

HIL/LHD/ENV/MoEF/399

Date: 19.11.2021

To,
The Additional Principal Chief Conservator of Forest (C)
Ministry of Environment, Forests and Climate Changes
Regional Office (ECZ), Ranchi-834002.

Sub: Compliance Report of EC conditions for Pakhar (35.12 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga, Jharkhand for the period April'21 to September'21.

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

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Pakhar (35.12 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Lohardaga, Jharkhand for the period April'21 to September'21. The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
35.12	200000	17.04.1975 to 31.03.2030

Hope you will find the same in order.

Thanking You

Yours Sincerely
FOR HINDALCO INDUSTRIES LIMITED

(Basudev Gangopadhyay)
Sr GM (Geology & Environment)

Enclosure: - As above

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Hindalco Industries Limited

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Corporate ID No.: L27020MH1958PLC011238

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

Environment Clearance No. & date : J-11015/137/2006-IA.II(M), dated 05.04.2007

Period of compliance Report : From 1st April 2021 to 30th September 2021

S No	Conditions	Compliance Status
Specific Conditions		
1	All the conditions stipulated by SPCB in their NOC shall be effectively implemented.	NoC conditions are implemented when mine was operational. Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & field activity of final Mine closure plan are completed.
2	The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
3.	Environmental clearance is subject to grant of forestry clearance, Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 3.45ha forestland shall be obtained before starting mining operation in that area.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
4	Mining shall not intersect groundwater. The mine working shall be restricted to ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
5	The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operation.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
6	Top soil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
7	The waste generated shall be concurrently backfilled in the mined out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress. No external dump is in project area.

	submitted to the Ministry of Environment & Forest on six monthly basis.	
8	<p>Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.</p> <p>Garland drain (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.</p>	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
9	Plantation shall be raised in an area of 24.83ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.	Already 32.85 ha has been planted in and around the mine/Plateau area.
10	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
11	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground water Authority and Regional Director Central Ground Water Board.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
12	Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.

13	Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral. The vehicles should be covered with a tarpaulin and shall not be overloaded.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
14	Drills should either be operated with dust extractors or should be equipped with water injection system.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
15	Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
16	Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
17	Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.	There is no effluent from mine. Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
18	The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. Copy of action plan may be submitted to the Ministry and its Regional Office within 3 months.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
19	A Final Mine Closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in advance of final mine closure for approval.	Final Mine Closure plan (FMCP) approved by IBM. Copy of FMCP approval letter is attached as Annexure 5.

General Conditions

S No	Conditions	Compliance Status
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forest	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.

2	No change in calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress. Enclosed as Annexure- 4.
3	Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RPM, SPM, SO ₂ , NO _x monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress. Pakhar plateau monitoring report is enclosed as Annexure -1.
4	Data on ambient air quality (RPM, SPM, SO ₂ , NO _x) should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress
5	Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
6	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc. should be provided with ear plug / muffs.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
7	Industrial waste water (workshops and waste water from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.
8	Personnel working in dusty areas should wear protective respiratory devices and they should also provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress.

9	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.	Winning of Bauxite is closed w.e.f 08.06.2009 due to exhaustion of resources & closure activities are under progress. We have Environment Management Cell for our Pakhar Group of Mines. The same is looking after Environment issues of this Mine, attached as Annexure-3.
10	The project authorities should inform to the Regional Office located at Bhubneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	This was an operational mines hence, provision of financial closure not applicable.
11	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubneshwar.	Statement of actual expenses for environmental protection measure is enclosed as Annexure-2.
12	The Regional Office of this Ministry located at Bhubneshwar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Agreed however Winning of Bauxite is closed w.e.f. 08.06.2009 due to exhaustion of resources & closure activities are under progress.
13.	The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneshwar, Central Pollution Control Board and State Pollution Control Board.	Duly submitted.
14	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.	Complied.
15	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's office / Tehsildar's Office for 30 days.	Displayed.
16	The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of	Complied. Copies of the advertisement made in the local newspapers, have already been submitted to the Regional Office during our six monthly report bearing letter no HIL/GMO(M)/ENV/142dated 23.05.2007.

Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubneshwar.	
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Signature

Photographs of Pakhar-15.58 ha



(Photographs of plantation)



(Photographs of Reclaimed areas)



Photographs of Oil and Grease Trap



(Photographs of covered truck)



Eco Ventures Pvt. Ltd.

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Mahabal Enviro Engineers Pvt. Ltd.

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

PAKHAR (115.13) – ENVIRONMENTAL MONITORING REPORT

APRIL 2021

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

Branch Office:

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

CONTENT

	LOCATION - PAKHAR (115.13)
	AMBIENT AIR QUALITY - CORE ZONE
1	Near Mine Block B, Quarry No. 3
2	Near Mine Block B, Quarry No. 4
3	Near Mine Block B, Quarry No. 6
4	Near Mine Block B, Quarry No. 7
	AMBIENT AIR QUALITY - BUFFER ZONE
1	Near Bunglapart Village
2	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village
4	Yatri Shed (Near K 10)
	AMBIENT NOISE
	SPOT NOISE
	EFFLUENT WATER ANALYSIS
	DRINKING WATER ANALYSIS





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0151/2021-22	Date: 10 th May, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 3	
Sample collected on: 08.04.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 3				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	80.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	42.9
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.4
05.	Ammonia (NH ₃)	µg/m ³	400	6.9
06.	Ozone (O ₃)	µg/m ³	180	10.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.36
08.	Lead (Pb)	µg/m ³	1.0	0.07
09.	Nickel (Ni)	ng/m ³	20	4.3
10.	Arsenic (As)	ng/m ³	06	2.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.44

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0152/2021-22	Date: 10 th May, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 4	
Sample collected on: 08.04.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 4				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	70.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	35.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	5.4
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	7.2
05.	Ammonia (NH ₃)	µg/m ³	400	9.8
06.	Ozone (O ₃)	µg/m ³	180	10.1
07.	Carbon Monoxide (CO)	mg/m ³	02	0.32
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	4.6
10.	Arsenic (As)	ng/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.36

For Mahabal Enviro Engineers Pvt. Ltd.

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April 2021

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Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 6	
Sample collected on: 08.04.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 6				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	81
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	43
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.3
05.	Ammonia (NH ₃)	µg/m ³	400	5.8
06.	Ozone (O ₃)	µg/m ³	180	11.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.26
08.	Lead (Pb)	µg/m ³	1.0	0.06
09.	Nickel (Ni)	ng/m ³	20	3.3
10.	Arsenic (As)	ng/m ³	06	2.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.31

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0154/2021-22	Date: 10 th May, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 7	
Sample collected on: 08.04.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 7				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	78.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	37.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	5.5
06.	Ozone (O ₃)	µg/m ³	180	9.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.38
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	4.7
10.	Arsenic (As)	ng/m ³	06	2.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

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Hindalco Industries: Pakhar (115.13)

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April 2021

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Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Bunglapart Village	
Sample collected on: 08.04.2021	

LOCATION / IDENTIFICATION: Near Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	44
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	28
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.7
06.	Ozone (O ₃)	µg/m ³	180	10.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.33
08.	Lead (Pb)	µg/m ³	1.0	0.07
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

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April 2021

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Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village	
Sample collected on: 08.04.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	49
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	21
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.3
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	9.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.36
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.7
10.	Arsenic (As)	ng/m ³	06	2.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.38

For Mahabal Enviro Engineers Pvt. Ltd.

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E-mail: mahabalanranchi@gmail.com

Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0157/2021-22	Date: 10 th May, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village	
Sample collected on: 08.04.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	47
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	28
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.5
05.	Ammonia (NH ₃)	µg/m ³	400	4.2
06.	Ozone (O ₃)	µg/m ³	180	10.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.9
10.	Arsenic (As)	ng/m ³	06	3.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.1
12.	Benzo (a) Pyrene	µg/m ³	01	0.26

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0158/2021-22	Date: 10 th May, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Yatri Shed (Near K 10)	
Sample collected on: 08.04.2021	

LOCATION / IDENTIFICATION: Yatri Shed (Near K 10)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	74
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	32
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.7
05.	Ammonia (NH ₃)	µg/m ³	400	5.4
06.	Ozone (O ₃)	µg/m ³	180	10.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.35
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.3
10.	Arsenic (As)	ng/m ³	06	2.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0159/2021-22	Date: 10 th May, 2021
Sample described by customer: Measurement of Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 08.04.2021	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result
Pakhar Mines (115.13 ha.)	dB (A) L_{eq}	75	62.3	70	55.6

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0160/2021-22	Date: 10 th May, 2021
Sample described by customer: Measurement of Spot Noise	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: Measurement of Spot Noise	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 08.04.2021	

Location/Identification	Unit	Limit (day)	Result
Near Poklen at Pakhar Mines (115.13 ha.)	dB (A) L_{eq}	75	73.8

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0161/2021-22			Date: 10th May, 2021		
Sample described by customer: Effluent Water					
Client Name: Hindalco Industries Limited					
Client Address: Lohardaga					
Postal Code: 835203					
State: Jharkhand					
Country: India					
Sample Type: Effluent Water					
Marks on Sample: Location: Pakhar (115.13) Mines					
Quantity: 4 liters.					
Sample collected on: 08.04.2021					
Sl. No.	Analysis	Method	Result	Unit	Limits
1.	pH	APHA 22 nd Ed. 2012, 4500-H+-B,4-92	8.3	mg/l	5.5-9.0
2.	Total Suspended Solids	APHA 22 nd EDN: 2012-2540	74	mg/l	100
3.	BOD @ 27°C	IS 3025 (Part 44): 1993, RA2003, Amd.1	11.5	mg/l	30
4.	COD	IS 3025 (Part 58): 1993, RA2006, Amd.1	46	mg/l	250
5.	Oil & Grease	IS 3025(PART 39): 1991 RA 2003,Ed 2.1	<5.0	mg/l	10
6.	Total Dissolved Solids	APHA 22 ND EDN 2012-2540	1621	mg/l	2100
7.	Aluminium (as Al)	APHA 22 nd EDN 2012-3120B	2.3	mg/l	3
8.	Calcium (as Ca)	APHA 22 nd EDN 2012-3120B	10.8	mg/l	75
9.	Iron (as Fe)	APHA 22 nd EDN 2012-3120B	0.9	mg/l	3
10.	Temperature		17.5	°C	Shall not exceed 5°C above the receiving water temperature

For Mahabal Enviro Engineers Pvt. Ltd.

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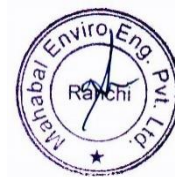
Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Report No.: MEEPL/MAY/0162/2021-22	Date: 10 th May, 2021
Sample described by customer : DRINKING WATER	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: DRINKING WATER	
Marks on Sample: Location: Pakhar (115.13) – Drinking Water.	
Sample collected on: 08.04.2021	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
1	Colour	Hazen	<1	5 Max	APHA 22 nd Ed. 2012, 2120-B, 2-6
2	Odour	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
3	Taste	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
4	Turbidity	NTU	0.3	1 Max	APHA 22 nd Ed. 2012, 2130-B, 2-13
5	pH	--	6.8	6.5-8.5	APHA 22 nd Ed. 2012, 4500-H+-B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.5	0.2 min	APHA 22 nd Ed. 2012, 4500-CI-G, 4-69
7	Total Dissolved Solids	mg/l	144	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Monochloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
9	Dichloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
10	Total hardness (as CaCO ₃)	mg/l	34.8	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	32.4	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	6.4	250 max	APHA 22 nd Ed. 2012, 4500-CI-b, 4-72
13	Sulphate (as SO ₄)	mg/l	4.7	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Continuation Sheet MEEPL/MAY/0162/2021-22

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO ₃)	mg/l	1.8	45 max	APHA 22 nd Ed. 2012, 4500-NO ₃ -E, 4-125
15	Fluoride (as F)	mg/l	0.17	1 max	APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.12	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	35	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	1.9	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84
19	Ammonical Nitrogen/Total Ammonia	mg/l	<0.1	--	APHA 22 nd Ed. 2012, 4500-NH ₃ -F, 4-115
20	Iron (as Fe)	mg/l	0.14	0.3 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
21	Manganese (as Mn)	mg/l	N.D	0.1 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
22	Aluminium (as Al)	mg/l	0.02	0.03 max	APHA 22 nd Ed. 2012, 3500-Al-B, 3-61
23	Cadmium (as Cd)	mg/l	N.D	0.003 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
24	Chromium Total (as Cr)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
25	Copper (as Cu)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
26	Lead (as Pb)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
27	Zinc (as Zn)	mg/l	0.03	5 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	<0.01	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-18
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 nd Ed. 2012, 3112-B, 3-18
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-18
31	Nickel (as Ni)	mg/l	<0.02	0.02 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
32	Mineral Oil	mg/l	N.D	0.5 max	IS 3025 (Part 39): 1991, Reaffirmed 2003: ed. 2.1
33	Cyanide (as CN)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-CN.C & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 nd ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	N.D	0.001 max	APHA 22 nd ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 nd ED. 2012, 6440, 6-93
37	Polychlorinated Biphenyls (PCBs)	mg/l	N.D	0.0005 max	USEPA Method 8082
38	Sulphide (as S)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-S2-C 4-175 & F 4-178





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

April 2021

Continuation Sheet
MEEPL/MAY/0162/2021-22

S.No	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method Reference
Microbiological Analysis					
1.	Total Colliforms	MPN/100 mL	N.D	<1.1	APHA 22nd Ed. 2012, 9221-B & C, 9-66, 9-69
2.	E-Coli	MPN/100 mL	N.D	Absent	APHA 22nd Ed. 2012, 9221-B, C & G, 9-66, 9-69 and 9-76
Pesticides Residues					
3.	p,p DDT	µg/L	N.D	1	US EPA 508-1995
4.	o,p DDT	µg/L	N.D	1	US EPA 508-1995
5.	p,p DDE	µg/L	N.D	1	US EPA 508-1995
6.	o,p DDE	µg/L	N.D	1	US EPA 508-1995
7.	p,p DDD	µg/L	N.D	1	US EPA 508-1995
8.	o,p DDD	µg/L	N.D	1	US EPA 508-1995
9.	γ-HCH (Lindane)	µg/L	<0.01	2	US EPA 508-1995
10.	α-HCH	µg/L	<0.01	0.02	US EPA 508-1995
11.	β-HCH	µg/L	N.D	0.03	US EPA 508-1995
12.	δ - HCH	µg/L	N.D	0.03	US EPA 508-1995
13.	Butachlor	µg/L	N.D	120	US EPA 508-1995
14.	Alachlor	µg/L	N.D	20	US EPA 508-1995
15.	Atrazine	µg/L	N.D	2.1	US EPA 532-2000
16.	α Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
17.	β Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
18.	Endosulfan Sulphate	µg/L	N.D	0.3	US EPA 508-1995
19.	Ethion	µg/L	N.D	3	US EPA 8141A-1994
20.	Malathion	µg/L	N.D	185	US EPA 8141A -1994
21.	Methyl Parathion	µg/L	N.D	0.4	US EPA 8141A -1994
22.	Monocrotophos	µg/L	N.D	1	US EPA 8141A-1994
23.	Phorate	µg/L	N.D	2	US EPA 8141A -1994
24.	Chlorpyrifos	µg/L	N.D	26	US EPA 8141A -1994
25.	Aldrin	µg/L	N.D	0.03	US EPA 508-1995
26.	Dieldrin	µg/L	N.D	0.03	US EPA 508-1995
Remarks: N.D- Not Detected					

Conclusion: The Physical & Chemical Analysis report indicates that water is not contaminated.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Eco Ventures Pvt. Ltd.

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PAKHAR (115.13) – ENVIRONMENTAL MONITORING REPORT

MAY 2021

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

MAY 2021

CONTENT

LOCATION - PAKHAR (115.13)	
AMBIENT AIR QUALITY - CORE ZONE	
1	Near Mine Block B, Quarry No. 3
2	Near Mine Block B, Quarry No. 4
3	Near Mine Block B, Quarry No. 6
4	Near Mine Block B, Quarry No. 7
AMBIENT AIR QUALITY - BUFFER ZONE	
1	Yatri Shed (Near K 10)
2	Near Bunglapart Village
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

MAY 2021

Report no: MEEPL/JUNE/0026/2021-22	Date: 7 th June, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 3	
Sample collected on: 06.05.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 3				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	83.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	40.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.7
05.	Ammonia (NH ₃)	µg/m ³	400	5.9
06.	Ozone (O ₃)	µg/m ³	180	10.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.37
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	3.9
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.29

For Mahabal Enviro Engineers Pvt. Ltd.

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Environmental Monitoring Report

MAY 2021

Report no: MEEPL/JUNE/0027/2021-22	Date: 7 th June, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 4	
Sample collected on: 06.05.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 4				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	75.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	37.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.6
05.	Ammonia (NH ₃)	µg/m ³	400	5.7
06.	Ozone (O ₃)	µg/m ³	180	10.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.32
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	3.1
10.	Arsenic (As)	ng/m ³	06	2.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.35

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

MAY 2021

Report no: MEEPL/JUNE/0028/2021-22	Date: 7 th June, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 6	
Sample collected on: 06.05.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 6				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	86.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	41.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.8
05.	Ammonia (NH ₃)	µg/m ³	400	3.9
06.	Ozone (O ₃)	µg/m ³	180	10.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.29
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.4
10.	Arsenic (As)	ng/m ³	06	4.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.26

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

MAY 2021

Report no: MEEPL/JUNE/0029/2021-22	Date: 7 th June, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 7	
Sample collected on: 06.05.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 7				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	83.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	41.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.3
05.	Ammonia (NH ₃)	µg/m ³	400	3.9
06.	Ozone (O ₃)	µg/m ³	180	9.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.36
08.	Lead (Pb)	µg/m ³	1.0	0.07
09.	Nickel (Ni)	ng/m ³	20	3.2
10.	Arsenic (As)	ng/m ³	06	2.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

MAY 2021

Report no: MEEPL/JUNE/0030/2021-22	Date: 7 th June, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Yatri Shed (Near K 10)	
Sample collected on: 06.05.2021	

LOCATION / IDENTIFICATION: Yatri Shed (Near K 10)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	75.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	33.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.2
05.	Ammonia (NH ₃)	µg/m ³	400	5.3
06.	Ozone (O ₃)	µg/m ³	180	10.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.34
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	2.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.30

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

MAY 2021

Report no: MEEPL/JUNE/0031/2021-22	Date: 7 th June, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Bunglapart Village	
Sample collected on: 06.05.2021	

LOCATION / IDENTIFICATION: Near Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	52.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	25.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.7
05.	Ammonia (NH ₃)	µg/m ³	400	5.7
06.	Ozone (O ₃)	µg/m ³	180	10.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.16
10.	Arsenic (As)	ng/m ³	06	2.7
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.27

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

MAY 2021

Report no: MEEPL/JUNE/0032/2021-22	Date: 7 th June, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village	
Sample collected on: 06.05.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	47.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	23.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.3
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.5
05.	Ammonia (NH ₃)	µg/m ³	400	2.7
06.	Ozone (O ₃)	µg/m ³	180	9.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.36
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.7
10.	Arsenic (As)	ng/m ³	06	2.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.36

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

MAY 2021

Report no: MEEPL/JUNE/0033/2021-22	Date: 7 th June, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village	
Sample collected on: 06.05.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	41.0
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	21.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.8
05.	Ammonia (NH ₃)	µg/m ³	400	5.7
06.	Ozone (O ₃)	µg/m ³	180	9.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.30
08.	Lead (Pb)	µg/m ³	1.0	0.06
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	3.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.35

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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Eco Ventures Pvt. Ltd.

Regd. Office: 2/37, Sarvapriya Vihar, Near IIT Gate, New Delhi-110016

Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Portugese Church, Near Dindayal Upadhyay Garden,
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E: ecoventures.mumbai@gmail.com / ecoventures@eco-ventures.in

Mahabal Enviro Engineers Pvt. Ltd.

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District – Ranchi 834009

PAKHAR (115.13) – ENVIRONMENTAL MONITORING REPORT

JUNE 2021

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

CONTENT

LOCATION - PAKHAR (115.13)	
AMBIENT AIR QUALITY - CORE ZONE	
1	Near Mine Block B, Quarry No. 3
2	Near Mine Block B, Quarry No. 4
3	Near Mine Block B, Quarry No. 6
4	Near Mine Block B, Quarry No. 7
AMBIENT AIR QUALITY - BUFFER ZONE	
1	Yatri Shed (Near K 10)
2	Near Bunglapart Village
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

Report no: MEEPL/JULY/0036/2021-22	Date: 12 th July, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 3	
Sample collected on: 07.06.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 3				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	80.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	40.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.6
05.	Ammonia (NH ₃)	µg/m ³	400	5.8
06.	Ozone (O ₃)	µg/m ³	180	9.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.46
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.9
10.	Arsenic (As)	ng/m ³	06	1.7
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.30

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

Report no: MEEPL/JULY/0037/2021-22	Date: 12 th July, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 4	
Sample collected on: 07.06.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 4				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	71.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	34.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.5
05.	Ammonia (NH ₃)	µg/m ³	400	6.8
06.	Ozone (O ₃)	µg/m ³	180	10.2
07.	Carbon Monoxide (CO)	mg/m ³	02	0.34
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.37

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

Report no: MEEPL/JULY/0038/2021-22	Date: 12 th July, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 6	
Sample collected on: 07.06.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 6				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	84.3
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	43.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.8
05.	Ammonia (NH ₃)	µg/m ³	400	5.5
06.	Ozone (O ₃)	µg/m ³	180	10.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.31
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	2.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.25

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

Report no: MEEPL/JULY/0039/2021-22	Date: 12 th July, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 7	
Sample collected on: 07.06.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 7				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	87.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	42.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.5
05.	Ammonia (NH ₃)	µg/m ³	400	4.8
06.	Ozone (O ₃)	µg/m ³	180	9.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.35
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

Report no: MEEPL/JULY/0040/2021-22	Date: 12 th July, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Yatri Shed (Near K 10)	
Sample collected on: 07.06.2021	

LOCATION / IDENTIFICATION: Yatri Shed (Near K 10)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	71.2
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	32.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.5
05.	Ammonia (NH ₃)	µg/m ³	400	4.6
06.	Ozone (O ₃)	µg/m ³	180	9.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.33
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	2.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

Report no: MEEPL/JULY/0041/2021-22	Date: 12 th July, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Bunglapart Village	
Sample collected on: 07.06.2021	

LOCATION / IDENTIFICATION: Near Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	56.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	25.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.2
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.8
05.	Ammonia (NH ₃)	µg/m ³	400	2.6
06.	Ozone (O ₃)	µg/m ³	180	9.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.9
10.	Arsenic (As)	ng/m ³	06	1.7
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

Report no: MEEPL/JULY/0042/2021-22	Date: 12 th July, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village	
Sample collected on: 07.06.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	51.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	22.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.9
05.	Ammonia (NH ₃)	µg/m ³	400	2.6
06.	Ozone (O ₃)	µg/m ³	180	8.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.27
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.8
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.33

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JUNE 2021

Report no: MEEPL/JULY/0043/2021-22	Date: 12 th July, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village	
Sample collected on: 07.06.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	47.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	20.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.9
05.	Ammonia (NH ₃)	µg/m ³	400	2.7
06.	Ozone (O ₃)	µg/m ³	180	9.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.34
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	2.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.24

For Mahabal Enviro Engineers Pvt. Ltd.

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Eco Ventures Pvt. Ltd.

Regd. Office: 2/37, Sarvapriya Vihar, Near IIT Gate, New Delhi-110016

Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Portugese Church, Near Dindayal Upadhyay Garden,
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E: ecoventures.mumbai@gmail.com / ecoventures@eco-ventures.in

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PAKHAR (115.13) – ENVIRONMENTAL MONITORING REPORT

JULY 2021

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

CONTENT

LOCATION - PAKHAR (115.13)	
A.	AMBIENT AIR QUALITY - CORE ZONE
1	Near Mine Block B, Quarry No. 3
2	Near Mine Block B, Quarry No. 4
3	Near Mine Block B, Quarry No. 6
4	Near Mine Block B, Quarry No. 7
	AMBIENT AIR QUALITY - BUFFER ZONE
1	Yatri Shed (Near K 10)
2	Near Bunglapart Village
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village
B.	RUNOFF WATER ANALYSIS
C.	WORKSHOP EFFLUENT WATER ANALYSIS
D.	DRINKING WATER ANALYSIS





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0036/2021-22	Date: 10 th August, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 3	
Sample collected on: 08.07.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 3				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	76.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	33.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	7.5
05.	Ammonia (NH ₃)	µg/m ³	400	5.6
06.	Ozone (O ₃)	µg/m ³	180	7.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.36
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	2.9
10.	Arsenic (As)	ng/m ³	06	2.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.33

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0037/2021-22	Date: 10 th August, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 4	
Sample collected on: 08.07.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 4				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	72.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	32.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.8
05.	Ammonia (NH ₃)	µg/m ³	400	4.5
06.	Ozone (O ₃)	µg/m ³	180	7.3
07.	Carbon Monoxide (CO)	mg/m ³	02	0.34
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.8
10.	Arsenic (As)	ng/m ³	06	1.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.27

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0038/2021-22	Date: 10 th August, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 6	
Sample collected on: 08.07.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 6				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	72.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	33.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	6.5
05.	Ammonia (NH ₃)	µg/m ³	400	4.2
06.	Ozone (O ₃)	µg/m ³	180	7.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.28
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/m ³	06	2.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0039/2021-22	Date: 10 th August, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 7	
Sample collected on: 08.07.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 7				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	75.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	38.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	4.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	5.6
05.	Ammonia (NH ₃)	µg/m ³	400	5.5
06.	Ozone (O ₃)	µg/m ³	180	7.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.36
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.6
10.	Arsenic (As)	ng/m ³	06	1.7
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.37

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0040/2021-22	Date: 10 th August, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Yatri Shed (Near K 10)	
Sample collected on: 08.07.2021	

LOCATION / IDENTIFICATION: Yatri Shed (Near K 10)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	64.3
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	31.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	4.6
05.	Ammonia (NH ₃)	µg/m ³	400	3.9
06.	Ozone (O ₃)	µg/m ³	180	6.4
07.	Carbon Monoxide (CO)	mg/m ³	02	0.34
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.5
10.	Arsenic (As)	ng/m ³	06	1.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.25

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0041/2021-22	Date: 10 th August, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Bunglapart Village	
Sample collected on: 08.07.2021	

LOCATION / IDENTIFICATION: Near Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	60.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	26.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.6
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	5.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.29
08.	Lead (Pb)	µg/m ³	1.0	0.02
09.	Nickel (Ni)	ng/m ³	20	1.8
10.	Arsenic (As)	ng/m ³	06	1.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.5
12.	Benzo (a) Pyrene	µg/m ³	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0042/2021-22	Date: 10 th August, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village	
Sample collected on: 08.07.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	46.8
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	23.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.7
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	5.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.25
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.38

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0043/2021-22	Date: 10 th August, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village	
Sample collected on: 08.07.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	44.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	20.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.5
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.7
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	5.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.21
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/m ³	06	1.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.27

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0044/2021-22			Date: 10th August, 2021		
Sample described by customer: Runoff Water					
Client Name: Hindalco Industries Limited					
Client Address: Lohardaga					
Postal Code: 835203					
State: Jharkhand					
Country: India					
Sample Type: Runoff Water – Surface Water					
Marks on Sample: Location: Runoff Water – Pakhar (115.13)					
Quantity: 4 liters.					
Sample collected on: 08.07.2021					
Sl. No.	Analysis	Method	Result	Unit	Limits
1.	pH	APHA 22 nd Ed. 2012, 4500-H+-B,4-92	8.5	mg/l	5.5-9.0
2.	Total Suspended Solids	APHA 22 nd EDN: 2012-2540	76	mg/l	100
3.	BOD @ 27°C	IS 3025 (Part 44): 1993, RA2003, Amd.1	8.5	mg/l	30
4.	COD	IS 3025 (Part 58): 1993, RA2006, Amd.1	33.4	mg/l	250
5.	Oil & Grease	IS 3025(PART 39): 1991 RA 2003,Ed 2.1	<5.0	mg/l	10
6.	Total Dissolved Solids	APHA 22 ND EDN 2012-2540	1672	mg/l	2100
7.	Aluminium (as Al)	APHA 22 nd EDN 2012-3120B	1.6	mg/l	3
8.	Calcium (as Ca)	APHA 22 nd EDN 2012-3120B	7.3	mg/l	75
9.	Iron (as Fe)	APHA 22 nd EDN 2012-3120B	1.5	mg/l	3
10.	Temperature		15.7	°C	Shall not exceed 5°C above the receiving water temperature

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0045/2021-22			Date: 10th August, 2021		
Sample described by customer: Workshop Effluent Water					
Client Name: Hindalco Industries Limited					
Client Address: Lohardaga					
Postal Code: 835203					
State: Jharkhand					
Country: India					
Sample Type: Effluent Water					
Marks on Sample: Location: Pakhar (115.13) Mines					
Quantity: 4 liters.					
Sample collected on: 08.07.2021					
Sl. No.	Analysis	Method	Result	Unit	Limits
1.	pH	APHA 22 nd Ed. 2012, 4500-H+-B,4-92	8.6	mg/l	5.5-9.0
2.	Total Suspended Solids	APHA 22 nd EDN: 2012-2540	73	mg/l	100
3.	BOD @ 27°C	IS 3025 (Part 44): 1993, RA2003, Amd.1	11.8	mg/l	30
4.	COD	IS 3025 (Part 58): 1993, RA2006, Amd.1	47	mg/l	250
5.	Oil & Grease	IS 3025(PART 39): 1991 RA 2003,Ed 2.1	<5.0	mg/l	10
6.	Total Dissolved Solids	APHA 22 ND EDN 2012-2540	1619	mg/l	2100
7.	Aluminium (as Al)	APHA 22 nd EDN 2012-3120B	1.7	mg/l	3
8.	Calcium (as Ca)	APHA 22 nd EDN 2012-3120B	11.6	mg/l	75
9.	Iron (as Fe)	APHA 22 nd EDN 2012-3120B	0.9	mg/l	3
10.	Temperature		15.9	°C	Shall not exceed 5°C above the receiving water temperature

For Mahabal Enviro Engineers Pvt. Ltd.

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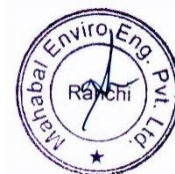
Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Report No. : MEEPL/AUG/0046/2021-22	Date: 10th August, 2021
Sample described by customer : DRINKING WATER	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: DRINKING WATER	
Marks on Sample: Location: Pakhar (115.13) – Drinking Water.	
Sample collected on: 08.07.2021	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
1	Colour	Hazen	<1	5 Max	APHA 22 nd Ed. 2012, 2120-B, 2-6
2	Odour	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
3	Taste	--	Agreeable	Agreeable	IS 3025 (Part 7): 1983, Reaffirmed 2006
4	Turbidity	NTU	0.4	1 Max	APHA 22 nd Ed. 2012, 2130-B, 2-13
5	pH	--	6.9	6.5-8.5	APHA 22 nd Ed. 2012, 4500-H+-B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.5	0.2 min	APHA 22 nd Ed. 2012, 4500-CI-G, 4-69
7	Total Dissolved Solids	mg/l	131	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Monochloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
9	Dichloramines	mg/l	<0.05	--	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
10	Total hardness (as CaCO ₃)	mg/l	31.5	200 max	APHA 22 nd Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO ₃)	mg/l	32.6	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	6.6	250 max	APHA 22 nd Ed. 2012, 4500-CI-b, 4-72
13	Sulphate (as SO ₄)	mg/l	4.9	200 max	APHA 22 nd Ed. 2012, 4500-so4-e, 4-190





Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Continuation Sheet MEEPL/AUG/0046/2021-22

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO ₃)	mg/l	1.8	45 max	APHA 22 nd Ed. 2012, 4500-NO ₃ -E, 4-125
15	Fluoride (as F)	mg/l	0.15	1 max	APHA 22 nd Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.08	0.5 max	APHA 22 nd Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	36	75 max	APHA 22 nd Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	1.8	30 max	APHA 22 nd Ed. 2012, 3500-Mg-B, 3-84
19	Ammonical Nitrogen/Total Ammonia	mg/l	<0.1	--	APHA 22 nd Ed. 2012, 4500-NH ₃ -F, 4-115
20	Iron (as Fe)	mg/l	0.15	0.3 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
21	Manganese (as Mn)	mg/l	N.D	0.1 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
22	Aluminium (as Al)	mg/l	0.01	0.03 max	APHA 22 nd Ed. 2012, 3500-Al-B, 3-61
23	Cadmium (as Cd)	mg/l	N.D	0.003 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
24	Chromium Total (as Cr)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
25	Copper (as Cu)	mg/l	N.D	0.05 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
26	Lead (as Pb)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
27	Zinc (as Zn)	mg/l	0.02	5 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	<0.01	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-18
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 nd Ed. 2012, 3112-B, 3-18
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 nd Ed. 2012, 3114-B, 3-18
31	Nickel (as Ni)	mg/l	<0.02	0.02 max	APHA 22 nd Ed. 2012, 3111-B, 3-18
32	Mineral Oil	mg/l	N.D	0.5 max	IS 3025 (Part 39): 1991, Reaffirmed 2003: ed. 2.1
33	Cyanide (as CN)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-CN.C & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 nd ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C ₆ H ₅ OH)	mg/l	N.D	0.001 max	APHA 22 nd ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 nd ED. 2012, 6440, 6-93
37	Polychlorinated Biphenyls (PCBs)	mg/l	N.D	0.0005 max	USEPA Method 8082
38	Sulphide (as S)	mg/l	N.D	0.05 max	APHA 22 nd ED. 2012, 4500-S2-C 4-175 & F 4-178





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

JULY 2021

Continuation Sheet MEEPL/AUG/0046/2021-22

S.No	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method Reference
Microbiological Analysis					
1.	Total Colliforms	MPN/100 mL	N.D	<1.1	APHA 22nd Ed. 2012, 9221-B & C, 9-66, 9-69
2.	E-Coli	MPN/100 mL	N.D	Absent	APHA 22nd Ed. 2012, 9221-B, C & G, 9-66, 9-69 and 9-76
Pesticides Residues					
3.	p,p DDT	µg/L	N.D	1	US EPA 508-1995
4.	o,p DDT	µg/L	N.D	1	US EPA 508-1995
5.	p,p DDE	µg/L	N.D	1	US EPA 508-1995
6.	o,p DDE	µg/L	N.D	1	US EPA 508-1995
7.	p,p DDD	µg/L	N.D	1	US EPA 508-1995
8.	o,p DDD	µg/L	N.D	1	US EPA 508-1995
9.	γ-HCH (Lindane)	µg/L	<0.01	2	US EPA 508-1995
10.	α-HCH	µg/L	<0.01	0.02	US EPA 508-1995
11.	β-HCH	µg/L	N.D	0.03	US EPA 508-1995
12.	δ - HCH	µg/L	N.D	0.03	US EPA 508-1995
13.	Butachlor	µg/L	N.D	120	US EPA 508-1995
14.	Alachlor	µg/L	N.D	20	US EPA 508-1995
15.	Atrazine	µg/L	N.D	2.1	US EPA 532-2000
16.	α Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
17.	β Endosulfan	µg/L	N.D	0.4	US EPA 508-1995
18.	Endosulfan Sulphate	µg/L	N.D	0.3	US EPA 508-1995
19.	Ethion	µg/L	N.D	3	US EPA 8141A-1994
20.	Malathion	µg/L	N.D	185	US EPA 8141A -1994
21.	Methyl Parathion	µg/L	N.D	0.4	US EPA 8141A -1994
22.	Monocrotophos	µg/L	N.D	1	US EPA 8141A-1994
23.	Phorate	µg/L	N.D	2	US EPA 8141A -1994
24.	Chlorpyrifos	µg/L	N.D	26	US EPA 8141A -1994
25.	Aldrin	µg/L	N.D	0.03	US EPA 508-1995
26.	Dieldrin	µg/L	N.D	0.03	US EPA 508-1995
Remarks: N.D- Not Detected					

Conclusion: The Physical & Chemical Analysis report indicates that water is not contaminated.

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Eco Ventures Pvt. Ltd.

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PAKHAR (115.13) – ENVIRONMENTAL MONITORING REPORT

AUGUST 2021

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

AUGUST 2021

CONTENT

LOCATION - PAKHAR (115.13)	
A.	AMBIENT AIR QUALITY - CORE ZONE
1	Near Mine Block B, Quarry No. 3
2	Near Mine Block B, Quarry No. 4
3	Near Mine Block B, Quarry No. 6
4	Near Mine Block B, Quarry No. 7
B.	AMBIENT AIR QUALITY - BUFFER ZONE
1	Yatri Shed (Near K 10)
2	Near Bunglapart Village
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

AUGUST 2021

Report no: MEEPL/SEP/0026/2021-22	Date: 10 th September, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 3	
Sample collected on: 07.08.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 3				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	21.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	13.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.5
05.	Ammonia (NH ₃)	µg/m ³	400	1.8
06.	Ozone (O ₃)	µg/m ³	180	6.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.16
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.16

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Environmental Monitoring Report

AUGUST 2021

Report no: MEEPL/SEP/0027/2021-22	Date: 10 th September, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 4	
Sample collected on: 07.08.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 4				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	25.9
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	12.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.6
05.	Ammonia (NH ₃)	µg/m ³	400	2.7
06.	Ozone (O ₃)	µg/m ³	180	5.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.14
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.17

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Environmental Monitoring Report

AUGUST 2021

Report no: MEEPL/SEP/0028/2021-22	Date: 10 th September, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 6	
Sample collected on: 07.08.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 6				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	22.1
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	14.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.8
05.	Ammonia (NH ₃)	µg/m ³	400	1.7
06.	Ozone (O ₃)	µg/m ³	180	8.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.05
08.	Lead (Pb)	µg/m ³	1.0	0.03
09.	Nickel (Ni)	ng/m ³	20	2.7
10.	Arsenic (As)	ng/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.4
12.	Benzo (a) Pyrene	µg/m ³	01	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

AUGUST 2021

Report no: MEEPL/SEP/0029/2021-22	Date: 10 th September, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 7	
Sample collected on: 07.08.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 7				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	19.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	11.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.6
05.	Ammonia (NH ₃)	µg/m ³	400	1.4
06.	Ozone (O ₃)	µg/m ³	180	6.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.05
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.8
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.14

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

AUGUST 2021

Report no: MEEPL/SEP/0030/2021-22	Date: 10 th September, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Yatri Shed (Near K 10)	
Sample collected on: 07.08.2021	

LOCATION / IDENTIFICATION: Yatri Shed (Near K 10)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	15.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	9.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.5
05.	Ammonia (NH ₃)	µg/m ³	400	1.6
06.	Ozone (O ₃)	µg/m ³	180	6.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.14
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.54
12.	Benzo (a) Pyrene	µg/m ³	01	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

AUGUST 2021

Report no: MEEPL/SEP/0031/2021-22	Date: 10 th September, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Bunglapart Village	
Sample collected on: 07.08.2021	

LOCATION / IDENTIFICATION: Near Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	17.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	9.7
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	0.9
05.	Ammonia (NH ₃)	µg/m ³	400	2.8
06.	Ozone (O ₃)	µg/m ³	180	7.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.05
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.09

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

AUGUST 2021

Report no: MEEPL/SEP/0032/2021-22	Date: 10 th September, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village	
Sample collected on: 07.08.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	13.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	8.8
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	0.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.8
05.	Ammonia (NH ₃)	µg/m ³	400	1.6
06.	Ozone (O ₃)	µg/m ³	180	6.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.05
08.	Lead (Pb)	µg/m ³	1.0	0.08
09.	Nickel (Ni)	ng/m ³	20	1.7
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.8
12.	Benzo (a) Pyrene	µg/m ³	01	0.12

For Mahabal Enviro Engineers Pvt. Ltd.

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E-mail: mahabalanranchi@gmail.com

Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

AUGUST 2021

Report no: MEEPL/SEP/0033/2021-22	Date: 10 th September, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village	
Sample collected on: 07.08.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	15.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	10.6
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.7
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.7
05.	Ammonia (NH ₃)	µg/m ³	400	1.8
06.	Ozone (O ₃)	µg/m ³	180	6.7
07.	Carbon Monoxide (CO)	mg/m ³	02	0.06
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	1.8
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.16

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Eco Ventures Pvt. Ltd.

Regd. Office: 2/37, Sarvapriya Vihar, Near IIT Gate, New Delhi-110016

Corporate Office: 7/8 Bhaveshwar Bhuvan, Opp Portugese Church, Near Dindayal Upadhyay Garden,
Gokhale Road (North), Dadar (West), Mumbai 400 028. Tel: +91 22 24370520 / 6672.

E: ecoventures.mumbai@gmail.com / ecoventures@eco-ventures.in

Mahabal Enviro Engineers Pvt. Ltd.

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,
District – Ranchi 834009

PAKHAR (115.13) – ENVIRONMENTAL MONITORING REPORT

SEPTEMBER 2021

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





Mahabal Enviro Engineers Pvt. Ltd.

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E-mail: mahabalanranchi@gmail.com

Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

CONTENT

LOCATION - PAKHAR (115.13)	
AMBIENT AIR QUALITY - CORE ZONE	
1	Near Mine Block B, Quarry No. 3
2	Near Mine Block B, Quarry No. 4
3	Near Mine Block B, Quarry No. 6
4	Near Mine Block B, Quarry No. 7
AMBIENT AIR QUALITY - BUFFER ZONE	
1	Yatri Shed (Near K 10)
2	Near Bunglapart Village
3	Near Utkarmit Rajkiya Prathmik Vidyalaya Bunglapart Village
4	Near Utkarmit Rajkiya Prathmik Vidyalaya Dumrapart Village





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

Reports no: MEEPL/OCT/0026/2021-22	Date: 15 th October, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 3	
Sample collected on: 06.09.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 3

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	45.6
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	23.2
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.6
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.9
05.	Ammonia (NH ₃)	µg/m ³	400	4.8
06.	Ozone (O ₃)	µg/m ³	180	8.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.21
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.9
10.	Arsenic (As)	ng/m ³	06	1.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.23

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

Reports no: MEEPL/OCT/0027/2021-22	Date: 15 th October, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 4	
Sample collected on: 06.09.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 4

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	35.5
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	18.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.1
05.	Ammonia (NH ₃)	µg/m ³	400	5.6
06.	Ozone (O ₃)	µg/m ³	180	8.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.17
08.	Lead (Pb)	µg/m ³	1.0	0.07
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	1.3
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.24

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

Reports no: MEEPL/OCT/0028/2021-22	Date: 15 th October, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 6	
Sample collected on: 06.09.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 6				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	45.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	25.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.6
05.	Ammonia (NH ₃)	µg/m ³	400	4.5
06.	Ozone (O ₃)	µg/m ³	180	8.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.14
08.	Lead (Pb)	µg/m ³	1.0	0.08
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	2.0
12.	Benzo (a) Pyrene	µg/m ³	01	0.24

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

Reports no: MEEPL/OCT/0029/2021-22	Date: 15 th October, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Mine Block B, Quarry No. – 7	
Sample collected on: 06.09.2021	

LOCATION / IDENTIFICATION: Near Mine Block B, Quarry No. – 7				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	28.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	17.5
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	3.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.8
05.	Ammonia (NH ₃)	µg/m ³	400	5.9
06.	Ozone (O ₃)	µg/m ³	180	7.8
07.	Carbon Monoxide (CO)	mg/m ³	02	0.19
08.	Lead (Pb)	µg/m ³	1.0	0.04
09.	Nickel (Ni)	ng/m ³	20	2.9
10.	Arsenic (As)	ng/m ³	06	1.9
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.26

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

Reports no: MEEPL/OCT/0030/2021-22

Date: 15th October, 2021

Sample described by customer: AMBIENT AIR QUALITY MONITORING

Client Name: Hindalco Industries Limited

Client Address: Lohardaga

Postal Code: 835203

State: Jharkhand

Country: India

Sample type: AMBIENT AIR QUALITY MONITORING

Marks on Sample: Location: Yatri Shed (Near K 10)

Sample collected on: 06.09.2021

LOCATION / IDENTIFICATION: Yatri Shed (Near K 10)

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	25.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	12.1
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	3.5
05.	Ammonia (NH ₃)	µg/m ³	400	5.3
06.	Ozone (O ₃)	µg/m ³	180	7.6
07.	Carbon Monoxide (CO)	mg/m ³	02	0.16
08.	Lead (Pb)	µg/m ³	1.0	0.06
09.	Nickel (Ni)	ng/m ³	20	1.5
10.	Arsenic (As)	ng/m ³	06	1.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	1.9
12.	Benzo (a) Pyrene	µg/m ³	01	0.18

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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E-mail: mahabalaranchi@gmail.com

Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

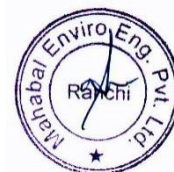
Reports no: MEEPL/OCT/0031/2021-22	Date: 15 th October, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Bunglapart Village	
Sample collected on: 06.09.2021	

LOCATION / IDENTIFICATION: Near Bunglapart Village

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	20.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	11.3
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	2.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.8
05.	Ammonia (NH ₃)	µg/m ³	400	3.5
06.	Ozone (O ₃)	µg/m ³	180	7.5
07.	Carbon Monoxide (CO)	mg/m ³	02	0.06
08.	Lead (Pb)	µg/m ³	1.0	0.08
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	1.6
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.16

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

Reports no: MEEPL/OCT/0032/2021-22	Date: 15 th October, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village	
Sample collected on: 06.09.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Bunglapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	22.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	13.9
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.8
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	2.8
05.	Ammonia (NH ₃)	µg/m ³	400	4.3
06.	Ozone (O ₃)	µg/m ³	180	6.9
07.	Carbon Monoxide (CO)	mg/m ³	02	0.08
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	1.5
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.7
12.	Benzo (a) Pyrene	µg/m ³	01	0.23

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE





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Hindalco Industries: Pakhar (115.13)

Environmental Monitoring Report

SEPTEMBER 2021

Reports no: MEEPL/OCT/0033/2021-22	Date: 15 th October, 2021
Sample described by customer: AMBIENT AIR QUALITY MONITORING	
Client Name: Hindalco Industries Limited	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample type: AMBIENT AIR QUALITY MONITORING	
Marks on Sample: Location: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village	
Sample collected on: 06.09.2021	

LOCATION / IDENTIFICATION: Near Utkramit Rajkiya Prathmik Vidyalaya Dumrapart Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM ₁₀	µg/m ³	100	18.4
02.	Particulate Matter (size less than 2.5 µm) PM _{2.5}	µg/m ³	60	9.4
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	1.9
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	1.5
05.	Ammonia (NH ₃)	µg/m ³	400	2.9
06.	Ozone (O ₃)	µg/m ³	180	8.1
07.	Carbon Monoxide (CO)	mg/m ³	02	0.06
08.	Lead (Pb)	µg/m ³	1.0	0.05
09.	Nickel (Ni)	ng/m ³	20	1.9
10.	Arsenic (As)	ng/m ³	06	0.8
11.	Benzene (C ₆ H ₆)	µg/m ³	05	0.6
12.	Benzo (a) Pyrene	µg/m ³	01	0.12

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey
SENIOR EXECUTIVE



Annexure 1**Piezometer Reading - Pakhar 109.507 ha**

S No	Month	Depth (meter)
1	April'21	39.79
2	May'21	39.85
3	June'21	39.91
4	July'21	40.01
5	August'21	40.29
6	Sept'21	40.69

Annexure-2

BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2021-22

The composite cost during the year 2021-22 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (115.13 ha), Pakhar (15.58 ha), Pakhar (109.507 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Serengdag (140.06 ha), Serengdag (155.81 ha), Jalim & Sanal (12.14 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.97 ha) Kujam II (157.38 ha), Bagru (75.41 ha), Hisri New (14.55 ha), Chiro kukud (152.57 ha), Orsa pat (196.36 ha), Bhusar (65.31 ha) and Bimarla Bauxite Mines (134.52 ha).

S No	Description	Budget (in Rupees) FY 2021-22	Actual (in Rupees) FY 2021-22 (From April'21 to September'21)
1	Pollution Control & Environment monitoring	44,21,524.00	38,26,550.78
2	Reclamation/ Back filling & Rehabilitation**	3,91,80,000.00	2,19,87,911.52
3	Green belt, Plantation & Water spraying arrangement	50,25,900.00	19,62,336.16
4	Rural Development	3,10,21,250.00	1,08,93,416.77

**Part of OB removed cost.



(Basudev Gangopadhyay)
Head (Geology & Environment)



Annexure 3

Date – 06.07.2020

Office Order

Environmental Cell has been re-constituted at Pakhar Bauxite Mine (Area 35.12 ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

1. Mr. Kiran Shankar Singh (Coordinator)
2. Mr. Ramanath Bhagat (Mining Mate) - Member
3. Mr. Abhay Bharti (CSR) – Member
4. Mr. Abhay Kumar – 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.

A handwritten signature in blue ink, appearing to be "Basudev Gangopadhyay", written over a horizontal line.

Basudev Gangopadhyay
Senior Executive (Quality & Environment)

Production, Mined Out, Back Filled and Over Burden removal from April'21 to September'21								
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	60473	0	0	27136.33
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	49451	0.26	0.37	33822.47
4	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	51620	2.46	0.58	47195.21
5	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	111095	2.9	0.98	104352.49
6	Arntipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	81175	2.51	1.00	157783.250
7	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	128785	5.037	4.08	185833.09
8	Shrengdag A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	69525	1.42	1.38	52264.7
9	Shrengdag B Bauxite Mine	140.07	100000	04.10.1978 to 31.03.2030	0	0	0	0
10	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	19930	0.34	0.32	14364.7

Annexure 4

11	Orsapat Bauxite Mine	196.36	200000	17.07.1986 to 16.07.2036	NIL	NIL	NIL	NIL
12	Chiro Kukud bauxite Mine	152.57	100000	29.01.1985 to 28.01.2035	NIL	NIL	NIL	NIL
13	Pakhar (8.09)	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
14	Pakhar (35.12)	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL
15	Pakhar (115.13)	115.13	300000	19.07.1996 to 31.03.2030	95000	0.98	0.97	186006.49
Minerals & Minerals Limited								
16	Pakhar (15.58)	15.58	60000	28.04.1965 to 31.03.2030	9900	0.15	0.10	13215.18
17	Pakhar (109.507)	109.507	280000	26.07.2008 to 25.07.2058	92100	0.95	1.17	111648.32
18	Bimarla Bauxite Mine	134.37	300000	18.07.2009 to 17.07.2059	51200	1.65	1.00	105411.92

*Static information about the mines included in the above table



Basudev Gangopadhyay
Head (Geology & Environment)

Registered Parcel



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

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

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

318-B, Road No.- 3,
Ashok Nagar,
Ranchi - 834 002,
Date: 23/04/2015

To: ✓ Shri A. K. Agarwal,
Director cum Nominated Owner
M/s HINDALCO Industries Ltd.,
Court Road, Lohardaga - 835 302 (Jharkhand).

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

Ref: Your A.G.M. (Geology) letters no. HIL/LHD/BX/IBM/245 Dated 02/08/2014

Your R.Q.P. letter nos. NIL, dated.03/11/2014 & 26/12/2014

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

Sir,

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

- (i) that the Final Mine Closure Plan is approved without prejudice to any other laws applicable to the mine/lease area from time to time whether made by the Central Government, State Government or any other Authority.
- (ii) that this approval of the Final Mine Closure Plan does not, in any way, imply the approval of the Government in terms of any other provisions of the Mines & Minerals (Development & Regulation) Act, 1957 or the Mineral Concession Rules, 1960 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 and the rules made there under.
- (iii) that the Final Mine Closure Plan is approved without prejudice to any order or direction from any court of competent jurisdiction.
- (iv) that the Regional Office, Indian Bureau of Mines, Ranchi shall be informed after completion of activities of final mine closure as per proposal of the Final Mine Closure Plan.
- (v) that the Yearly report as required under Rule 23E(2) of MCDR, 1988 setting forth the extent of protection and rehabilitation works carried out as envisaged in the approved final mine closure plan and if there is any deviations, reasons thereof shall be submitted before 1st July of every year to the Regional office, Indian Bureau of Mines, Ranchi.

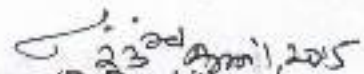
Contd...2

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

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

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


Yours faithfully


(R. Purohit) 23rd April, 2015

Regional Controller of Mines

Copy forwarded for information to: -

1. **The Director (Mines),**
Directorate of Mines and Geology,
Government of Jharkhand,
Nepal House Area, Doranda,
Ranchi - 834 002. (Jharkhand), along with a copy of approved Final Mine Closure Plan. **It is requested to ensure that the determination of aforesaid lease is not accepted unless and until a certificate issued by the Indian Bureau of Mines under Rule 29A (2) of Mineral Concession Rules, 1960 to the effect that protective, reclamation and rehabilitative works as envisaged in the approved Final Mine Closure Plan are carried out.**
2. **The Director of Mines Safety**
Ranchi Region
CMPDIL-Campus
3rd Floor, Old Building
Kanke Road, Ranchi-834008
along with a copy of approved Final Mine Closure Plan.
3. **Shri P.K. Sen, RQP,**
Kali Mandir Road,
Doranda, Ranchi - 834 002.


(R. Purohit)
Regional Controller of Mines