is being carried out and reported to the concerned authorities. Monitoring report is attached as **Annexure 2**.

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

Reply to Condition 5- Mobile water tanker with sprinkling facility has been provided along the haul roads, loading, unloading & at transfer points to suppress the dust generation.



Water Tanker used for dust suppression

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

Reply to Condition 6- Measures are being taken for control of noise levels below 85 dB (A) in the work environment. Workers engaged in operation of HEMM, etc. has been provided with ear plug / muffs. The noise level monitoring is being conducted at a regular interval. The noise level is within the prescribed norms. Report is attached as **Annexure 2.**

Condition 7- Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Ground water Authority, Regional Director, Central Ground water Board, State Pollution Control Board and Central Pollution Board.

Reply to Condition 7- Regular monitoring of Water quality upstream and downstream of water bodies are being carried and reported to reported to the concerned authorities. Monitoring report is attached as **Annexure-2**.

Condition 8- Regular monitoring of ground water level and quality shall be carried out in constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year - pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Ranchi, Central Ground Water Authority and Regional Director, Central Ground Water Board.

Reply to Condition 8- We are not using ground water for mining purposes. Shallow depth mining is being carried out, hence there is no intersection of ground water table during the mining operation at present and in future. A piezometer has been installed for monitoring of ground water level. The ground water level and water quality reports are being sent regular to regional office of Ministry, CGWA and JSPCB. The same is attached herewith as **Annexure 1 & 2**.

Condition 9- Industrial wastewater (workshop and wastewater from the mine) should be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19m May, 1993 and 31' December 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

Reply to Condition 9- There is no industrial wastewater generation from mining operation. We are not discharging any wastewater outside the mine lease area. However, negligible amount of wastewater is generated in workshop from washing of vehicles and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in close circuit and being reused for washing of vehicles in the workshop.

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



Washing Ramp with Oil and Grease Trap

Condition 10- Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

Reply to Condition 10- All the workers have been provided with PPEs including dust mask and dust respirators. Apart from PPEs distribution to all workers, we are also providing adequate safety training and conducting awareness session on Safety and health aspects on regular basis.

Condition 11- A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.

Reply to Condition 11- A separate environmental management cell with suitable qualified personnel has been set up under the control of a Senior Executive, who is reporting directly to the Head of the Organization. The same is attached herewith as **Annexure 3.**

Condition 12- The funds earmarked for environmental protection measures should be kept in a separate account and should not be diverted for other purposes. Year-wise expenditure should be reported to the Ministry and its Regional Office located at Ranchi.

Reply to Condition 12- Every year, the funds earmarked for environmental protection measures is being budgeted separately and its expenditure is being reported to the Ministry. The copy of the same is attached as **Annexure 5**.

Condition 13- The project authorities should inform the Regional Office located at Ranchi regarding the date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

Reply to Condition 13- This is an operative mine hence provision related to financial closure is not applicable.

Condition 14- The Regional Office of this Ministry located at Ranchi shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

Reply to Condition 14- Noted & Agreed.

Condition 15- The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Pollution Control Board and State Pollution Control Board.

Reply to Condition 15- Six-monthly reports on the implementation status of the stipulated environmental safeguards, as per EC conditions, are being submitted regularly.

Condition 16- The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Pollution Control Board and State Pollution Control Board.

Reply to Condition 16- Six-monthly reports on the implementation status of the stipulated environmental safeguards, as per EC conditions, are being submitted to the MoEF&CC, CPCB and JSPCB, Ranchi.

Condition 17- A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.

Reply to Condition 17- Complied. A copy of clearance letter has already been submitted.

Condition 18- State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.

Reply to Condition 18- Noted. The EC Letter has been submitted to JSPCB for display of same at its Regional office and other government offices.

Condition 19- The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at http://envfor.nic.inand a copy of the same should be forwarded to the Regional Office of this Ministry located Ranchi

Reply to Condition 19- Noted and complied. The information on grant of the EC has been published in two local newspapers (Hindustan and Dainik Jagran) on 27.07.2015. The copy of the advertisement has already been submitted to the Regional Office of the MoEF&CC.

Annexure 1

Piezo	Piezometer Reading - Kujam -II Bauxite Mine							
S No	Month	Depth (meter)						
1	Apr-24	33.24						
2	May-24	33.77						
3	Jun-24	33.15						
4	Jul-24	32.19						
5	Aug-24	32.93						
6	Sep-24	33.02						

ENVIROCHECK

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

Kujam II Bauxite Mine-Environmental Monitoring Report

April 2024

CONTENT

	Hindalco Industries : Kujum-II Bouxite Mine Environmental Monitoring Report April 2024
	Kujam-II Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Kujam-II Weigh Bridge
2	Nawatoli Quarry
3	Quarry 195
4	Bhattipat
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near DipaKujam Village





TEST REPORT

Test Report No.	: ENVJK/1159/APR/TR(W)24-25	Report Release Date	: 28.04.2024	
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/1684		
		Location	: Kujam-II Weigh Bridge		
	land in the same and the same		Kujam-II Bauxite Mine (157.38ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 16.04.2024 to 17.04.2024		
		Sample Received Date	: 22.04.2024		
		Type of Sample	: Ambient Air		
		Sampling Procedure	: ELES/DOC/SMPL/02		
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Scaled & Preserved		

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmFlg)	: 734
3	Relative Humidity (%)	: 60	- 4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	81	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	52	60 (24hrs)
Sulphur Di-Oxide (SO ₁)	µg/m³	IS 5182 (Part 2): 2001	13.5	80 (24hni)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part 6): 2006	33.1	80 (24hrs)
Ozone (O ₁)	µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	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/m ³	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	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/m³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

Page 1 of 1





TEST REPORT

Test Report No.	: ENVJK/1160/APR/TR(W)24-25	Report Release Date	: 28.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETA	MLS	SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1685 : Nawatoli Quarry Kujam-II Bauxite Mine (157.38ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 16.04.2024 to 17.04.2024 : 22.04.2024 : Ambient Air		
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFORMATION			5.000
-1	Average Temperature (°C) : 32	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part 23): 2006	66	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	37	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part 2): 2001	8.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part 6): 2006	23.9	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NHz)	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 ²	IS 5182 (Part- 22): 2019	0.02	1 (24hrs)
Nickel (Ni)	ng/m³	1S 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/m ^x	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 :

(Suswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Kolkata Office: 63/8, Bastraguru Avenue, Kolkata - 700028 (033-25792891/25497490 Email: envirocherà50@gmail.com



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Lab : MUG, R-3 Housing Colory, Dhambad, Pin - 826001, State - (harkhand E 9830967644 / E 9304513797

TEST REPORT

Test Report No.	: ENVJK/1161/APR/TR(W)24-25	Report Release Date	: 28.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1686 : Quarry- 195 Kujam-II Bauxite Mine (157.38ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.04.2024 to 17.04.2024 : 22.04.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Sealed &Preserved	

MI	ETEOROLOGICAL INFORMATI	ON		
1	Average Temperature (°C) : 32	2	Barometric Pressure (mm)	lg) : 734
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	67	100 (24hrs)
Particulate Matter (PM2.5)	$\mu g/m^3$	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	$\mu g/m^3$	IS 5182 (Part 2): 2001	8.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part 6): 2006	19.8	80 (24hrs)
Ozone (O ₃)	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)	my/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Shes)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	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 :

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory:

Then?

(Bapan Das, Dy. Technical Manager)

Page | of |

Kolkata Office: 63/8, Bastraguru Avenue, Kolkata - 700028 [032-25792891/25497400 Emzil envirozhock50@lemzil.com



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Lab : MSG, R-3 Housing Colony, Ehanhad, Pin - 826001, State - thankband \$ 9830067044 / \$ 9304513737

TEST REPORT

Test Report No.	: ENVJK/1162/APR/TR(W)24-25	Report Release Date	: 28.04.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ENVJK/2024/AA/1687 : Bhuttipot Kujum-II Bouxite Mine (157.38ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 16.04.2024 to 17.04.2024 : 22.04.2024 : Ambient Air : ELES/DXX/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Sealed &Preserved	

M	ETEOROLOGICAL INFO	RMATION			
	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	ion	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part 23): 2006	62	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L; 2006	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part 2): 2001	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part 6): 2006	22.8	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	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/m ³	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)	<1.0	05(Annual)
Benzo-(a)-Pyrene	ng/m³	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager

Authorized Signatory:

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Kalkata Office: 63/8, Rastraguru Avenue, Kolkata - 708028 € 033-25792891/25497490 Email envirochech50@gmail.com





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TEST REPORT

Test Report No.	1 ENVJR/H3%APR/TR(W)24-25	Report Release Date	: 28,04,2824
Work Order No.		Work Order Date	: 28.03.2024

CLSTOMER DETA	ULS.	SAMPLE DETAILS	
Customer Name	: Hindus Industries Limited	Sample Ref. No. Location Sampling Disir.	: ENVIRGENDA/AA 1164 : Ricar Patrificado VPIlago : 17,04,2024 pr. IV.04,2034
Address	: Loturdago, Porkhand-193302	Sample Recorded Date Type of Sample Barryling Procedure	: 22.04.2014 : Antibies Air : ELES/DOC/SMFL/02
Mines Stetus	: Opentium/	Sampling Done By	: BLES Pyr. Lid.
Pipood of Analysis	: 22.04.3034 to 31.04.3034	Simple Condition	Sesiod &Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (*C) : 29	2	Barometric Pressure (mmHg)	: 742
3 Relative Humidity (%) : 61	4	Weather Condition	Class

	Disciplin	e: Chemles/Group: Atmospheric Pollat	Sec .	
Parameter	List	Test Protocol	Remit	Regulatory Limit
Particules: Matter cPM101	'HB,ILL	IS 511/2 (Part 23): 2006	63	100 (24hrs)
Particulate Matter (PM2.5)	ugo?	USEPA 1997s, 10 CFR Part 50. Appendix L: 2006	34	50 (24hrs)
Solphur Di-Onide (SO)	µg/m²	15.5182 (Pan 2): 2001	9.1	80 (247)(0
Nitrageo Di-Oxide (NO ₃)	µg/m²	15.5182 (Part 6 to 2006	24.5	30 (24hrs)
Ozose (O ₁)	pg'm"	(5.5) 82 (Part- 9); 2019	<20.0	100 (Bhs)
Aromonia (NE.)	pg/m²	15 5192 (Pan-25); 2018	<10.0	400 (24hrs)
Cinberi Monuxide (CO)	ingm*	IS 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (Wes)
Losf (Pb)	18.0	(\$.5182 (Part. 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng m	15 5 (82 (Parts 26): 2020	<6.0	20 (Annuil)
Americ (As)	ngim"	USEPA Method – IQ-3.5 (ICP-NS Method)	<2.0	06 (Annual)
Bergere (C.H.)	ligim ³	USEPA Method - TD-3 (GC-btS Method)	<2.5	(HAnnai)
Benzo-jaj-Pyrene	qg:m1	USEPA Method - TO-3/4 (OC-MS Method)	<0.5	(Inmed)

Reviewed by

(Sawata Burman Roy, Dy. Quality Manager) |

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Page 1 of 1

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TEST REPORT

Test Report No.	: ENVJK/1140/APR/TR(W)24-25	Report Release Date	: 28.04.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DETA	ALLS	SAMPLE DETAILS	
Clatemer Name	Hindaico Industries Limited	Sample Ref. No. Location Sampling Date	: ENVJE/2004/AA/1665 : New Pol Pol Village : 17.04-2024 to 16.04-2024
Address	: Lohardaga, Jharlchend-835302	Sample Received Date Type of Sample Sampling Procedure	: 22.94.2924 : Ambient Air : ELES/DOC/SMPL/92
Mines Status	: Operational	Sampling Done By	: ELES PVL Ltd.
Period of Analysis	: 22.04.2024 to 28.04.2024	Sample Condition	: Scaled &Preserved

M	ETEOROLOGICAL INFOR	MATION			
-1	Average Temperature (%C)	: 29	2	Berometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	:61	4	Weather Condition	: Clear

	Discipilu	e: ChemicalGroup: Atmospheric Poliut	fou	
Parameter	Unit	Tast Protocul	Resids	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part 23): 2006	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ¹	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	32	60 (24hrs)
Suiphur Di-Oxide (SO ₂)	µg/m³	18 5182 (Part 2): 2001	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part 6): 2006	24.1	80 (24hrs)
Ozona (Os)	µg/m²	IS 5182 (Part- 9): 2019	<20.	100 (Blus)
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m1	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	jug/m"	IS 5182 (Part- 22): 2019	< 8.0	1 (24hrs)
Niekał (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	USEPA Mothod – IO-3.5 (ICP-MS Method)	<2.6	06 (Annual)
Benzene (C ₆ H ₆)	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)	<0.1	01(Annual)

Reviewed by z

THE .

(Suswata Burman Roy, Dy. Quality Manager)

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Authorhold Signatory:

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(Bopan Das, Dy. Technical Manager)

Page 1 of 1



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TEST REPORT

Test Report No.	:ENVJK/1141/APR/TR(W)24-25	Report Release Data	: 18.04.1024
Work Order No.	: 13612312113	Work Order Date	: 18,63.2024

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Conomer Name	: Hindajeo Industries Limited	Sample Ref. No. Location Sampling Date	ENVJK/2024/AA/1666 : Near Shelduspeni Village : 17,04.2024 to 18,04.2024
Address	: Lehardage, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	22.04.2024 Ainbient Air ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Litt.
Period of Analysis	: 22.04,2024 to 2E.04,2024	Sample Condition	: Sexied &Preserved

341	TEOROLOGICAL INFO	RMATION			
1	Average Temperature (*C)	:30	1.2	Barometric Pressure (mmHg)	: 240
3	Relative Humidity (%)	: 62	4	Weather Condition	: Clear

	Disciplin	e: ChemicalGroup: Atmospheric Pollut	lon	
Parameter	Unlt	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	1S 5182 (Part 23): 2006	68	100 (24hra)
Particulate Matter (PM2.5)	µg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	36	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μ <u>μ</u> /m ³	IS 5182 (Part 2): 2001	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part 6): 2006	24.1	80 (24hm)
Ozone (O ₂)	µg/m³	1S 5182 (Part- 9); 2019	<20.0	100 (Shrs)
Ammonia (NH ₁)	μg/m ³	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	0.009	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26); 2020	<6.0	26 (Annual)
Arsenio (As)	ng/m³	USEPA Method – IO-3.5 (ICP-MS Method)	<2.0	06 (Annual)
Benzene (C ₄ H ₆)	µg/m³	USEPA Method – TO-3 (GC-MS Method)	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ⁴	USEPA Method – TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by a

(Saswata Burman Soy, Dy. Quality Manager)

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(Bapan Das, Dy. Technical Manager)

Page 1 of 1



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	: ENVJK/1142/APR/TR(W)24-25	Report Release Date	: 28.04.2024
Work Order No.		Work Order Date	: 18.63.2624

TEST REPORT

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindeloo Industries Limited	Semple Ref. No. Location Sampling Date	: ENV/K/2024/AA/1667 : Near DipoKujam Village : 17.04.2024 to 18.04.2024
Address	: Lohardega, Jhankhand-#35302	Semple Received Date Type of Sample Sampling Procedure	: 22.04.3024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By:	1 ELES Pvt. Ltd.
Period of Analysis	: 22.04.2024 to 28.04,2024	Sample Condition	: Sexled &Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) :31	2	Barometzic Pressure (mmHg)	: 742
3 Relative Hamility (%) : 59	4	Weather Condition	: Clear

Parameter	Unit	e: ChemicalGroup: Atmospheric Pollus	P. Contract	The state of the b
	1	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m²	IS-5182 (Part 23): 2006	58	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	USEPA 1997a,40 CFR Part 50, Appendix L: 2006	33	60 (24hrs)
Sulphur Di-Oxide (SO ₁)	µg/m³	IS 5182 (Part 2): 2001	7.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μμ/m³	15 5182 (Part 6): 2006	23.1	80 (24hrs)
Ozotte (O ₃)	µg/m ^T	IS 5182 (Part- 9): 2019	<20.0	(esi8) 001
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part- 22): 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (An)	ng/m²	USEPA Method – IO-3.5 (ICP-MS Method)	<3.0	06 (Annual)
Benzene (CeHs)	μg/m³	USEPA Method – TO-3 (GC-MS Method)	<1.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ⁸	1/SEPA Method - TO-3A (GC-MS Method)	<0.5	01(Annual)

Reviewed by :

(Saswata Borman Roy, Dy. Quality Manager)

Authorised Signatory:

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(Bapan Das, Dy. Technical Managur)

Page 1 of 1

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Kujam II Bauxite Mine-Environmental Monitoring Report

May 2024



CONTENT

-	Kujam-II Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Kujam-II Weigh Bridge
2	Nawatoli Quarry
3	Quarry 195
4	Bhattipat
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	New Pol Pol Village
3	Near Shakhuaponi Village
4	Near DipaKujam Village
	Drinking Water







PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, KANCHI-834003 (JHARKHAND) GST NO:- 20A4ECE97330320

ENGINEERING SERVICES PVT. LTD.

Email: info@lelespt.co.in . eles.conchi@gmail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2789	Report Release Date	: 23.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000755F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3058 : Kujam-II Weigh Bridge Kujam-II Bauxite Mine (157.38ha)	
Address	: Lohardags, Fharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.05.2024 to 15.05.2024 : 18.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

ME	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	1742
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Chemical	Group: Atmospheric Pollution		
Unit	Test Protocol	Result	Regulatory Limit
µg/m³	IS 5182 (Part- 23): 2022	78	100 (24hrs)
μg/m³	IS 5182 (Part- 24): 2019	50	60 (24hrs)
μg/m³	IS 5182 (Part- II/Sec- 1): 2023	13.1	80 (24hrs)
µg/m³	IS 5182 (Part- 6): 2022	34.6	80 (24hrs)
μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)
µg/m³	1S 5182 (Part- 25); 2018	<10.0	400 (24hrs)
mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
µg/m²	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)
ng/m ¹	15 5182 (Part- 26): 2020	<6.0	20 (Annual)
ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
	Unit µg/m³ µg/m³ µg/m³ µg/m³ µg/m³ µg/m³ µg/m³ ng/m³	Unit Test Protocol μg/m³ IS 5182 (Part- 23): 2022 μg/m³ IS 5182 (Part- 24): 2019 μg/m³ IS 5182 (Part- 1l/Sec- 1): 2023 μg/m³ IS 5182 (Part- 6): 2022 μg/m³ IS 5182 (Part- 9): 2019 μg/m³ IS 5182 (Part- 25): 2018 mg/m³ IS 5182 (Part- 10): 2019 (NDIR Method) μg/m³ IS 5182 (Part- 22): 2019 ng/m³ IS 5182 (Part- 26): 2020	Unit Test Protocol Result μg/m³ IS 5182 (Part- 23): 2022 78 μg/m³ IS 5182 (Part- 24): 2019 50 μg/m³ IS 5182 (Part- Il/Sec- 1): 2023 13.1 μg/m³ IS 5182 (Part- 6): 2022 34.6 μg/m³ IS 5182 (Part- 9): 2019 <20.0

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO-2004ECE97130124

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/2024/2789	Report Release Date	: 23.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
III.R No.	: TC135872400000755F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _t H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by

AKASH KUMAR Quality Managur ELES PVT LTD.

End of Report

Authorised Signatory

Dr. Deependra Kumar Sinhu. Ph. D Environmentol Engg. 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:- 20A4ECE9713D124

ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/2790	Report Release Date	: 23.05,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000756F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3059 : Nawatoli Quarry Kujam-II Bauxite Mine (157,38ha	
Address	: Loharduga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.05.2024 to 15.05.2024 : 18.05.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Baromatric 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	39	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	25.1	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-10, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO: 20A4ECE97130124

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2790	Report Release Date	: 23.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
patrionical del la fallación parametros recom-				

ULR No. : TC135872400000756F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _s H _e)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ⁸	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, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHANDI GST NO-300AFCE9713012)

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2791	Report Release Date	: 23.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000757F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3060 : Quarry- 195 Kujam-H Bauxite Mine (157.38ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.05.2024 to 15.05.2024 : 18.05.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline: 0	hemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	72	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	39	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS-5182 (Part-11/Sec-1): 2023	9.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)	
Ozone (O ₂)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	µg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lend (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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Work Order No.

ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSARDVAR ENCLAVE, TUPUDANA HATIA, RANCHT-834003 (JHARKHAND) GST NO:- 20A4ECE9723D12A

ENGINEERING SERVICES PVT, LTD.

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

: 28.03.2024

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



TEST REPORT

Work Order Date

Test Report No. : ELES/RNC/2024/2791 Report Release Date : 23.05.2024

ULR No. : TC135872400000757F

: 13612312113

Discipline: Chemical		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/m²	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

AKASH KUMAR Quality Managur

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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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO-30A46CE9713D124

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/2024/2792	Report Release Date	: 23.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000758F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: HindaIco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/3061 : Bhattipat Kujam-II Bauxite Mine (157.38ha)	
Address	: Lohardags, Jhurkhand-835302	Sampling Date Sample Received Date	: 14.05.2024 to 15.05.2024 : 18.05.2024	
Mines Status	Status : Operational Type of Sample Sampling Procedure		: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 18.05.2024 to 23.05.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline: 0	Themical	Group: Atm	ospheric Polls	rtion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μ <u>μ</u> /m³	IS 5182 (Part- 23): 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO ₃)	μg/m ³	IS 5182 (Part-11/Sec- 1): 2023	9,1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m [†]	1S 5182 (Part- 6): 2022	23.4	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 Monexide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Leud (Pb)	pg/m³	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ⁴	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 (BHARKHAND) GST NO-30AACCEPT280124

ENGINEERING SERVICES PVT. LTD.

Emoil: info@elespl.co.in , eles.ronchi@gmail.com

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



10-100

TEST REPORT

Test Report No.	: ELES/RNC/2024/2792	Report Release Date	: 23.05.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400000758F			

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)

Reviewed by AKASH KUMAR

Quality Managur

****End of Report****

Authorised Signatory

Dr. Deependra Kurnar Sinha Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manner

Page 2 of 2

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PLOT NO-50, MARKSAROVAH ENCLAVE, TUPUDANA HATIA, RANCHI-ESADOS (MARKHANO) OSTNO- 20AAECESTIIDIZA

ENDINERRING SERVICES PVT. LTD.

Email: info@elegal.co.in , elss runchi@amail.com Phone no.: 9651-2290103 Website : www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/2680	Report Release Date	1 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000649F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/2971 : Near Pakri Gada Village : 10.05 2024 to 11.05 2024	
Address	: Lobardaga, Tharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 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 & Presurved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 53	2	Burometric Pressure (mmHg)	1743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Ata	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m²	PS 5182 (Part- 23): 2022	59	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Suiphur Di-Oxide (50 ₂)	µg/m ³	15 5182 (Part-IUSec- 1): 2023	8.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₁)	pg/m ³	IS 5182 (Part-6): 2022	24.9	30 (24hrs)	
Ozona (O ₃)	pa/m²	IS 5182 (Part- 9): 2019	<20.0	100 (Bhrs)	
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10,0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hs)	
Lead (Pb)	µg/m²	1S 5182 (Part-22): 2019	<0.002	7 (24hes)	
Nickel (Ni)	ng/m²	IS-5182 (Part-26): 2020	<6.0	20 (Annual)	
Arsenic (An)	hg/m²	ELES/AJR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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Email: Info Delegal co.in. eles reach Damail com Phone no.: 0611-2290101 Website: www.elespi.co.lis



TEST REPORT

Test Report No.	: ELES/RNC/2024/2680	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000649F		

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzine (C _i H _i)	11g/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(n)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annsal)

AKACHHMUNIAR Quality Managur ELES PVT. LTD.

****End of Report****

Authorised Signatory

Dr. Despendra Kumia Siniar Ph. D Environmental Evos. ELES PVI, Ltd. Technical Identification

Page 2 of 2

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PLOT NO 30, MANSAROVAR ENCLEVE, TUPUDANA HATIA, RANCH-ESROCS (HARIEHAND) EST NO-200451257180124

ENGINEERING RESURCES PVT. LTD

Email: info@lejezpi.co.jit., ejes.ranchi@gmeil.com Phone mo.: de53-2290103 Website: www.ejespi.co.jin



TEST REPORT

Tust Report No.	: ELES/RNC/2014/2681	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.63.2024
ULR No.	: TC135872400000650F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/2072 : Neur Pot Pol Village : 10.05.2024 to 11.05.2024
Address	: Lobardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 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

M3	ETEOROLOGICAL INFORMATION			
ī	Average Temperature (%) : 33	2	Barometric Pressure (mmHg)	: 742
	Relative Hamidity (%) : 59	:4	Weather Condition	: Clear

Discipline: (Chemical	Group: Atm	ospheric Polls	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m²	IS 5182 (Part- 23): 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m²	IS 5182 (Part-24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₃)	µg/m ³	18 5182 (Part-11/Sec-1): 2023	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2022	24.7	80 (24hns)
Ozone (O ₃)	ng/m²	15 5182 (Phrt- 9): 2019	<20.0	100 (8bs)
Ammonia (NH ₄)	µg/m ^b	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Mosoxide (CO)	mg/m³	TS 5182 (Part- 10); 2019 (NDIR Method)	<3.0	2 (Blus)
Leod (Pb)	µg/in ^T	1S 5182 (Part- 22): 2019	0.009	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Pari- 26): 2020	<6.0	20 (Annual)
Assenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annuil)

Page 1 of 2

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ENGINEERING SERVICES PYT. LYD.

Email info@elessi.co.in , elez ranchi@email.com Phane en .: 0651-2190108 Website : www.alexal.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2014/2681	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000650F		

Discipline: Chemical		Group: Atmuspheric Pollution		
Parameter	Unit	Test Protocul	Result	Regulatory Limit
Benzana (C ₁ H ₆)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(u)-Pyrene	ng/m1	ELES/GC/9OF/05: 2023	<0.5	01(Annual)

Reviewed by

Quality Managur FLES PVT LTD ****End of Report****

Anthorised Signatory
Dr. Deependra K. Smar Sinba
Ph. D Emironitrico Fingo
et 155 Pvt. Ltd. Technicol Mentil 11

Page 2 of 2

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Email: info@lejesal.co.in , eles.conchidfiamoli.com Phone No.: 0651-2290109 Whiteler: www.eleapi.co.in



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TEST REPORT

Test Report No.	: ELES/RNC/2024/2682	Report Release Date	: 19.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000651F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/2973 : Near Shukhuapuni Village : 10.05.2024 to 11.05.2024
Address	: Lohardugii, Tharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 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	: Souled & Preserved

DETEOROLOGICAL INFORMATION			
Average Temperature (°C) :33	2	Barometric Pressure (mmHg)	:742
Relative Humidity (%) : 59	4	Weather Condition	: Clmir

Discipline: (Chemical.	Group: Atmospheric Pollution		
Parameter.	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part- 23): 2022	60	100 (24hm)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphor Di-Oxide (SO ₂)	µg/m1	15 51R2 (Part- II/Sec-1): 2023	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	µg/m³	IS 5182 (Part- 6): 2022	23.5	80 (24hm)
Ozone (O ₃)	µg/m³	15:51#2 (Part- 9): 2019	<29.0	100 (Illizis)
Ammonia (NH ₂)	µg/m²	IS 5182 (Pars- 25): 2018	<10.0	400 (24lms)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDER Method)	<1.0	2 (Blys)
Load (Pb)	pg/m²	IS 5182 (Part-22); 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ²	35 5182 (Part- 26): 2020	<6.0	20 (Annual)
Americ (Ax)	ng/m²	ELES/AIM/SOP/01: 2021	<2.0	(launus) 60

Page 1 of 2

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Small intollerest to is a electronic femal con-Phone no.: 0651-2290103 Widalta : www.elegnl.co.lir



TEST REPORT

Test Report No.	: ELES/RNC/2024/2682	Report Release Date	118.05.2024
Work Order No.	: 13612312113	Work Order Date	+28.03.2024

ULR: No. : TC135872400000651F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benrene (C ₄ H ₄)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrope	ng/m³	ELES/GC/SOP/05: 2023	41.5	01(Anotal)

AKASIMPHWIMER Quality Managur ELES PVT LTD

****End of Report***

Authorised Signatory

Dr. Despendre Kumor Binliu Pn. D Environmental Santa

ELES Pvs. Ltd. Technical Manny

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/2683	Report Release Date	: 18.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC13587240000065ZF		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/2974 : New Dips Kujum Village : 10.05.2024 to 11.05.2024	
Address	: Lohardage, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 13.05.2024 : Ambieu 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	: Scaled & Preserved	

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

Discipline: 0	Themical	Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protucol	Result	Regulatory Limit	
Particulate Matter (PM10)	ug/m²	IS 5182 (Piet- 23): 2022	61	100 (24hn)	
Particulate Maner (PM2.5)	µg/m³	IS 5182 (Pirt- 24): 2019	35	60 (24lm)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-1l/Sec-1): 2023	7.6	80 (24hn)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS-5182 (Part-6): 2022	24.7	80 (24hrs)	
Ozime (Oz)	µg/m²	IS 5182 (Part-9): 2019	<20.0	100 (8hn)	
Assmonia (NH ₄)	ug/m³	15 5182 (Part- 25): 2018	<10.6	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part. 10): 2019 (NDIR Method)	<1.0	2 (8hts)	
Lead (Pb)	µg/m ³	TS 5182 (Part+22): 2019	0.009	1 (24hm)	
Nickel (NI)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Amual)	

Page 1 of 2

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ENGINEERING SERVICES PVY, LYD.

Emili (ala@elesal.co.in., eles ranchi@email.com Phone no.: 0651-2290103 Website : www.elesal.co.in



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TEST REPORT

Test Report No.	ELES/RNC/2024/2683	Report Release Date	: 18.05.2024
Work Order No.	13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000652F		

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

AKASH WOMAR Quality Managar ELES PVT, LTD.

****End of Report****

Anthorised Signatury

Dr. Daegendra Kumar Sin. L. Ph. D Bretonmercki Engo. ELES Pvt. Ltd. Technical Marrier

Page 2 of 2

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ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/2897	Report Release Date	: 28.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400000857F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/DW/3071 : 14.05.2024 : 18.05.2024 : Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source/Location of Sample	: Near Opposite Force Barrick Kujam II- Bauxite Mines (157,38ha)	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 18.05.2024 to 28.05.2024	Sample Condition	: Sealed & Preserved	

Discipline: Chemical		Group:	Water		ory Limit 10500:2012
Parameter Unit		Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 25.6 °C)		APHA 24th Ed.2023, 4500-H	6.50	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.19	1.0	5.0
Taste	-	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	10	1S 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	62	500	2000
Chloride (as CI)	mg/L	APHA 24th Ed.2023, 4500 CI B	7.7	250	1000
Fluoride (as F)	mg/L	APHA 24th Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO ₁)	mg/L	APHA 24 th Ed 2023, 2320 B	20.6	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 24th Ed.2023, 2340 C	32.7	200	600
Sulphate (as SO ₄)	mg/L	APHA 24 th Ed.2023, 4500 SO ₄ ⁻² -E.	BDL, (DL: 1.0)	200	400

Page 1 of 4

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ENGINEERING SERVICES PVT. LTD.

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

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



10-12007

TEST REPORT

Test Report No. : ELES/RNC/2024/2897 Report Release Date : 28.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000857F

Discipline : Chemic	al	Gree	ip: Water		ory Limit
Parameter	Unit	Test Protocol	Result	Acceptable	Permissible Limit
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₅ -B	BDL (DL: 0,5)	45	No Relaxation
Phenolic Compound (as C _c H ₂ 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	8.7	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemie	cal	Gre	up : Residues i	in Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	1S 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	0.5	2,4
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0,003	No Relaxation
Total Chromium(as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24 th 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	0.079	1.0	1.0
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 ⁴ 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

Page 2 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA NATIA, RANCHI-834003 (JHARKHAND) GST NO:-20A4ECE5713D124

NGINEERING SERVICES PVT. LTD.

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

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



36-1386

TEST REPORT

Test Report No. : ELES/RNC/2024/2897 Report Release Date : 28.05.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400000857F

Discipline: Chemical		Group: Resid	ues in Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	5	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				L	imit
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	20	
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0	
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	25
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	30
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 4	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	8DL (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)	1	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

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ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/2897	Report Release Date	: 28.05.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

ULR No. : TC135872400000857F

Pesticides					
Parameter	Unit	Test Protocol	Result	Limit	
Alpha HCH	μg/l.	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0.01	
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		Grou	p: Water		
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected	
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected	

Remarks: 1, pH and RFC done at Lab.

Reviewed by

AKASH KUMAR

Quality Manager

ELES PVT LTD

****End of Report****

Authorised Signatory

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

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ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/2897	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. Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/DW/3071 : 14.05.2024 : 18.05.2024 : Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source/Location of Sample	: Near Opposite Force Barrick Kujam II- Bauxite Mines (157.38ha)	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES Pvt, Ltd.	
Period of Analysis	: 18.05.2024 to 28.05.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical Gr		Group : Wate	roup : Water		atory Limit 5 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 Lah.

AKASIAMOWIAR

Quality Managor FLES PVT, LTD. ****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Menon : r

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Kujam II Bauxite Mine-Environmental Monitoring Report

June 2024



CONTENT

Hi	ndalco Industries : Kujam-II Bauxite Mine Environmental Monitoring Report	Jun-2024
	Kujam-II Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Kujam-II Weigh Bridge	
2	Nawatoli Quarry	
3	Quarry 195	
4	Bhattiput	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near PakriGada Village	
2	Near Pol Pol Village	
3	Near Shakhuapani Village	
4	Near DipaKujam Village	







PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDAMA 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.elespf.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/3518	Report Release Date	: 29.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001469F		

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4026 : Kujam-II Weigh Bridge Kujam-II Bauxite Mine (157,38ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 20.06.2024 to 21.06.2024 : 24.06.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : 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: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	73	100 (24hra)		
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	47	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-II/Sec- 1): 2023	11.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	39.1	80 (24hrs)		
Ozone (O ₃)	µg/m [‡]	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	0.016	1 (24hrs)		
Nickel (Ni)	ng/m ⁵	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 HATTA, RANCHI-834003 (JHARKHAND) GST NO-20A4ECE9T130124

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No. : ELES/RNC/2024/3518 Report Release Date : 29.06.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001469F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)	μg/m²	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Manager FLES PVT, LTD

****End of Report****

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

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ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/3519	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001470F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4027 : Nawatoli Quarry	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Kujam-II Bauxite Mine (157.38ha : 20.06.2024 to 21.06.2024 : 24.06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

ME	TEOROLOGICAL 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	64	100 (24hrs)	
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	7,9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	27.4	80 (24hrs)	
Ozone (O ₁)	µg/m	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 ²	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/m1	IS 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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ENGINEERING SERVICES PVT. LTD.

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

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/3519	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001470F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)	pg/m²	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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ENGINEERING SERVICES PVT. LTD.

Email: info@elexpl.co.in , elex.ranchi@gmail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/3520	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400001471F

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4028 : Quarry- 195 Kujam-II Bauxite Mine (157.38ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 20.06.2024 to 21.06.2024 : 24.06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION	ON		
1	Average Temperature (°C) : 30	2	Barometric Pressure (mm	Hg) : 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	64	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-II/Sec-1): 2023	11.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	17.4	80 (24hrs)	
Ozone (O ₁)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m²	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	0.015	1 (24hrs)	
Nickel (Ni)	ng/m ²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m [†]	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATTA, RANCHI-834003 (HARKHAND) GST NO: 20A4CC97130324

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/2024/3520 Report Release Date : 29.06.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400001471F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₁ 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)

AKASH KUMAR Quality Managar

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 HATTA, RANCHI-834003 (PHARKHAND) GST NO: 20A4CEST13D124

ENGINEERING SERVICES PVT. LTD.

Emall: info@elespl.co.in , eles.ranchidigmail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/3521	Report Release Date	: 29.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400001472F

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4029 : Bhattipat Kujam-II Bauxite Mine (157,38ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 20.06.2024 to 21.06.2024 : 24.06.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.06.2024 to 29.06.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : 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: (Chemical	Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	64	100 (24brs)	
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	6.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	25.7	80 (24hrs)	
Ozone (O ₂)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	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	0.009	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)	

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD.

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

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



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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/3521
 Report Release Date
 : 29.06.2024

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC135872400001472F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)	pg/m ¹	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 KOMAR 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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Phone po.: 0651-2290109 Website: www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/3393	Report Release Date	: 24.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001344F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3844 : Neur Pakri Gada Village : 17.06.2024 to 18.06.2024
Address	: Lohardaga, Flurkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 20.06.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt, Ltd.
Period of Analysis	: 20.06,2024 to 24.06,2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 38	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	57	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m²	1S 5182 (Part-24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ³	15 5182 (Part- II/Sec- 1): 2023	7,9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	15 5182 (Part- 6): 2022	24.1	80 (24hrs)	
Ozone (O ₁)	µg/m³	3S 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 (8hm)	
Lead (Pb)	hB/m _g	IS 5182 (Part- 22): 2019	<0.002	1 (24bm)	
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 (Amual)	

Page 1 of 2

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PLOT NO-BS MANSAROVAE ENCLAVE, TUFUDANA HATIA, RANCHI-ESADIE (MARKHAND) BET NO-SDARCESTIKUSSI

MOINEERING SERVICES PVT. LTD.

Email: info@elegal.co.ie . eleg.rom/hilliamail.com Phane ris.: 0851-3290103 Website : www.elegal.co.ie



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TEST REPORT

Test Report No.	: ELES/RNC/2024/3393	Report Release Date	: 24.06,2624	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400001344F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H _s)	µg/m²	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 Managtr FLES PVT, LTD.

****End of Report****

Authorized Signatury
Dr. Deependre Kumar Sinha

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

Page 2 of 2

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NOINEERING SERVICES PVT. LTD

Empil: <u>info@elevil.or.in</u> . eles.comm@amail.com Phone no.: 0651-2290163 Website : www.elessi.co.in



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TEST REPORT

Test Report No.	: ELES/RNC/2024/3394	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28,03.2024
ULR No.	: TC135872400001345F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3845 : Near Pol Pol Village : 17.06.2024 to 18.06.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 20,06.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 20.06.2024 to 24.06.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (*C) : 38	2	Barometric Pressure (mmHg)	: 742
3 Relative Humidity (%) : 59	4	Weather Condition	: Clear

Unit	TERVIPOTE TOPOGET		Group: Atmospheric Pollution			
1 1 1 1 1	Test Protocol	Result	Regulatory Limit			
μg/m³	IS 5182 (Part- 23): 2022	57	100 (24hm)			
μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)			
μg/m³	IS 5182 (Part- H/Sec- 1): 2023	7.2	80 (24his)			
μg/m³	15 5182 (Part- 6): 2022	24.9	80 (24hrs)			
µg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
mg/m ¹	1S 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8brs)			
µg/m³	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)			
ng/m²	15:5182 (Part-26): 2020	<6.0	20 (Annual)			
ng/m²	ELES/AIR/SOP/01: 2021	<2.0	96 (Annual)			
	pg/m³ pg/m³ pg/m³ pg/m³ pg/m³ pg/m³ pg/m³ pg/m³	μg/m³ IS 5182 (Part- 23): 2022 μg/m³ IS 5182 (Part- 24): 2019 μg/m³ IS 5182 (Part- H/Sec- 1): 2023 μg/m³ IS 5182 (Part- 6): 2022 μg/m³ IS 5182 (Part- 9): 2019 μg/m³ IS 5182 (Part- 25): 2018 mg/m³ IS 5182 (Part- 10): 2019 (NDIR Method) μg/m³ IS 5182 (Part- 22): 2019 ng/m³ IS 5182 (Part- 22): 2019	μg/m³ IS 5182 (Part- 23): 2022 57 μg/m³ IS 5182 (Part- 24): 2019 30 μg/m³ IS 5182 (Part- II/Sec- 1): 2023 7.2 μg/m³ IS 5182 (Part- 6): 2022 24.9 μg/m³ IS 5182 (Part- 9): 2019 <20.0			

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3394	Report Release Date	: 24.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001345F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)	µg/m²	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	rig/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASAMAMAR Quality Manager FLES PVT LTD

****End of Report****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3395	Report Release Date	: 34.06.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400001346F	- 11	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3846 : Neur Shakhuapani Village : 17.06.2024 to 18.06.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	; 20.06,2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 20.06.2024 to 24.06.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORT	MATION			
1	Average Temperature (°C)	: 38	2	Barometric Pressure (mmlig)	: 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	JS 5182 (Part- 23): 2022	58	100 (24hs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-II/Sec- 1): 2023	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part- 6): 2022	24.2	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)	
Azumonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monardide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1,0	2 (8hm)	
Lood (Pb)	hê/m	IS 5182 (Part- 22); 2019	0.007	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6,0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<3.6	06 (Annual)	

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2024/3395 Report Release Date : 24.06.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2624

ULR No. : TC135872400001346F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)	ag/m ²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Ammaf)	

AKASH KUMAR

Quality Managur ELES PVT. LTD. ****Emd of Report****

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

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2024/3396	Report Release Date	: 24.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001347F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/3847 : Near Dipa Kujam Village : 17.06.2024 to 18.06.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 20.06.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pyt. Ltd.	
Period of Analysis	20.06.2024 to 24.06.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION	0. 11/2 a
1 Average Temperature (°C) : 38	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	57	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ²	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-11/Sex-1): 2023	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Pars- 6): 2022	23.8	80 (24hrs)
Ozone (O ₁)	µg/m²	IS 5182 (Part- 9): 2019	<29.0	100 (8hrs)
Ammonia (NH ₃)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Menoxide (CO)	mg/m²	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hn)
Lead (Pb)	µg/m³	IS 5182 (Pan-22): 2019	0.007	T (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Americ (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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Phone no.: 0651-3270109



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TEST REPORT

Test Report No.	: ELES/RNC/2024/3396	Report Release Date	: 24.06.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400001347F			

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _s H _s)	μg/m ²	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 Managor

ELES PVT. LTD.

****End of Report****

Authorised Signatory
Dr. Deependra Kurner Sinha
Ph. D Environmental Engage
ELES Pvt. Ltd. Technical Management

Page 2 of 2

The Description is the Text Report or Section and by the Laboratory under General Terms and Conditions, only to Company bette hand to pre-approved forms. The taxable above is the Text Report reflects the findings done to the Laboratory at the time of conditions and or the Text Report reflects the findings done to the Laboratory at the time of conditions and done to the laboratory at the time of conditions and of conditions of the laboratory at the time of conditions are of the Laboratory. The Report of the report of the Laboratory at the Laboratory. The Report of the report of the Laboratory at the Laboratory and attendition and the Laboratory at the Laboratory at the Laboratory and the Laboratory and the Laboratory at the Laboratory and the Laborator

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Kujam II Bauxite Mine-Environmental Monitoring Report

July 2024



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2	Nawatoli Quarry	
3	Quarry 195	
4	Bhattipat	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near PakriGada Village	
2 1	Near Pol Pol Village	
3	Neur Stukhuapani Village	
4	Near DipaKujam Village	



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ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4196	Report Release Date	: 29.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002131F	NI ARRAMANI III AND	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4859 : Kujam-II Weigh Bridge : Kujam-II Bauxite Mine (157,38ha)
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date	± 18.07.2024 to 19.07.2024 ± 23.07.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 23.07.2024 to 29.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	:741
3	Relative Humidity (%) : 64	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	70	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	39	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part-11/Sec-1): 2023	11.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	27.8	80 (24hrs)	
Ozone (O ₃)	μg/m²	IS 5182 (Purt- 9); 2019	<20.0	100 (Shrs)	
Ammonia (NH ₃)	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 ¹	IS 5182 (Part- 22): 2019	0.012	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m [†]	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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ENGINEERING SERVICES PVY. LTD.

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

Website: www.eiespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4196	Report Release Date	: 29.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002131F	1	

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

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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ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4197	Report Release Date	: 29.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002132F	***************************************		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4860 : Nawatoli Quarry Kujam-II Bauxite Mine (157,38ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18.07.2024 to 19.07.2024 : 23.07.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 23.07.2024 to 29.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION		
I Average Temperature (*C) : 30	2 Barometric Pressure (mmHg) : 741	
3 Relative Humidity (%) : 64	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	63	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	7.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	20.5	80 (24hrs)	
Ozone (O ₁)	µg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)	
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lend (Pb)	m8/m3	IS 5182 (Part- 22): 2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD.

Email: InfolDelespl.ca.in , eles ranch/(Ogmail.com Phono no.: 0651-2290103

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4197	Report Release Date	: 29.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002132F			

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*	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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ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4198	Report Release Date	: 29.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002133F	1111-24-111-111-111-111-111-111-111-111-		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4861 : Quarry- 195 Kujam-II Bauxite Mine (157,38ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 18.07.2024 to 19.07.2024 : 23.07.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	; 23.07,2024 to 29.07,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION		The same of the same	-70
1	Average Temperature (°C) : 30	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%) : 64	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	63	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	18 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part- II/Sec- 1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	19.1	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 (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAMD) GST NO:- 20AAFCE97130124

ENGINEERING SERVICES PVT. LTD.

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

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



10-0366

TEST REPORT

Test Report No.	: ELES/RNC/2024/4198	Report Release Date	: 29.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002133F	***************************************	

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ 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)

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 PVT. LTD.

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

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



10-116

TEST REPORT

Test Report No.	: ELES/RNC/2024/4199	Report Release Date	: 29.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002134F	111111111111111111111111111111111111111		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/4862 : Bhattipat Kujam-II Bauxite Mine (157,38ha)	
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date	: 18.07.2024 to 19.07.2024 : 23.07.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 23.07.2024 to 29.07.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

METEOROLOGICAL INFORMATION	UA-S
1 Average Temperature (°C) : 30	2 Barometric Pressure (mmHg) : 741
3 Relative Humidity (%) : 64	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	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- II/Sec- 1): 2023	6.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m²	IS 5182 (Part-6): 2022	18.4	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hm)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD.

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

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4199	Report Release Date	: 29,07,2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002134F	***************************************	

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 ⁸	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 PVT. LTD.

Email: info@eleial.co.in . eles ranchi@amail.com Phone no.: DES1-2290103

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4097	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002032F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4692 : Near Pakri Gada Village : 15:07-2024 to 16:07-2024	
Address	: Lohardagu, Jharkhand-835302	Sample Received Date Type of Sample	: 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	Smiled & Preserved	

M	ETEOROLOGICAL INFOR	MATION		S	
1	Average Temperature (°C)	128	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline: 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 (24hm)		
Particulate Matter (PM2.5)	µg/m³	18 5182 (Part- 24): 2019	28	60 (24hn)		
Sulphur Di-Oxide (SO ₂)	μμ/m ¹	IS 5182 (Part-II/Sec-1): 2023	6.7	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	22.2	80 (24hrs)		
Ozone (O _i)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrsú		
Ammonia (NH ₄)	jug/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monohide (CO)	mg/m²	(S 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	15 5182 (Part- 22): 2019	< 0.002	1 (24brs)		
Nickel (Ni)	ng/m³	IS 51#2 (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-SO, MANSARDVAR ENCLAVE, TURUDANA HATTA, RANCHI-634003 (JHARKHAND) GIT NO-30AACCEPTIBO124

ENGINEERING SERVICES PVT. LTD.

Email: Info@elesal.co.in . eles.ronchi@gmail.com

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



TEST REPORT

Test Report No. : ELES/RNC/2024/4097 Report Release Date : 22.07,2024

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

ULR No. : TC135872400002032F

Discipline: Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₄ H ₄)	yg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Вепло-(а)-Рутеле	ng/m ^h	ELES/GC/SOP/05; 2023	<0.5	01(Annual)

Reviewed by AKASH KUMAR

Quality Managur ELES PVT_LTD ****End of Report****

Dr. Deependra Kumar Sinha Ph. D Environmental Engo.

ELES Pvl. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANIAROVAR ENCLAVE, TUPUDANA HATTA, RANCHI-ESASSI (HARRINANO) SIT NO-30ASCESTIBLES

ENGINEERING SERVICES PVT. LTD.

Email: infralleisari.co.in . elektronchi@amail.com

Phone no.: 0681-3290103 Website: www.elespi.co.in



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4098	Report Release Date	: 22.67.2624
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002033F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4693 : Near Pol Pol Village : 15.07.2024 to 16.07.2024
Address	: Lohardaga, Thurkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 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	: Scaled & Preserved

METEOROLOGICAL INFORMATION	
1 Average Temperature (°C) :28	2 Bacometric Pressure (mmHg) : 741
3 Relative Hamidity (%) : 67	4 Weather Condition : Cloudy

Discipline: Chemical		Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (FM10)	µg/m ¹	IS 5182 (Part- 23): 2022	52	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	ug/m)	1S 5182 (Part-11/Sec-1): 2023	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₁)	µg/m³	1\$ 5182 (Pun-6); 2022	16.1	80 (24hrs)	
Ozone (O ₃)	μμ/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	pig/m ³	IS 5182 (Pari- 25): 2018	<10.0	400 (24hrs)	
Carbon Moneraide (CO)	mg/m ¹	ES 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	15 5182 (Pan-26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	05 (Annual)	

Page 1 of 2

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PLDT NO-30, MANSARDVAR ENCLAVE, TUPUDANA MATIA, RANCHI-EXADEX (IMARKHAND) EST NO- 20AAFCERTIZOLIX

ENGINEERING SERVICES PUT. LTD.

Email: info@elessi.co.in . eles ranchi@email.com Phone ro.: 0653-2290103 Website : www.elessi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4098	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	28.03.2024
ULR No.	: TC135872400002033F		

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	og/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR Quality Manager ELES PVT, LTD

****End of Report***

Dr. Deependra Kulffer Sinhu.
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manage

Page 2 of 2

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PLOT NO-50, MANSAROVAR ÉNCLAVE, TUPUDANA HATIA, RANCHI-ES4003 (JHARKHAND) 557 NO - 30445777130124

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4099	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.63.2024
ULR No.	: TC135872400002034F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4694 : Near Shakhuapuni Village : 15.07.2024 to 16.07.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 17.07.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Done By	: ELES Pvi. Ltd.	
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Senied & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part-23): 2022	58	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	29	60 (24hrs)		
Sulphur Di-Oxide (SO ₁)	µg/m³	IS 5182 (Part- II/Sec- 1); 2023	6.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	18.5	.80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Anumonia (NH ₃)	pg/m*	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	ing/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Shrs)		
Lend (Ph)	µg/m'	IS 5182 (Part- 22): 2019	< 0.002	1 (24hn)		
Nickel (Ni)	'ng/m'	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Ainenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	96 (Annual)		

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ENGINEERING SERVICES PVT. LTD.

Errori: info@elesal.co.in eles.ranchi@gmail.com Phone no.: 0651-2250103

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4099	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	1 28.03.2024
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ULR No. : TC135872400062834F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₄)	μg/m²	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***

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

Page 2 of 2

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ENGINEERING SERVICES FUT. LTD.

Emall: Infaffieless), co.ir., eles reochidiamail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4100	Report Release Date	: 22.07.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002035F			

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/4695 : Near Dipu Kujum Village : 15.07.2024 to 16.07.2024		
Address	: Lohardaga, Jharkhund-835302	Sample Received Date Type of Sample	: 17.07.2024 : Ambient Air		
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pv. Lul.		
Period of Analysis	: 17.07.2024 to 22.07.2024	Sample Condition	: Scaled & Preserved		

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (minHg)	: 741
3	Relative Humidity (%)	:67	4	Weather Condition	; Cloudy

Discipline:	Chemical	Group: Atm	Group: Atmospheric Pullution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	51	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part-11/Sec-1): 2023	6.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	20.5	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Shrs)	
Lond (Ph)	patin,	TS 5182 (Part- 22): 2019	0.084	1 (24hn)	
Nickel (Ni)	ing/m ⁵	IS 5182 (Pari- 26): 2020	< 6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	(Januari) 60	

Page 1 of 2

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PLOT NO-90, MANSAROVAR ENCLAVE, TUPLIDANA MATIA, RANCHI-884005 (MARKHAND) SIT NO-20ARCEPTISUIN

ENGINEERING SERVICES PVY, LTD.

Email: info@elessi.co.in - eles.ranchi@amail.com

Phone no.: 0631-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4100	Report Release Date	: 22.07.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002035F		_

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Bettzene (C ₄ H ₄)	µg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<8.5	OI(Annual)	

AKASH KUMAR Quality Managor ELES PVT, LTD

****End of Report****

Dr. Deependra Kumar Sinha Pr. D Environmental Engg. ELES Pvt. Ltd. Technical Manan

Page 2 of 2

The December stand or Ten Report, is maded to the Laboratory under General Terms and Combiners, only on Company letter hand at pre-approved forms. The combiners on the Ten Report reflects only and deep photosophic dates by the Laboratory only. The reflectment mand on the Ten Report reflects the findings dates by the Laboratory of the rest of involventions only and within the listin of claims a institution. The Laboratory is responsible for all the administration or data provided by the claim. The Report attention except to full and any part of the import, or not taken on our of context, without price we then appeared in the Laboratory. The Report is full and set by path of the appearance of the Laboratory. The Report is full of the type of the rest legal actions extra price we then appeared in the Laboratory. Attention is discuss in the limitation of lability, compensation and priorities of the Laboratory. Attention is discuss in the limitation of lability, compensation and priorities of the laboratory and the discussions of the Ten Report is allowed and officially before the find that are required for the find that will be appeared to the find the standard of the laboratory. The simplest four Reputs that is allowed the priorities and the find the standard of the laboratory and the standard of the laboratory and the laboratory and the standard of the laboratory and the laborato

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Kujam II Bauxite Mine-Environmental Monitoring Report

August 2024



CONTENT

Hind	alco Industries : Kujam-II Hauxite Mine Environmental Monitoring Report	August 2024
	Kujam-II Bauxite Mine	The state of the s
	AMBIENT AIR QUALITY- CORE ZONE	
1	Kujam-II Weigh Bridge	
2	Nawatoli Quarry	
3	Quarry 195	
4	Bhattiput	
	AMBIENT AIR QUALITY-BUFFER ZONE	
Ĭ.	Near Pakri Gada Village	
2	Near Pol Pol Village	
3	Near Shakhuapani Village	
4	Near Dipa Kojam Village	
	Drinking Water	





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ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4847	Report Release Date	: 27,08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002766F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5542 : Kujam-II Weigh Bridge Kujam-II Bauxite Mine (157,38ha)
Address	: Lobardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15.08.2024 to 16.08.2024 : 20.08.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 20.08.2024 to 27,08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 27	2:	Barometric Pressure (mmHg)	: 741
3 Relative Humidity (%) : 65	4	Weather Condition	Cloudy

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	μ <u>ω</u> /m ¹	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	9.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	23.2	80 (24hrs)	
Ozone (O ₃)	µg/m³	1S 5182 (Pari- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	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	0.007	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 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/2024/4847	Report Release Date	: 27.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002766F			_

Discipline: Chemical		Group: Atmospheric Pollution			
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/m³	ELES/GC/SOP/05; 2023	<0.5	01(Annual)	

Reviewed by AKASH KUMAR

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

Dr. Deependra Kumar Sinha Ph. D Enwormental Engg.

ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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ENGINEERING SERVICES PVT. LTD.

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

Phone no.: 0651-3290103 Website: www.elespl.co.in



TC-1388T

TEST REPORT

Test Report No.	: ELES/RNC/2024/4848	Report Release Date	: 27.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002767F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5543 : Nawatoli Quarry Kujam-II Bauxite Mine (157.38ha)
Address	: Lohardaga, Jhorkhand-835302	Sampling Date Sample Received Date	: 15.08.2024 to 16.08.2024 : 20.08.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION	N .		
1	Average Temperature (*C) : 27	2	Barometric Pressure (mml-	łg) : 741
3	Relative Humidity (%) : 65	4:	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ¹	IS 5182 (Part- 23): 2022	56	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	28	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part-II/Sec- 1): 2023	6.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6); 2022	17.2	80 (24hrs)	
Ozone (O ₁)	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 ¹	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.005	I (24hrs)	
Nickel (Ni)	ng/m ¹	IS 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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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/2024/4848 Report Release Date : 27.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002767F

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _a H _b)	ug/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/cu³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by 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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ENGINEERING SERVICES PVT. LTD.

Email: info@elespi.co.in . eles.ronchi@amail.com

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



10-138

TEST REPORT

Test Report No.	: ELES/RNC/2024/4849	Report Release Date	: 27.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002768F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5544 : Quarry- 195 Kujam-II Bauxite Mine (157.38ha)
Address	: Lohardaga, Jhurkhand-835302	Sampling Date Sample Received Date	: 15.08.2024 to 16.08.2024 : 20.08.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. I.td. : Scaled & Preserved

M	ETEOROLOGICAL INFOR	RMATION	72		
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%)	: 65	4	Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atm	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Paniculate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	57	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	15 5182 (Part- 24): 2019	29	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- II/Sec- 1): 2023	6.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	16.3	80 (24hrs)	
Ozone (O ₃)	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 ¹	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	

Page 1 of 2

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ENGINEERING SERVICES PVT. LTD

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

: 28.03.2024

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



TEST REPORT

Work Order Date

Test Report No. : ELES/RNC/2024/4849 Report Release Date : 27.08.2024 Work Order No.

ULR No. : TC135872400002768F

: 13612312113

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 Manager ELES PVT LTD

****End of Report****

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

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ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in . eles.ranchi@omail.com

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4850	Report Release Date	: 27.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002769F	10.	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/5545 : Bhattipat Kujam-II Bauxite Mine (157,38ha)
Address	: Lobardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.08.2024 to 16.08.2024 : 20.08.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION	7/0		
1 Average Temperature (*C) : 27	2	Barometric Pressure (mmHg)	: 741
3 Relative Humidity (%) : 65	4	Weather Condition	: Cloudy

Discipline: 0	Chemical	Group: Atm	ospheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m²	IS 5182 (Part- 23); 2022	46	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (\$O ₂)	µg/m³	IS:5182 (Part- II/Sec- 1): 2023	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Purt- 6): 2022	15.1	80 (24hrs)
Ozone (O ₅)	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m²	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)

Page 1 of 2



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ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No. : ELES/RNC/2024/4850 Report Release Date : 27.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002769F

Discipline	e: Chemical	Group: Att	mospheric Pollu	rtion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₉ H ₆)	µg/m ¹	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

AKASH KUMAR Quality Manager ELES PVT. LTD.

****End of Report****

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

Page 2 of 2

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ENGINEERING SERVICES PYT. LYD.

Enroll: info@ylessl.co.lg., eles.ranchi@amail.com

Phone no.: 0651-2290103 Website: seww.elespf.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4757	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2034
ULR No.	: TC135872400002676F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/5440 : Near Pakrl Gada Villuge : 12.08.2024 to 13.08.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION			
Average Temperature (*C) : 27	2	Barometric Pressure (mmHg)	:74
3 Relative Humidity (%) ; 68	-4.	Weather Condition	: Cloudy

Discipline:	Chemical	Group: Atm	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	1S 5182 (Part- 23): 3022	43	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ⁴	IS 5182 (Part- 24); 2019	24	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	15:5182 (Part-11/Sec-1): 2023	5.6	80 (34hrs)		
Nitrogen Di-Oxide (NO ₁)	pig/m [‡]	15 5182 (Part- 6): 2022	18.1	80 (24hrs)		
Oxone (O ₁)	µg/m²	IS 5182 (Part- 9): 3019	<20.0	100 (Shry)		
Ammonia (NH ₂)	pig/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part-10): 2019 (NDIR Method)	<7.0	I (firs)		
Leud (Pb)	ug/m*	IS 5182 (Part- 27): 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ru/m"	15 5182 (Puri- 26): 2020	<6.0	20 (Annual)		
Arsenie (As)	ng/m1	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page I of 2

The Discount should be found by the Laboratory scale Grown Terror and Continues, with an Commany later hand as pro-approved license. The results shown in our Terr Superior and an interference of the state of the physical date by the Laboratory scale. The information stated as the first Report suffects the friends at the superior of the laboratory of the superior of the information or date provided at the appear the information of scale and the information of the provided at the appear the information of the superior of the report is not alone and of purpose, which provided at the appear of the laboratory. The Expect is full or to part title out by purposes and to provide a superior of the laboratory. Superior is the first territory of the Laboratory function of families, properties and provided at the appear of the Laboratory function in the superior of the Laboratory. Superior is the first territory of the Laboratory function of families, properties and provided the superior of the Laboratory function of the superior of the families of the first territory of the families of the families of the first territory of the families of the fam



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ENGINEERING SERVICES PVT, LYD.

Enoli intoGelesplassin , elescapstil Epopolicon Phone no.: 0681-2290103

Welterla : www.alespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4757	Report Release Date	: 22.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28,03,2024	
TT R No.	TCT35877400002676F			

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₆)	pag/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Amust)	

AKASH KUMAR

Quality Managur

ELES PVT. LTD.

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engs.
BLES Put Ltd. Technical Managers

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ENGINEERING SERVICES PVT. LTD.

Email: Infe@elesal.co.in., efes conthi Bymail.com Phone no. - 0651-2250283 Website: www.elesal.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4758	Report Release Date	: 22.68.2024
Work Order No.	: 13612312113	Work Order Date	: 28.63.2024
ULR No.	: TC135872400002677F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/544) : Near Pol Pol Village : 12,08.2024 to 13.08.2024
Address	: Lohardags, //hurkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	ELES Pvt. Ltd.
Period of Analysis	: 14.08.2024 to 22.08.2024	Sample Condition	: Sealed & Preserved

ME	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:27	2	Barometric Pressure (mmHg)	1741
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

Discipline: 0	Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2022	41	100 (24hrs)		
Paniculate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	.19	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m ²	15 5182 (Part- II/Sec- 1): 2023	5.2	80 (24hri)		
Nitrogen Di-Oxide (NO ₇)	µg/m³	IS 5182 (Part- 6): 2022	14.8	80 (24hrs)		
Ozone (O ₃)	pg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hra)		
Ammonia (NH _b)	aup/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)		
Carbon Monoside (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1,0	2 (801)		
Lead (Pb)	1/g/m	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)		
Nicial (Ni)	±2/m²	15 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Ammic (As)	ng/m1	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

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PLOT NO-20, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-ES4003 (JHARIOHANO) GTT NO-20AATCHTERLES

ENGINEERING SERVICES PVT. LTD.

Einal : <u>Info®elesal co In , eles ranchi@email.com</u> Phona no.n : 0653-229010X

Minhalta - www.elazaf.co.in



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4758	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002677F		

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Bersrene (C ₀ H ₀)	ug/m³	ELES/GC/SOP/06: 2023	<2.5	05(Anoual)	
Benzo-(a)-Pyrene	mg/m²	ELES/GC/SOP/05: 2023	<0.5	91(Anoual)	

Reviewed by AKASH KUMAR Quality Manager ELES PVT LTD.

****End of Report****

Authorized Signatury
Dr. Deependra Komar Sinho
Ph. D Emironmental Enga
ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-SE, MERSAROVER ENCLAVE, TUPUDANA HATTA, RANCHI-834003 (HARRIHAND) (ST NO. 30A4FEFT1812)

ENGINEERING SERVICES PVT. LTD.

Ernel Info@elesples in , elespench @arnel cum Phone en , 0651-1280102

Phone no.: 0651-1790103 Blabsite: www.eferpt.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4759	Report Release Date	: 22.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002678F			

AILS	SAMPLE DETAILS	
: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/5442 : Near Shakhuupuni Village : 12.08.2024 to 13.08.2024
: Lohandagu, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02
: Operational	Sampling Done By	: ELES Pvt. Ltd.
: 14.08.2024 to 22.08.2024	Sample Condition	: Seuled & Preserved
	: Hindatco Industries Limited : Lohandagu, Jharkhand-835302 : Operational	: Hindalco Industries Limited Sample Ref. No. Location Sampling Date : Lohandaga, Thankhand-835302 Sample Received Date Type of Sample Sampling Procedure Sampling Done By

Mi	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	127	2	Barometric Pressure (mmHg)	: 741
1	Relative Humidity (%)	: 68	4	Weather Condition	Cloudy

Discipline:	Themical	Group: Atm	ospheric Polls	dion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	(5 5182 (Part-23): 2022	44	100 (24hm)
Particulate Motter (PM2.5)	jug/m	IS 5182 (Part-24): 2019	.24	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m²	1S 5182 (Part-1l/Sec-1): 2023	5.3	80 (24brs)
Nitrogen Di-Oxide (NO ₃)	jig/m³	15 5182 (Part- 6): 2022	15.1	80 (24hrs)
Ovone (O ₃)	pup/m2	IS 5182 (Part- 9): 2019	<20.0	100 (8hra)
Ammonia (NH ₃)	jug/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24brs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (Wars)
Lend (Pb)	hight)	(S 5182 (Part- 22): 2019	<0.002	1 (24hn)
Nickel (Ni)	ng/m³	15 5182 (Part-26): 2020	<6.0	20 (Anminl)
Arsenic (An)	rg/m²	ELES/AIR/SOP/01: 2021	<1.0	06 (Armad)

Page 1 of 2

The Sentement stated as Tern Report, is record by the Laboratory moder General Terms and Conditions, solly an Company locar band in pre-amproved forms. The minds above to the Tape Report rate or returns sold on the Tape Report rate or returns sold or the transport of the Tape Report rate or returns sold or the transport of the transport of the report of the following of the following or the report of the following or the provided on the report of the following or the report of the report of the report of the following or the report of the report of the following or the report of the following the following of the following the follow



PLOT NO-30, MANSAROVAP ENCLAVE, TUPUDANA HATTA, RANCH-634003 (HARKHANO) 657 NO-204401757185824

ENGINEERING SERVICES PUT, LTD.

Errol: erfo@elesol.co.in . eles.rmchi@umail.com

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



TEST REPORT

Test Report No. : ELES/RNC/2024/4759 Report Release Date : 22.08.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400002678F

Disciplina	rt Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₄ H ₄)	µg/m ¹	ELES/GC/SQP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ⁸	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

AKASH KUMAR Quality Manager ELES PVT LTD

****End of Report****

Or. Deependra Kumar Sinho
Ph. D Enviormental Engl
BLES Pvt. Ltd. Technical Manager

Page 2 of 2

The Discusses stand at East Report, is issued by the Laboratory while Dearest Toron and Complete, and, or Company have Lamb and a processing from the Data processing three lambs of the Tard Report refer or retains and you the Laboratory stay. The enformation states on the Tard Report refers the provided for the formation of the provided by the claims. The Report community and the company is responsible for all the information is that provided by the claims. The Report community and every is responsible for all the information is that provided by the claims. The Report communities along a report and stay part of the report is not of committee approached by the claims. The Report committee approached by the claims are part of the report and the state and the report and the state and the report and the state and the report and the Standard price permission has been record from the Standard and all the Standard and all the states of the report of the Laboratory. Amenican a dispose to the Standard and all the laborators and a standard and all the fluctuars of the record of the Laboratory and the Report is standard and all the laborators and a populated Any ages of December 1 and the Anthropout and the standard and all the standards a



PLOT NO 30, MANSAROVAR ENCLAVE TUPUDANA HATIA, BANCHI-EBADER CHARISTANDI GST NO-2014 SCHOOLS

Website : www.elezaf.co.in

Email: Imballelespl.co.in., eles.runchi@pmall.com Phone so - DEST-2290103



TEST REPORT

Test Report No.	: ELES/RNC/2024/4760	Report Release Date	: 22.08.2024
Work Order No.	: 13612312113	Work Order Date	; 28,03,2024
ULR No.	: TC135872400002679F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	ELES/RNC/2024/AA/5443 Near Dipa Kujam Village 12.08.2024 to 13.08.2024
Address	: Lohardaga, Therkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 14.08.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 14.08.2024 to 32.08.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION				
1	Average Temperature (°C)	:27	2	Barometric Pressure (mmHg)	: 741	
3.	Relative Humidity (%)	: 68	4	Weather Condition	Cloudy	

Discipline:	Chemical	Group: Atm	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/m ¹	IS 5182 (Part- 24): 2019	21	60 (24hrs)		
Sciphur Di-Oxide (SO ₂)	pg/m ¹	IS 5182 (Part-II/Sec-1): 2023	5.4	80 (24his)		
Nitrogen Di-Oxide (NO ₃)	μg/m ¹	IS 5182 (Part- 6): 2022	17.1	80 (24hrs)		
Ozone (O _i)	µg/m ¹	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	pg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hm)		
Carbon Monocide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1,0	2 (8hrs)		
Lend (Pb)	Jig/m²	IS-5182 (Part- 22): 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m²	IS 5182 (Part-26): 2020	<6.0	26 (Annual)		
Americ (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		

Page 1 of 2

The Discusses stated to Test Report, as short by the Laboratory under Domini Terms and Conditions, only on Company Seter head as pre-approved formal The results shown in the Ten Report refer or relates not to the parkeralyon does to the Laboratory only. The information sured on the Ten Report reflects the findings does by the Laboratory as the cross of accelerators cody and within the finite of allocal a contaction. The Laboratory is compactable for all the authorization or data provided on the organistorpt the information which is provided by the client. The Report current for suproduced except in full and any part of the support is not asked out of secures, noticed prior written approved of the Laboratory. The Region in Kill or in part shall not be published, adventue, used for one-logic actions serious prior personaum has been secured from the Navagament of the Calverson's Account in these to the licenses of inhilly, compensation and sometimes made an approximate discipline it. (See Supplement of the names or approximate of the Ton Report is extend to an additional and offered to the promoted or the Miles received from the AU the supplement common the Outer from the Daniel Control of the Control of aChilometissas of the Test Ropers. The samples given Rugalatory Sedies are to be resumed as specified, Any tipe of Observations or Complessor regarding this Reports shall he down within I Make from the Data of Tan Report referent bound. After the wave partial smooth beliefs, no complete will be admitted. The color Time actuable ment and by Tier, Report is to 20 hours from a Johnstine and 1900, (No. Application William) (Delta) (Delta) Demails Liveria COV. (Leave Commiss Liver)



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PLOT NO-30, MANSAROVAR ENCLÁVE, TURUDANA HATIA, BANCHHESIOOS (SHAREHAND) 657 NO-30ANCSYTISTES

ENGINEERING SERVICES PVT. LTD.

Email (afail niesolusia - electroschilliomalicae)

Phone no.: 0651-2290303 Website: www.slaspi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/4760	Report Release Date	: 22.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

Maria Maria

: TC135872400002679F

Disciplin	r: Chemical	Group: Atmospheric Pollution			
Parameter	Usit	Test Protocol	Result	Regulatory Limit	
Benzene (C_4H_6)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Amust)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	O1(Annual)	

AKASH KUMAR Quality Manags ELES PVT. LTO

****End of Report****

Dr. Deependra Kurnar Sinha Ph. D Environmental Enga ELES Pvt. Ltd. Technical Manner

Page 2 of 2

The December spend or Test Report to travel by the Laboratory settler Greated Tests and Completes, only no Compare letter hand to pre-approved forms. The conductions is the Test Report reflects the first settler by the Laboratory with the settler of the Test Report reflects the first settler by the Laboratory or despectation of the report of the additional settler settler or the settler settler or the report of the respectation of the report of the Laboratory the Report in the report of the report of the Laboratory the Report in the Repor



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ENGINEERING SERVICES PVT. LTD.

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4877	Report Release Date	: 29.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC135872400002794F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/DW/5555 : 16.08.2024 : 20.08.2024 : Drinking Water : Tap Water : Near Opposite Force Barrick (Kujam II- Bauxite Mines)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/61
Period of Analysis	: 20.08.2024 to 27.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Discipline: Chemical		Group:	Water	The second days of the second second	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.7°C)	8	APHA 24th Ed.2023, 4500-H	6.58	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.24	1.0	5.0
Taste	85	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	92	IS 3025 (Part-5) :2018	Agrecable	Agreeable	Agrecable
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	71	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 Cl B	8.4	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	22.2	200	600
Total Hardness (as CaCO ₁)	mg/L	APHA 24th Ed.2023, 2340 C	35.4	200	600
Sulphate (as SO ₄)	mg/L	APHA 24th Ed.2023, 4500 SO ₄ -2-E	2.68	200	400
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₅ -B	1.03	45	No Relaxation

Page 1 of 4

The Deciment stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company latter hand in pre-approved format. The results shown in the Test Report refer or relates only to the job analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of analysis, without prior written approved of the Laboratory. The Report is full or in part shall not be published, advertise, used for any legal actions orders prior permission has been secured from the bluringement of the Laboratory. Admitton is drawn to the limitation of hisblitts, compensation and jurisdiction issues. Any annutationed alteration is drawn to the finitiation of the content of the law. All the samples are retained for Jiddays from the Date of relocations or appearance of the Test Report is unlambful and offenders stary be protected to the fallow extent of the law. All the samples are retained for Jiddays from the Date of relocations from Regulatory bodies are to be retained as specified. Any type of Observations or Compliants regarding the Reports shall be done within 15days from the Date of Test Report released/board. After the time priori stated before, no compliants will be accepted. The entire of the start of the Laboratory is 15days from the Date of Test Report released/board. Not Applicable). Bibl. (Below Decemen Limit), LDL (Lower Detection Limit).



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

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4877	Report Release Date	: 29.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400002794F

Discipline : Chemic	al	Gree	ip: Water	The Control of the Co	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C _s H ₂ 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	0.20	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	10.2	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed 2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	al	Gro	oup: Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.03	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24th Ed. 2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.080	1.0	No Relaxation
Lend (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	10.0	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	1S 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:-20A8CE97130124

ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/4877	Report Release Date	: 29.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400002794F		

Discipline : Chemical		Group : Resid	ues in Water		ory Limit 19500:2012
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
Alachior	μg/t.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 1	20
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	1.0
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	25
Chlorpyriphos	μg/L.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	30
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	0.0
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	90
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0	30
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	.0
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	2.0
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	8	
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0	.03
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0	.01
Beta HCH	pg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0	.04

Page 3 of 4

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ENGINEERING SERVICES PVT. LTD.

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

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/4877	Report Release Date	: 29.08.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400002794F			

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) (o,p DDE and p,p DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1.0	
Discipline : Biological		Group	: Water		
Total Coliform (Qualitative)	Per 100 mL	15 15185; 2621	Not Detected	Shall and he determed	
Escherichia coli (Qualitative)	Per 100 mL	15 15185: 2021	Not Detected	Shall not be detected	

Remarks: L. pH and RFC done at Lab.

Reviewed by AKASH KUMAR Quality Managar ELES PVT. LTD.

****End of Report****

Ph. D Environmental Enga-ELES Pvt. Ltd. Technical Mension

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PLOT NG-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO-200A8CE9713DLM

ENGINEERING SERVICES PVT. LTD.

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

Phone no.: 0651-2290109 Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/4877	Report Release Date	: 29.08.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	ELES/RNC/2024/DW/5555 16.08.2024 20.08.2024 Drinking Water Tap Water Near Opposite Force Barrick	
Mines Status	: Operational	Sampling Procedure	(Kujam II- Bauxite Mines) : ELES/DOC/SMPL/01	
Period of Analysis	: 20.08.2024 to 29.08.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

Discipline: Chemical		Group: Wa	Group: Water		ory Limit 10500-2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	15 3025 (Part-39): 2021, Clause 6 Infrared Spectroscopic method.	BDL (DL: 0.01)	0.5	No Relaxation

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

AKASH KUMAR Quality Managar ELES PVT_LTD

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Dr. Deependra Kumar Sinho Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manuscri

Page 1 of 1

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ENVIRONMENTAL LABORATORÍES & ENGINEERING SERVICES PVT. LTD.

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

Kujam II Bauxite Mine-Environmental Monitoring Report

September 2024



CONTENT

Hind	alco Industries : Kujum-II Bauxile Mine Environmental Monitoring Report	September 2024
	Kujam-II Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
I.	Kujam-II Weigh Bridge	
2	Nawatoli Quarry	
3	Quarry 195	
4	Bhattipet	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Pakri Gada Village	
2	1/ear Pol Pol Village	
3	Near Shakhuapani Village	
4	Near Dipa Kajam Village	
	AMBIENT NOISE	
	WORKZONE NOISE	
	Stream Water	
î .	Up Stream (Dhardhari Nodi)	
2	Down Stream (Dhardhari Nadi)	





PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO-204AECES713D124

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/2024/5592	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003490F			

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/6488		
		Location	: Kujam-II Weigh Bridge		
			Kujam-II Bauxite Mine (157.38ha)		
Address	: Lohardaga, Jharkhund-835302	Sampling Date	: 20.09.2024 to 21.09.2024		
		Sample Received Date	: 23.09.2024		
		Type of Sample	: Ambient Air		
Mines Status	: Operational : 23.09.2024 to 30.09.2024	Sampling Procedure	: ELES/DOC/SMPL/02		
Period of Analysis		Sampling Done By	: ELES Pvt. Ltd.		
a section of telemonia.	1 60/07/60/64 10 20/07/40/44	Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	:741
3	Relative Humidity (%)	: 64	-4	Weather Condition	: Partly Cloudy

Discipline: Chemic	cal	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	1S 5182 (Part- 23): 2022	60	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	27	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	8.3	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	21.7	80 (24hrs)		
Ozone (O ₃)	µg/m³	15 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ¹	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)		
Benzene (C ₄ H ₄)	pg/m ³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Armual)		

Reviewed by Akash Kumar

****End of Report***

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Enga

Page 1 of 1

Technical Manager

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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/2024/5593	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003491F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6489 : Nawatoli Quarry Kujam-II Bauxite Mine (157.38ha)	
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date Type of Sample	: 20.09,2024 to 21,09,2024 : 23,09,2024	
Mines Status	nes Status ; Operational Samplin		: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	d of Analysis : 23.09.2024 to 30.09.2024 Sampling Done By	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
	Average Temperature (°C)	:28	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%)	: 64		Weather Condition	: Partly Cloudy

Discipline: Chemis	cal	Group:	Atmospherie	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	1S 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Purt- 6): 2022	15.8	80 (24hrs)
Ozone (O ₅)	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/m ¹	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lend (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₄)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D. Environmental E

Page 1 of 1

Technical Manager

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ENGINEERING SERVICES PVT. LTD.

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

Phone no.: 0651-3290103 Website: www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/5594	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003492F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6490 : Quarry- 195 Kujam-II Bauxite Mine (157.38ha)	
Address	: Lohardaga, Jharlchand-835302	Sampling Date Sample Received Date	: 20.09.2024 to 21.09.2024	
Mines Status	Type of Sample Operational Sampling Procedure		: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 23.09.2024 to 30.09.2024	to 30.09,2024 Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
_	Average Temperature (°C)	:28	2	Barometric Pressure (mmHg)	:741
3	Relative Humidity (%)	: 64		Weather Condition	: Partly Cloudy

Discipline: Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	55	100 (24hm)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	6.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ²	IS 5182 (Part- 6): 2022	18.8	80 (24hrs)
Ozone (O ₃)	μg/m³	IS-5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Load (Pb)	μg/m²	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ 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	01(Annual)

Reviewed by

****End of Report****

Dr. Delighening Kinner Shha Ph. D. Environmental Engg.

Page Lof L

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ENGINEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles_ranchi@gmail.com

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/5595	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003493F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/6491 : Bhattipat	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Kujam-II Bauxite Mine (157.38h : 20.09.2024 to 21.09.2024 : 23.09.2024	
Mines Status : Operational		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 28	2	Barometric Pressure (mml	lg) :741
3	Relative Humidity (%) : 64	4.	Weather Condition	; Partly Cloudy
				The state of the s

Discipline: Chemic	al	Group:	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/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ^k	IS 5182 (Part-2/Sec1): 2023	6.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	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 ₃)	µg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hm)	
Lend (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)	
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 Aksah Kumat

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

Page 1 of 1

Technical Manager

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TEST REPORT

Test Report No.	1 ELES/RNC/2014/5350	Report Release Date	: 13.09.1014	
Work Order No.	: 13512312113	Work Order Data	: 28.63.2634	
ULR No.	1.TC135872400003263F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited 1 Lohardaga, Thurkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/6164 : Near Pakei Goda Village : 14.09/2024 to 15.09/2024	
Mines Status	: Operational	Sample Received Date 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	Sealed & Preserved	

METEOROLOGICAL INFORMATION	
1 Average Temperature (°C) : 26	2 Barometric Pressure (nimHg) 1742
1 Relative Hamidity (%) : 72	→ Weather Condition : Rainy

Discipline : Chemi-	ral	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	1S 5182 (Part- 23) 2022	38	100 (24bn)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24); 2019	17	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	15 5182 (Part- 2/Sec1): 2023	<5.0	80 (24hn)	
Nitrogen Di-Oxide (NO ₅)	pg/m³	IS 5182 (Part- 6): 2022	13.8	80 (24hrs)	
Ozonz (O _t)	pig/im ⁹	1S 5182 (Part- 9): 2019	<20.0	100 (Sign)	
Ammonia (NH ₂)	µg/m²	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part-10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb):	µg/m	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<5.0	20 (Armuel)	
Arsenic (As)	ng/m	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₄ H ₄)	pg/m ³	ELES/GC/SOP/06: 2021	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ngini*	ELES/GC/SOP/05: 2023	< 0.5	OI(Anoual)	

Reviewed by Akash Komer Quality Manager

****End of Report****

Dr. Despendra Kumar Sinha Ph. D. Environmental Engg. Technical Managar

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TEST REPORT

Test Report No.	1 XLES/RNC/2024/5351	Report Rolesse Date	1 23.09,2024
Work Grden No.	: 12612312113	Work Order Date	: 28.03.2024
ULR No.	r TC135872400003264F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindules Industries Limited	Sample Ref. No. Location	: ELES/RINC/2024/A A/6185 : Near Pol Pol Village
Address Mines Status	: Loberdaga, Sharkhand-835302	Sampling Date Sample Received Date	: 14.09.2024 to 15.09.2024 : 16,09.2024
		Type of Sample Sampling Procedure Sampling Done By	ELSS/OOC/EMPL/02
Period of Analysis		Sampling Done By Sample Condition	Stated & Preserved

METEOROLOGICAL INFOR	MATION				
1 Average Temperature (*C)	:26	2	Barometric Pressure (inm)	Igh : 742	
3 Relative Hamidity (%)	:72	.4	Weather Condition	: Rainy	

Discipline: Chemi-	cal	Group:	Atmospherie	Pollution
Paramoter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part- 23): 2022	31	100 (24bn)
Particulate Matter (PM2.5)	pgim ³	IS 5182 (Part- 24): 2019	15	60 (24hrs)
Sulphur Di-Oxide (SO ₁)	pg/m ³	TS 5182 (Part- 2/Sect): 2023	<5.0	80 (24his)
Nitrogen Di-Oxide (NO ₃)	µg/m³	IS 5182 (Part- 6): 2022	15.5	80 (24hrs)
Ozone (O ₁)	jag/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Amusonia (NH ₃)	pg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ⁵	18 5182 (Part- 10): 2019 (NDB Method)	<1.0	2 (8hrs)
Lead (Pb)	ug/m²	1S 5182 (Part- 22): 2019	<0.002	1 (24frs)
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Amenic (Asi)	ng/m ⁴	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₄ H ₄)	pg/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 Axish Kumas Quality Managar

****End of Report****

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

Technical Manager

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TEST REPORT

Test Report No.	: ELES/MNC/2024/5351	Report Release Dute	13.09.3014
Work Order No.	13512312113	Work Order Date	128,03,202e
ULR No.	: TC135871400003265F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Mindaleo Industries Limited : Lohardega, Therkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2034/AA/6186 : Near Shahtumpani Village : 14.09.3034 to 15.09,2026 : 16.09.3034	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air ELES/DOC/SMPL/02 ELES PV. Ltd.	
Period of Analysis	: 16.09.2024 to 23.09.2024	Sampling Dane By Sample Condition	Socied & Preserved	

741	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (*C)	: 26	2	Barometric Pressure (mmHg)	- 742
J	Relative Humidity (%)	: 72	-4	Westher Condition	t Rainy

Discipline: Chemia	ni ia	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PMIO)	µg/m ³	18 5182 (Part- 23): 3022	51	100 (24hrs)
Particulate Maner (PM2.5)	µg/m²	IS 5182 (Part- 24): 2019	26	60 (24hm)
Sulphur Di-Oxide (SO ₂)	µg/m²	IS 5182 (Part-2/Sec1): 2023	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Pari- 6): 2022	16.3	80 (24)m)
Ozone (O ₃)	pg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (Rhrs)
Ammonia (NH _A)	ug/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDER Method)	<1.0	2 (8hrs)
Lead (Pb)	ag/m³	15 5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m	18 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)	ug/m ¹	ELES/GC/SOP/06: 2023	<2.5	(I5(Annual)
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	OT(Amount)

Reviewed by Akitch Kumst. Quality Meneger

****End of Report****

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

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/5553	Report Release Date	1.23,69,2024	
Wortt Order No.	1 13612312113	Work Order Data	128.03.2024	
ULR No.	: TC135872400003366F			

CUSTOMER DET	AILS	SAMPLE DETAILS	Alle - In the State of the Stat
Customer Name Address	: Hindalco Industries Limited : Loburdaga, Hurkhand-855302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2034/AA/6187 : Near Diga Kujam Village : 14.09.2024 to 15.09.2024 : 16.09.2024 : Ambient Air : ELES/DOC/SMPL/82
Mines Status : Operational		Sampling Procedure Sampling Done By	ELES Por Ltd.
Period of Analysis	: 16.09.2024 to 23.09.2024	Sample Condition	Sealed & Preserved

ME	CTEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26	2	Barametric Pressure (mmHg)	1742
3	Reintive Humidity (%)	172	- 4	Wember Condition	: Rainy

Discipline: Chemic	ral	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	nem	IS 5182 (Part- 23): 2022	48	100 (24hm)
Particulate Matter (PM2.5)	pg/m ³	15 5102 (Pan-24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m	IS \$182 (Part-2/Sec1): 2023	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5192 (Part- 6): 2022	19.4	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m²	1S 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (Øm)
Losd (Pb)	pag/m1	IS 5182 (Part- 22): 2019	0.007	1 (24hrs)
Nickel (Ni)	ing/m ³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenie (Ax)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C _a H _o)	hB,us,	ELES/GC/SOP/06; 2023	4.5	05(Annual)
Benzo-(a)-Pyreoe	ng/m³	ELES/GC/SOP/05; 2023	<0.5	01(Annual)

Reviewed by Axiah Kumir Quality Managar

****End of Report****

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

Tachuical Manager

Page Lof I

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ENGINEERING SERVICES PVT. LTD.

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

Phone no.: 0651-2290103
Website: www.elespf.co.in TEHM



TEST REPORT

Test Report No.	: ELES/RNC/2024/5600	Report Release Date	± 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003498F			

CUSTOMER DE	TAILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lobardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 20.09.2024 to 21.09.2024 : 23.09.2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 23.09.2024 to 30.09.2024	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 741
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

Discipline : Chemical			Group: Atn	ospheric l	Pollution
Location	Unit	Test Protocol	Resu	ilt	Regulatory Limit (Industrial Zone)
MATERIAL REPORT OF THE PROPERTY OF THE PROPERT			Time	Ling	- State Control - State Control
Near Mine Office Kujum-II Bauxite Mine (157.38ha)	dB(A)	IS 9989; 2020	Day Time	71	75 dB(A) Day Time
Sample ID: ELES/RNC/2024/AN/6496			Night Time	52	70 dB(A) Night Time



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Page 1 of 1

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5602	Report Release Date	: 30.09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003500F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhund-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 21.09.2024 : 23.09.2024 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 23.09.2024 to 30.09.2024	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (*C) : 29	2	Barometric Pressure (mmHg	: 741
3	Relative Humidity (%) : 63	4	Weather Condition	: Partly Cloudy

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)
Compressor at Quarry No.2 -			Time	Leq	
Kujum-II Bauxite Mine (157.38ha)	dB(A)	IS 4758: 2017	122797220612915		90 dB (A)
Sample ID: ELES/RNC/2024/WN/6498			Day Time	75	555550 Mak (1



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

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



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TEST REPORT

Test Report No.	: ELES/RNC/2024/5604	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC135872400003502F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/6500 : 21.09,2024 : 23.09,2024 : Surface Water : Up Stream : Dhardhari Nadi, Kujam-II	
Mines Status	: Operational	Sampling Procedure	Bauxite Mine (157.38ha) : ELES/DOC/SMPL/01	
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved	

Discipline : Chemical		G	Group: Water		
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water	
pH (at 24,8 °C)	100	IS 3025 (Part-11): 2022	6.75	6.5-8.5	
Colour	Hazen	IS 3025 (Part -4): 2021	14.0	300	
Odour		IS 3025 (Part-5): 2018	Unobjectionable		
Turbidity	NTU	IS 3025 (Part-10): 2023	7.8	-	
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	163	1500	
Total Alkalinity (as CaCO ₃)	mg/L	IS 3025 (Part-23): 2023	65.1	1	
Total Hardness (as CaCO ₃)	mg/L	IS 3025 (Part-21): 2019	71.9	(44)	
Sulphate (as SO ₄)	mg/L	IS 3025 (Part-24/Sec1): 2022	4.82	400	
Chloride (as CI)	mg/L	1S 3025 (Part-32): 2019	15.5	600	
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	0.156	1.5	
Nitrate (as NO ₁)	mg/L	APHA 24th Ed.2023, 4500 NO ₄ -B	2.16	50	

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ENGINEERING SERVICES PVT. LTD.

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

: 28.03.2024

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



TEST REPORT

Test Report No. : ELES/RNC/2024/5604 Report Release Date : 30.09.2024 Work Order No. : 13612312113 Work Order Date

ULR No. : TC135872400003502F

Discipline : Chemica	1	Group: Wa	iter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	+
Phenols Compounds (as C ₆ H ₂ OH)	mg/L	1S 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0,005
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	19.4	**
Discipline : Cher	mical	Gr	oup : Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	H
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	V.#
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed. 2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	APHA 24th Ed. 2023; 3111B	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.170	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 ⁶ Ed.2023; 3111B	BDL (DL: 0.05)	1941
Mercury (as Hg)	mg/L	15 3025(Part-48): 1994; RA2019	BDL (DL: 0.001)	199
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15

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ENGINEERING SERVICES PVT. LTD.

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

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



10 (3667

TEST REPORT

ULR No. : TC135872400003502F

Discipline: Che	mical	Group: Res	sidues in Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL; 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	+
Pesticides			- Action Control Control	
Alachior	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	i e
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-
Ethion	pg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	See:
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Phorate Sulphone	μg/I_	ELES/GC/SOP/01: 2023	BD1, (DL: 0.5)	
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	(40)

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PLOT NO-30, MANSAROVAR ENCLAYE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 28AA6CE97130124

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

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



TEST REPORT

Test Report No. : ELES/RNC/2024/5604 Report Release Date : 30,09,2024 Work Order No. : 13612312113 Work Order Date : 28.03.2024 ULR No. : TC135872400003502F

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	72
Beta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	-
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	H-
Endosulfan (alpha, beta and sulphate)	Pg4.	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	H
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	
Discipline: Biole	gical	Gre	oup: Water	
Total Coliform	CFU/100 mL	IS 15185: 2021	9.90×10 ¹	
Escherichia coli	CFU/100 mL	IS 15185: 2021	87.0	

Remarks: pH & RFC done at Lab.

Reviewed

****End of Report***

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

Page 4 of 4

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NGINEERING SERVICES PVT. LTD.

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

Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/5604	Report Release Date	: 30.09,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	TAILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/6500 : 21.09.2024 : 23.09.2024 : Surface Water ; Up Stream : Dhardhari Nadi, Kujam-II	
Mines Status	: Operational	Sampling Procedure	Bauxite Mine (157,38ha) : ELES/DOC/SMPL/01	
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

Discipline : Chemic	al	Gro	oup: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	us per IS 2296-1992 Class C (Inland Surface Water
Taste		APHA 24th Ed.2023, 2160C	N/A	
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Influent Spectroscopic Method)	BDL (DL: 0.01)	+

arumeters are outsourced to other Lab.

Reviewed by

****End of Report****

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

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ENGINEERING SERVICES PVT. LTD.

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

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



TC-13887

TEST REPORT

Test Report No.	: ELES/RNC/2024/5605	Report Release Date	: 30,09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400003503F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/650 : 21,09,2024 : 23,09,2024 : Surface Water : Down Stream : Dhardhari Nadi, Kujam-II	
Mines Status	: Operational	Sampling Procedure	Bauxite Mine (157.38ha) : ELES/DOC/SMPL/01	
Period of Analysis	: 23.09.2024 to 30.09.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sexled & Preserved	

Discipline : Chemical		G	roup: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water
pH (at 24.8 °C)	7	IS 3025 (Part-11): 2022	6.84	6.5-8.5
Colour	Hazen	IS 3025 (Part -4): 2021	11.0	300
Odour		IS 3025 (Part-5): 2018	Unobjectionable	-
Turbidity	NTU	1S 3025 (Part-10): 2023	5.75	4
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16); 2023	156	1500
Total Alkalinity (as CaCO ₁)	mg/L	IS 3025 (Part-23): 2023	39.0	-
Total Hardness (as CaCO ₂)	mg/L	15 3025 (Part-21): 2019	66.1	
Sulphute (as SO ₀)	mg/L	1S 3025 (Part-24/Sec1): 2022	18.5	400
Chloride (as CI)	mg/L	1S 3025 (Part-32): 2019	28.1	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	0.138	1.5
Nitrate (as NO ₁)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	2.15	50

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ENGINEERING SERVICES PVT. LTD.

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

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



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TEST REPORT

Test Report No. : ELES/RNC/2024/5605 Report Release Date : 30.09.2024
Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400003503F

Discipline : Chemica	L	Group: Wa	Group: Water		
Parameter Unit		Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water	
Free Residual Chlorine (RFC)	mg/L	1S 3025 (Part-26) : 2021	BDL (DL: 0.1)	-	
Phenols Compounds (as C _a H ₂ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0,005	
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	17.9	**	
Discipline: Cher	nical	Gn	oup : Residues	in Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	74	
Arsenic (as As)	mg/L	1S 3025 (Part 37):2022	BDL (DL: 0.005)	0.2	
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	-	
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.01	
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	
Copper (as Cu)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	1.5	
Iron (as Fe)	mg/L	APHA 24 th Ed.2023; 3111B	0.166	50	
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.1	
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	200	
Mercury (as Hg)	mg/L	IS 3025(Part-48): 1994; RA2019	BDL (DL: 0.001)		
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05	
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15	

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Work Order No.

ENVIRONMENTAL LABORATORIES &

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ENGINEERING SERVICES PVT. LTD

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

: 28.03.2024

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

Work Order Date



YC-11007

TEST REPORT

Test Report No. : ELES/RNC/2024/5605 Report Release Date : 30,09,2024

ULR No. 1 TC135872400003503F

: 13612312113

Discipline : Che	mical	Group: Res	sidues in Water	Tolerance Limits	
Parameter Unit		Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water	
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL, (DL; 0.012)	0.05	
Polynucleur Aromatic Hydrocarbons (PAH)	µg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	-	
Pesticides			1		
Alachlor	pg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	4	
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-	
Hutachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Ethion	μg/Ι	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1,00	
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)		
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Phorate Sulphone	μg/L.	ELES/GC/SOP/01: 2023	BDL. (DL: 0.5)	-	
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	-	

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ENGINEERING SERVICES PVT. LTD.

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

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



TEST REPORT

Test Report No.	: ELES/RNC/2024/5605	Report Release Date	: 30,09.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400003583F		

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
Alpha HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	10
Beta HCH	μg/L.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	-
Delta HCH	ид/L	ELES/GC/SOP/02: 2023	BDL. (DL: 0.02)	-
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	**
Endosulfan (alpha, beta and sulphate)	pg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	· ·
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	(w)
Discipline: Biole	gical	Gre	up: Water	
Total Coliform	CFU/100 mL	IS 15185: 2021	1.90×10 ³	-
Escherichia coli	CFU/100 mL	IS 15185: 2021	1.45×10 ²	-

Remarks: pH & RFC done at Lab.

reins & B

Reviewed by

****End of Report****

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

Technical Manager

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ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/5605	Report Release Date	: 30.09.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/SW/650 : 21.09.2024 : 23.09.2024 : Surface Water : Down Stream : Dhardhari Nadi, Kujam-II Bauxite Mine (157.38ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 23.09,2024 to 30.09,2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline: Chemical Group: Wat			up: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Taste	- 2	APHA 24th Ed.2023, 2160C	N/A	
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.01)	-

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

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AYYLA

Reviewed by

****End of Report****

Dr. Diepende Kemursinha Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

The Document stated in Test Report, is insist by the Labermary under Gorara Terms and Conditions, only on Company letter head in pro-approved format. The meabstook in the Test Report reflects the relative only to the jobinessysts stone by the Labermary only. The information stand on the Test Report reflects the findings done by the Labermary at the time of involvement only and within the limits of claim's notracions. The Laboratory is negociable for all the information or data provided on the supers, except the information which is provided by the claim. The Report counts be reproduced accept in that any legal actions achieve prior prior station and of context, without prior unitary approach of the Laboratory. The Report is half or in part shall not be pathwised, advertise, used for any legal actions achieve prior prior section to a district the limitation of tabelity, correpression and particulations are supported attention & fabrification of the content or approximent of the Test Report is assisted in Midros may be prosecuted to the fallow extent of the law. All the mamples are returned for Midros from the Date of Test Report. The samples from Regulatory besides are to be returned as specified. Any type of Observations or Compliants regarding the Reports shall be done within 15 days from the Date of Test Report infrared-instant and acceptable mentioned in Test Report in the Date of Test Report refracechistical factor Detection Limit). (Note Reports and Limit)



Annexure 3

Date - 06.11.2024

Office Order

Environmental Cell has been re-constituted at Kujam II Bauxite Mine (Area 157.38 ha) comprising below mentioned team members. The team will ensure compliance with the Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Vangalapudi Kumar (Coordinator)
- 2. Mr. Biswajeet Deogharia (Member)
- 3. Mr. Ankit Das (Environment Engineer)
- 4. Mr. Anand Prakash Tiwari (Environment Engineer)

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

Basudev Gangopadhyay AVP (Planning, Environment &Compliance)

Annexure 4

	Production, Mined Out, Back Filled and Over Burden removal from 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)