

HIL/LHD/ENV/MoEF/865

Date: 26.11.2020

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 Hisri New (14.55 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga District of Jharkhand for the period April'20 to September'20.

**Ref:** Environmental Clearance letter no J-11015/531/2007-IA II (M) dated 17<sup>th</sup> June 2011

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Hisri New (14.55 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited**, located in Lohardaga District of Jharkhand for the period April'20 to September'20.

The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
14.55	100000	19.07.1981 to 31.03.2030

Hope you will find the same in order.

Thanking You

Yours Sincerely  
FOR M/s Hindalco Industries Limited,

(Basudev Gangopadhyay)  
GM (Geology & Environment)

Enclosure: - As Above

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Name of the Project

: Hisri New Bauxite Mine (14.55 ha)  
M/s Hindalco Industries Ltd

Environment Clearance No & date : J-11015/531/2007-IA II (M), dated 17.06.2011

Period of compliance Report : From 1<sup>st</sup> April 2020 to 30<sup>th</sup> September 2020

S No	Conditions	Compliance Status
	<b>Specific Conditions</b>	
1	The project proponent shall obtain Consent to Establish and Consent to Operate from the Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.	Consent to establish and consent to operate has been obtained prior to start of Mining.  Existing consent to operate is valid till 31 Dec 2020. We have applied on line renewal of CTO for further validity in JSPCB portal.  The implementations of stipulated conditions are being implemented.
2	The environmental clearance is subject to forestry clearance.	Forest clearance is obtained.
3	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.	Entire land has been acquired for mining purpose as per applicable laws.
4	The mining operation shall be restricted to above ground water table and it should not intersect the ground water table. In case of working below ground water table, prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained, for which a detailed hydro - geological study shall be carried out.	Present depth of mining is 12- 15 mtr (maximum) and not intersected ground water.  Working zone will be restricted to above ground water table in future also.  We undertake that no mining is/was carried out below ground water table and the same status will be maintained in future also.
5	The Project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations. The first order streams	It is being ensured that no natural watercourse gets obstructed due to mining operation.



	and the seasonal nallahs originating from the mining lease area shall be protected.	
6	The top soil, if any shall temporarily be stored at earmarked site (s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation.	Sequential backfilling and reclamation of mined out area are being exercised. Topsoil is being spread on backfilled area for reclamation of the area. The top soil is being temporarily stored at earmarked site (s) for its further use for reclamation over backfilled area.
7	The solid waste generated during the mining operation shall be backfilled and there shall be no external overburden dump left at the end of the mine life. The entire excavated area of 12.19 ha. shall be backfilled and reclaimed by plantation. The backfilling should be carried out in such a manner that it is restored to the normal ground level. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six month basis.	Overburden and waste rock are being used for simultaneous back filling. Data pertaining to backfilling is enclosed as Annexure-4.  Backfilling is continuous process and is being done in commensurate with the progress of mining.  Monitoring and management of rehabilitated areas continuing through supervision.  There is no external dump exist within mine lease area.



8	<p>Catch drains and siltation ponds of appropriate size should be constructed around the working pit, sub-grade dump, soil and mineral dumps to arrest flow of silt and sediment directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah and other water bodies. 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, settling tanks and check dams of appropriate size, gradient and length shall be constructed for both around the mine pit and sub grade dump to prevent run off of water and flow sediments directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.</p>	<p>No run-off is generated from mining activities. However, to collect &amp; manage rain water during monsoon, part of mined out area is used as settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary.</p> <p>Catch drains, Garland drains of appropriate size have been constructed both around the mine pit to prevent run off of water and flow of sediments directly into the agricultural field and water bodies.</p> <p>Sump of adequate capacity is being provided and maintained as required.</p> <p>No external dump exists within mine lease area as on date.</p>
9	<p>Dimension of the retaining wall at the toe of the sub-grade, dump and OB benches within the mine to check run-off and siltation should be based on the rain fall data.</p>	<p>Noted. There is no external dump exists within mine lease area.</p>
10	<p>Plantation shall be raised in an area of 12.7 ha including a 7.5 m. wide green belt in the safety zone around the mining lease by planting the native species around ML area, backfilled and reclaimed area, around water body, roads etc. in consultation with the local DFO / Agriculture Department. At least 1500 trees per year shall be planted with a tree density of 1000 trees per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.</p>	<p>Plantation is carried out progressively with progress of mining in and around Mine lease area.</p> <p>Total 2427 saplings have been planted during April'20 to September'20 within this mining lease.</p> <p>Green belt development programme is in progress with progress of mining activities.</p>
11	<p>Effective safe guard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels to particulate matter such as around loading and unloading point and all transfer</p>	<p>Effective safe guard measures, such as regular water sprinkling are being carried out in critical areas prone to air pollution. Regular Ambient Air Quality monitoring is being carried out.</p>



	points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	AAQ quality results are attached carried out by authorized agency. The parameters are found within prescribed limit.
12	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.	System is already in place. Suitable conservation measures to augment ground water resources in area are being taken viz sump, rainwater harvesting pond etc. constructed in mining lease area.
13	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 periodic monitoring [(at least four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) once in each season)] shall be carried out in consultation with the State Ground Water Board/ Central Ground water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional office Bhubaneshwar, The Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.	We are not using ground water for any mining purpose. There is no chance of intersection of ground water table during mining operation at present and in future.  Piezometer has been installed for monitoring of ground water level. Water quality and level report are attached herewith as Annexure 1.
14	Monitoring to the springs shall be carried out for the quality and quantity of water regularly so as to ensure that there is no adverse impact on the same due to the project. Records in this regards shall be maintained.	Spring has been monitored, report is attached as Annexure 1.
15.	It shall be ensured that there is no change in the hydrology of the area due to the project.	Noted. We are regularly monitoring the ground water level and no adverse changes is noted.
16.	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) required for the project.	Water is collected from rainwater harvesting pond.  We are using harvested water only for mining purposes.  No ground water or water from natural surface water bodies are being used for mining purposes.  No Objection Certificate (NOC) for



		ground water abstraction for Hisri New mines has been obtained for drinking purpose only.
17.	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.	Suitable rainwater harvesting measures on long term basis have been implemented Viz. rain water harvesting pond created.
18.	Appropriate mitigative measures shall be taken to prevent pollution of the Kisco Nadi, the Sukri Nadi and other rivers in the buffer zone of the mine, in consultation with the State Pollution Control Board.	Appropriate mitigative measures have been taken to prevent pollution of nearby water bodies. Drainage system in the mining lease area is so designed that all the rain water within the lease are collected in to the pit/rainwater harvesting pond. No water allowed to flow out of the lease.
19	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 from mine face to the Beneficiation plant. The vehicles should be covered with a tarpaulin and shall not be overloaded.	Minimum vehicles are being used for transport.  Regular maintenance of vehicles are undertaken to minimize vehicular emission. Care is taken on regular basis to arrest spillage/fugitive dust emission. Bauxite is also being transported by ropeway from mines to Lohardaga siding.
20	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.	Blasting time is fixed during Lunch Time i.e. 1.00 PM - 2.00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted by IIT, Kharagpur. Efforts and mitigative measure are being taken to mitigate impact of blasting.
21	Drills shall either be operated with dust extractors or equipped with water injection system.	Wet drilling is in practice.
22	Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	Water sprinkling is being carried out regularly at mineral handling area, loading and unloading areas to control the dust.
23	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 generated from mine hence ETP is not required. However, we are using oil and grease for which we have constructed Effluent treatment mechanism (Oil and grease trap) at Bagru Plateau workshop where maintenance of machine is being carried



		out. The clarified water generated during process is being used for plantation/gardening purpose. The sewage water for working population is collected through Septic Tank/Soak Pit and treated in Sewage Treatment Plant already existing in adjoining Bagru ML.
24	The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 Km. from proposed mine.	Being getting done through medical camp.
25	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	System is already in place
26.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of the temporary structures to be removed after the completion of the project.	System is already in place.
27	The critical parameters such as RSPM (Particulate matter with size less than 10 $\mu\text{m}$ (i.e. $\text{PM}_{10}$ , $\text{PM}_{2.5}$ ) and $\text{NO}_x$ in the ambient air within the impact zone, peak particle velocity at 300 m. distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharge water shall also be monitored [(TDS, DO, PH and Total Suspended Solids (TSS)] , The monitored data shall be uploaded on the website of the Company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in Public domain. The Circular no. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry <a href="http://www.envfor.nic.in">www.envfor.nic.in</a> shall also be referred in this regard for its compliance.	Being carried out. Monitoring report is enclosed as Annexure 1.
28	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.	Progressive Mine Closure Plan duly approved by Indian Bureau of Mines is with us. FMCP (part) is approved by IBM. FMCP for entire lease will be prepared in due time as per applicable



guideline and timelines mentioned in MCDR/IBM guideline who are competent authority to approve the same.

Based on the present resource estimate, and peak rated production capacity mentioned in EC, the tentative balance life is around 12 years. The balance life of the mine may change based on final resource estimate, EC capacity and cut-off grade at that point of time.

**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 & Forests.	Noted.
2	No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.	Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining plan / mining scheme. Report is attached as Annexure 4.
3	Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife department.	Conservation measures for protection of flora and fauna in core & buffer zone has been drawn up in consultation with local forest and wildlife department. Wild life conservation plan has been submitted to forest department
4	Four ambient air quality-monitoring station should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 $\mu\text{m}$ (i.e. $\text{PM}_{10}$ ) $\text{PM}_{2.5}$ ) & $\text{NO}_x$ 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.	We have already established four ambient air quality monitoring stations in core zone as well as buffer zone. Monitoring is being carried out and reported to concern authorities. Report is attached as Annexure 1.
5	Data on ambient air quality RSPM (Particulate matter with size less than 10 $\mu\text{m}$ i.e. $\text{PM}_{10}$ ) & $\text{NO}_x$ 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.	Being carried out. Enclosed as Annexure-1.



6	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.	Water spraying arrangements on haul roads, loading and unloading and at transfer points have been provided and properly maintained.
7	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.	Measures are being taken for control of noise levels below 85 dB (A) in work environment. Workers engaged in operation of HEMM, etc. has been provided with ear plug / muffs.
8	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 <sup>th</sup> May, 1993 and 31 <sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	There is no industrial wastewater generated from workshop within mine lease area. We are using oil and grease for which we have constructed oil and grease trap at Bagru Plateau workshop where maintenance of machine is being carried out. The clarified water generated during process is being used for plantation/gardening purpose.
9	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.	Complicd. Use of personal protective equipment (PPE) by the individuals is being ensured. All the mine workers are being regularly and periodically sent to our own hospital for health checkup for any contraction of diseases due to exposure in dusty and noisy areas.  Training on safety, health and environmental aspects of mining is being regularly imparted through VT centre and also through various other training programmes conducted by the State Government, recognized agencies, etc
10	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.	Separate environmental management Cell (EMC) has been constituted and is functioning effectively. Copy enclosed as Annexure-3.
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 Bhubaneshwar.	Year wise expenditure is being reported to the Ministry and its Regional Office located at Ranchi, is attached as Annexure-2.
12	The project authorities should inform to the Regional Office located at Bhubaneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land	This is an operating Mine and provision related to financial closure is not applicable. Now Regional office is at Ranchi



	development work.	
13	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Agreed. Now Regional office is at Ranchi
14	The project proponent shall submit six monthly report on the status of the compliance of the stipulated environmental Clearance conditions including results of monitoring data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Officer, Bhubaneswar, the respective Zonal office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the Environmental Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and State Pollution Control Board.	Duly submitted. Now Regional office is at Ranchi
15	A copy of clearance letter shall be sent by the proponent to concerned Panchyat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Duly submitted.
16	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.
17	The environmental statement for each financial year ending 31 <sup>st</sup> March in Form - V as is mandated to be submitted by the project proponent to the concerned Stated pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of the compliance of environmental clearance	Submitted.



	conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Bhubneshwar by e-mail.	
18.	The Company shall submit within 3 month their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/ procedure to bring into focus any infringements/ deviation/ violation of environmental or forest norms/ conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance with environmental issues and ensuring compliance with Environment Clearance conditions and (iii) System of reporting of non compliance / violation of environmental norms to the Board of Directors of the Company and / or stakeholders or shareholders.	Policies towards Corporate Environment Responsibility is in place. The latest Corporate environment policy enumerating corporate responsibilities is attached as Annexure 5. Company has implemented a system in line with the above policies which addresses following points.(i) Standard operating process/procedure to bring into focus any infringements/ deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the company to deal with environmental issues and ensuring compliance EC conditions and (iii) System of reporting of non compliance.
19	The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubneshwar.	Complied and informed.



Signature





# 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

## HISRI (NEW) BAUXITE MINE - ENVIRONMENTAL MONITORING REPORT

APRIL 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







**Branch Office:**

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## CONTENT

<b>LOCATION - HISRI (NEW) BAUXITE MINE</b>	
<b>AMBIENT AIR QUALITY - CORE ZONE</b>	
1	Near Water Pump
2	Near Old Rest Shelter
3	Near Old Plantation (North West Corner)
4	Hisri New (Southern Area)
<b>AMBIENT NOISE</b>	
<b>SPOT NOISE</b>	
<b>DRINKING WATER ANALYSIS</b>	
<b>SPRING WATER QUALITY</b>	







# Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

<b>Report No:</b> MEEPL/MAY/0343/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Water Pump</b>	
<b>Sample collected on:</b> 07.04.2020	

LOCATION / IDENTIFICATION: Near Water Pump				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	47.5
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	24.9
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.8
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.5
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.1
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.19
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.3
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.4
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.6
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.32

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







# Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

<b>Report No.:</b> MEEPL/MAY/0344/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Rest Shelter	
<b>Sample collected on:</b> 07.04.2020	

LOCATION / IDENTIFICATION: Near Old rest Shelter				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	55.4
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	27.9
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	5.4
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	6.8
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.22
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.9
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.4
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.2

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







# Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

<b>Report No.:</b> MEEPL/MAY/0345/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Plantation (North West Corner)	
<b>Sample collected on:</b> 07.04.2020	

LOCATION / IDENTIFICATION: Near Old Plantation (North West Corner)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	69.3
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	32.8
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.7
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	5.5
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.19
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.18
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.4
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.2
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.24

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







# Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

<b>Report No.:</b> MEEPL/MAY/0346/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample: Location: <b>Hisri New (Southern Area)</b>	
<b>Sample collected on:</b> 07.04.2020	

LOCATION / IDENTIFICATION: Hisri New (Southern Area)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	65.0
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	30.7
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.5
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.7
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.8
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.26
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.2
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.8
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

April 2020

<b>Report No:</b> MEEPL/MAY/0326/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Daldaliya Village</b>	
<b>Sample collected on:</b> 04.04.2020	

LOCATION / IDENTIFICATION: Near Daldaliya Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	54.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	22.7
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.5
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	6.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	7.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	11.3
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.31
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	3.8
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.5
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	3.2
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.42

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

April 2020

<b>Report No:</b> MEEPL/MAY/0327/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Aditya School Gangupara	
<b>Sample collected on:</b> 04.04.2020	

LOCATION / IDENTIFICATION: Aditya School Gangupara				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	51
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	24
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.7
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	5.2
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.4
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.13
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.01
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.0
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.9
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.7
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.5

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Hindalco Industries : Bagru

Environmental Monitoring Report

April 2020

<b>Report No:</b> MEEPL/MAY/0328/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Ropeway Unloading Station	
<b>Sample collected on:</b> 04.04.2020	

LOCATION / IDENTIFICATION: Ropeway Unloading Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	57
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	27
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.5
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	5.8
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.6
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	11.2
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.22
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	3.0
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.8
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	3.4
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.38

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

April 2020

<b>Report No:</b> MEEPL/MAY/0329/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b> Client Address: Lohardaga Postal Code: 835203 State: Jharkhand Country: India Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b> Marks on Sample: Location: <b>Ropeway Angle Station</b> <b>Sample collected on:</b> 04.04.2020	

LOCATION / IDENTIFICATION: Ropeway Angle Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	53
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	39
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	5.0
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	7.5
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.1
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.4
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.18
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	3.0
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	3.1
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.32

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

<b>Report No.:</b> MEEPL/MAY/0347/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer:</b> Measurement of Noise	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Description: <b>Measurement of Noise</b>	
Sampling Method: <b>Instrumental, using Sound level Meter</b>	
Data Collection Date: 07.04.2020	

Location/Identification	Unit	Limit (day)	Result	Limit (night)	Result
Hisri (New) Mines	dB (A) $L_{eq}$	75	<b>67.6</b>	70	<b>59.2</b>

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

<b>Report No.:</b> MEEPL/MAY/0348/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
Sample described by customer: Measurement of Spot Noise	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Description: <b>Measurement of Spot Noise</b>	
Sampling Method: Instrumental, using Sound level Metter	
Data Collection Date: 07.04.2020	

Location/Identification	Unit	Limit (day)	Result
Hisri (New) – Southern Area	dB (A) $L_{eq}$	75	<b>70.6</b>

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

<b>Report No.:</b> MEEPL/MAY/0349/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer :</b> DRINKING WATER	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample Type:</b> DRINKING WATER	
<b>Marks on Sample:</b> Location: Hisri (New) - Drinking Water.	
<b>Sample collected on:</b> 07.04.2020	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
1	Colour	Hazen	<1	5 Max	APHA 22 <sup>nd</sup> 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	0.2	1 Max	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-13
5	pH	--	7.0	6.5-8.5	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H+ -B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.5	0.2 min	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-G, 4-69
7	Total Dissolved Solids	mg/l	145	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Monochloramines	mg/l	<0.05	--	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CIG, 4-69
9	Dichloramines	mg/l	<0.05	--	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CIG, 4-69
10	Total hardness (as CaCO <sub>3</sub> )	mg/l	35.1	200 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/l	31.9	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	6.3	250 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-b, 4-72
13	Sulphate (as SO <sub>4</sub> )	mg/l	4.5	200 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-so4-e, 4-190





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

## Continuation Sheet

MEEPL/MAY/0349/2020-21

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO <sub>3</sub> )	mg/l	1.5	45 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-NO <sub>3</sub> -E, 4-125
15	Fluoride (as F)	mg/l	0.14	1 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.10	0.5 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	27	75 max	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	1.5	30 max	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Mg-B, 3-84
19	Ammonical Nitrogen/Total Ammonia	mg/l	<0.1	--	APHA 22 <sup>nd</sup> Ed. 2012, 4500-NH <sub>3</sub> -F, 4-115
20	Iron (as Fe)	mg/l	0.15	0.3 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
21	Manganese (as Mn)	mg/l	N.D	0.1 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
22	Aluminium (as Al)	mg/l	0.01	0.03 max	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Al-B, 3-61
23	Cadmium (as Cd)	mg/l	N.D	0.003 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
24	Chromium Total (as Cr)	mg/l	N.D	0.05 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
25	Copper (as Cu)	mg/l	N.D	0.05 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
26	Lead (as Pb)	mg/l	N.D	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
27	Zinc (as Zn)	mg/l	0.02	5 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	<0.01	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3114-B, 3-18
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 <sup>nd</sup> Ed. 2012, 3112-B, 3-18
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3114-B, 3-18
31	Nickel (as Ni)	mg/l	<0.02	0.02 max	APHA 22 <sup>nd</sup> 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 <sup>nd</sup> ED. 2012, 4500-CNC & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 <sup>nd</sup> ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	N.D	0.001 max	APHA 22 <sup>nd</sup> ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 <sup>nd</sup> 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 <sup>nd</sup> ED. 2012, 4500-S2-C 4-175 & F 4-178







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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

## Continuation Sheet

MEEPL/MAY/0349/2020-21

S.No	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method Reference
<b>Microbiological Analysis</b>					
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
<b>Pesticides Residues</b>					
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





# Mahabal Enviro Engineers Pvt. Ltd.

## Branch Office:

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

<b>Report No.:</b> MEEPL/MAY/0394/2020-21	<b>Date:</b> 11 <sup>th</sup> May, 2020
<b>Sample described by customer :</b> SPRING WATER	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample Type:</b> SPRING WATER	
<b>Marks on Sample:</b> Location: Hisri (New) Mines	
<b>Quantity:</b> 5 L X 2 No. PVC Can	
<b>Sample collected on:</b> 07.04.2020	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
1	Colour	Hazen	<2	5 Max	APHA 22 <sup>nd</sup> 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	0.27	1 Max	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-13
5	pH	--	6.7	6.5-8.5	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H+-B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.5	0.2 min	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CI-G, 4-69
7	Total Dissolved Solids	mg/l	408	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Total hardness (as CaCO <sub>3</sub> )	mg/l	32	200 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CIG, 4-69
9	Alkalinity Total (as CaCO <sub>3</sub> )	mg/l	39	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
10	Chloride (as Cl)	mg/l	37	250 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CI-b, 4-72
11	Sulphate (as SO <sub>4</sub> )	mg/l	25.1	200 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-so4-e, 4-190
12	Boron (as B)	mg/l	0.24	0.5 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-BB, 4-25
13	Magnesium (as Mg)	mg/l	6.2	30 max	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Mg-B, 3-84







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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

April 2020

## Continuation Sheet MEEPL/MAY/0394/2020-21

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS 10500:2012)	Method Reference
14	Fluoride (as F)	mg/l	0.13	1 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-FB & D, 4-84, 4-87
15	Calcium (as Ca)	mg/l	9.2	75 max	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Ca-B, 3-67
16	Iron (as Fe)	mg/l	0.07	0.3 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
17	Cadmium (as Cd)	mg/l	N.D	0.003 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
18	Chromium Total (as Cr)	mg/l	N.D	0.05 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
19	Copper (as Cu)	mg/l	N.D	0.05 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
20	Lead (as Pb)	mg/l	N.D	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
21	Zinc (as Zn)	mg/l	0.02	5 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
22	Arsenic (as As)	mg/l	<0.01	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3114-B, 3-38
23	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 <sup>nd</sup> Ed. 2012, 3112-B, 3-23
24	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3114-B, 3-38
25	Cyanide (as CN)	mg/l	N.D	0.05 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CN.C & 4-39 & 4-44
26	Manganese (as Mn)	mg/l	N.D	0.1 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
27	Dissolved Oxygen	mg/l	7.3	7-8	APHA 20 <sup>th</sup> ED. Method 4500-o g.

**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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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](mailto:ecoventures.mumbai@gmail.com) / [ecoventures@eco-ventures.in](mailto:ecoventures@eco-ventures.in)

**Mahabal Enviro Engineers Pvt. Ltd.**  
At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,  
District – Ranchi 834009

## HISRI (NEW) BAUXITE MINE - ENVIRONMENTAL MONITORING REPORT

MAY 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







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## CONTENT

LOCATION - HISRI (NEW) BAUXITE MINE	
AMBIENT AIR QUALITY - CORE ZONE	
1	Near Water Pump
2	Near Old Rest Shelter
3	Near Old Plantation (North West Corner)
4	Hisri New (Southern Area)





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

MAY 2020

<b>Report no:</b> MEEPL/JUNE/0322/2020-21	<b>Date:</b> 17 <sup>th</sup> June, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Water Pump</b>	
<b>Sample collected on:</b> 06.05.2020	

LOCATION / IDENTIFICATION: Near Water Pump				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	52.4
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	24.2
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.6
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.7
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.8
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.5
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.24
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.5
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.8
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

MAY 2020

<b>Report no:</b> MEEPL/JUNE/0323/2020-21	<b>Date:</b> 17 <sup>th</sup> June, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Rest Shelter	
<b>Sample collected on:</b> 06.05.2020	

LOCATION / IDENTIFICATION: Near Old rest Shelter				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	56.5
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	28.2
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.2
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.3
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.6
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.24
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.9
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.4
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	029

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

MAY 2020

<b>Report no:</b> MEEPL/JUNE/0324/2020-21	<b>Date:</b> 17 <sup>th</sup> June, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Plantation (North West Corner)	
<b>Sample collected on:</b> 06.05.2020	

LOCATION / IDENTIFICATION: Near Old Plantation (North West Corner)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	61.4
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	30.8
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.4
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.7
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.4
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.22
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	3.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	3.4
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.24

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

MAY 2020

<b>Report no:</b> MEEPL/JUNE/0325/2020-21	<b>Date:</b> 17 <sup>th</sup> June, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b> Client Address: Lohardaga Postal Code: 835203 State: Jharkhand Country: India Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b> Marks on Sample: Location: <b>Hisri New (Southern Area)</b> <b>Sample collected on:</b> 06.05.2020	

LOCATION / IDENTIFICATION: Hisri New (Southern Area)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	70.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	33.6
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	58
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	6.7
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.22
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.1
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.6
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.29

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

MAY 2020

<b>Report no:</b> MEEPL/JUNE/0314/2020-21	<b>Date:</b> 17 <sup>th</sup> June, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Daldaliya Village</b>	
<b>Sample collected on:</b> 05.05.2020	

LOCATION / IDENTIFICATION: Near Daldaliya Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	56.8
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	24.4
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.8
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.249
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.9
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

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SENIOR EXECUTIVE





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Hindalco Industries : Bagru

Environmental Monitoring Report

MAY 2020

<b>Report no:</b> MEEPL/JUNE/0315/2020-21	<b>Date:</b> 17 <sup>th</sup> June, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Aditya School Gangupara	
<b>Sample collected on:</b> 05.05.2020	

LOCATION / IDENTIFICATION: Aditya School Gangupara				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	52.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	22.2
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.7
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.6
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.28
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.05
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.6
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.8
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

MAY 2020

<b>Report no:</b> MEEPL/JUNE/0316/2020-21	<b>Date:</b> 17 <sup>th</sup> June, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Ropeway Unloading Station	
<b>Sample collected on:</b> 05.05.2020	

LOCATION / IDENTIFICATION: Ropeway Unloading Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	60.6
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	27.6
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	5.5
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	10.3
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.29
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.05
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	3.7
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.9
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.2
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.21

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE





# Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

MAY 2020

<b>Report no:</b> MEEPL/JUNE/0317/2020-21	<b>Date:</b> 17 <sup>th</sup> June, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b> Client Address: Lohardaga Postal Code: 835203 State: Jharkhand Country: India Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b> Marks on Sample: Location: <b>Ropeway Angle Station</b> <b>Sample collected on:</b> 05.05.2020	

LOCATION / IDENTIFICATION: Ropeway Angle Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	52.8
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	30.7
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.3
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.6
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.6
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.31
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.8
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.9
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.32

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
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**Mahabal Enviro Engineers Pvt. Ltd.**  
At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,  
District – Ranchi 834009

## HISRI (NEW) BAUXITE MINE - ENVIRONMENTAL MONITORING REPORT

JUNE 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







**Branch Office:**

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## CONTENT

LOCATION - HISRI (NEW) BAUXITE MINE	
AMBIENT AIR QUALITY - CORE ZONE	
1	Near Water Pump
2	Near Old Rest Shelter
3	Near Old Plantation (North West Corner)
4	Hisri New (Southern Area)





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JUNE 2020

<b>Report no:</b> MEEPL/JULY/0342/2020-21	<b>Date:</b> 20 <sup>th</sup> July, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Water Pump</b>	
<b>Sample collected on:</b> 05.06.2020	

LOCATION / IDENTIFICATION: Near Water Pump				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	56.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	28.3
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.0
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	2.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.6
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.25
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.3
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.1
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.3
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.31

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JUNE 2020

<b>Report no:</b> MEEPL/JULY/0343/2020-21	<b>Date:</b> 20 <sup>th</sup> July, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Rest Shelter	
<b>Sample collected on:</b> 05.06.2020	

LOCATION / IDENTIFICATION: Near Old rest Shelter				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	53.3
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	25.5
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.3
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.1
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.5
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.8
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.21
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.1
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.8
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.9
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.29

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JUNE 2020

<b>Report no:</b> MEEPL/JULY/0344/2020-21	<b>Date:</b> 20 <sup>th</sup> July, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Plantation (North West Corner)	
<b>Sample collected on:</b> 05.06.2020	

LOCATION / IDENTIFICATION: Near Old Plantation (North West Corner)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	66.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	28.4
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.6
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.7
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.0
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.7
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.28
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.01
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.3
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.8
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.7
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.29

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JUNE 2020

<b>Report no:</b> MEEPL/JULY/0345/2020-21	<b>Date:</b> 20 <sup>th</sup> July, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample: Location: <b>Hisri New (Southern Area)</b>	
<b>Sample collected on:</b> 05.06.2020	

LOCATION / IDENTIFICATION: Hisri New (Southern Area)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	62.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	29.5
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.6
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.7
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.8
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.29
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.01
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.8
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.2
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.9
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.27

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

JUNE 2020

<b>Report no:</b> MEEPL/JULY/0334/2020-21	<b>Date:</b> 20 <sup>th</sup> July, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Daldaliya Village</b>	
<b>Sample collected on:</b> 03.06.2020	

LOCATION / IDENTIFICATION: Near Daldaliya Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	58.6
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	23.2
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.4
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.29
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.9
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.32

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
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Hindalco Industries : Bagru

Environmental Monitoring Report

JUNE 2020

<b>Report no:</b> MEEPL/JULY/0335/2020-21	<b>Date:</b> 20 <sup>th</sup> July, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Aditya School Gangupara	
<b>Sample collected on:</b> 03.06.2020	

LOCATION / IDENTIFICATION: Aditya School Gangupara				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	57.6
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	24.8
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.4
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	2.6
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.7
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.24
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.8
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	0.6
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

JUNE 2020

<b>Report no:</b> MEEPL/JULY/0336/2020-21	<b>Date:</b> 20 <sup>th</sup> July, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Ropeway Unloading Station	
<b>Sample collected on:</b> 03.06.2020	

LOCATION / IDENTIFICATION: Ropeway Unloading Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	53.6
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	24.1
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.3
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.6
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.4
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.29
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.05
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.9
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.9
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.28

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
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Hindalco Industries : Bagru

Environmental Monitoring Report

JUNE 2020

<b>Report no:</b> MEEPL/JULY/0337/2020-21	<b>Date:</b> 20 <sup>th</sup> July, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample: Location: <b>Ropeway Angle Station</b>	
<b>Sample collected on:</b> 03.06.2020	

LOCATION / IDENTIFICATION: Ropeway Angle Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	50.4
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	32.1
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.5
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.6
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.24
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.4
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.7
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.33

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
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**Mahabal Enviro Engineers Pvt. Ltd.**  
At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,  
District – Ranchi 834009

## HISRI (NEW) BAUXITE MINE - ENVIRONMENTAL MONITORING REPORT

JULY 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE





**Branch Office:**

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

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# Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JULY 2020

<b>Report No. :</b> MEEPL/AUG/0300/2020-21	<b>Date:</b> 10 <sup>th</sup> August, 2020
<b>Sample described by customer: AMBIENT AIR QUALITY MONITORING</b>	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Water Pump</b>	
<b>Sample collected on:</b> 07.07.2020	

LOCATION / IDENTIFICATION: Near Water Pump				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	44.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	20.9
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.5
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	2.0
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	6.1
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.23
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.0
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.5
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.8
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.22

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JULY 2020

<b>Report No. :</b> MEEPL/AUG/0301/2020-21	<b>Date:</b> 10 <sup>th</sup> August, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Rest Shelter	
<b>Sample collected on:</b> 07.07.2020	

LOCATION / IDENTIFICATION: Near Old rest Shelter				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	47.7
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	23.2
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.8
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.0
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	5.5
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.25
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.01
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.8
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.4
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.6
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.25

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JULY 2020

Report No. : MEEPL/AUG/0302/2020-21	Date: 10 <sup>th</sup> August, 2020
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 Old Plantation (North West Corner)	
Sample collected on: 07.07.2020	

LOCATION / IDENTIFICATION: Near Old Plantation (North West Corner)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	50.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	24.0
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.1
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.7
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	4.5
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.21
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.1
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.0
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.25

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JULY 2020

<b>Report No. : MEEPL/AUG/0303/2020-21</b>	<b>Date: 10<sup>th</sup> August, 2020</b>
<b>Sample described by customer: AMBIENT AIR QUALITY MONITORING</b>	
Client Name: <b>Hindalco Industries Limited</b> Client Address: Lohardaga Postal Code: 835203 State: Jharkhand Country: India Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b> Marks on Sample: Location: <b>Hisri New (Southern Area)</b> <b>Sample collected on: 07.07.2020</b>	

LOCATION / IDENTIFICATION: Hisri New (Southern Area)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	68.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	33.8
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.3
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	5.2
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.5
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	5.3
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.27
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.7
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.1
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.28

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Hindalco Industries : Bagru

Environmental Monitoring Report

JULY 2020

<b>Report No. :</b> MEEPL/AUG/0287/2020-21	<b>Date:</b> 10 <sup>th</sup> August, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Daldaliya Village</b>	
<b>Sample collected on:</b> 04.07.2020	

LOCATION / IDENTIFICATION: Near Daldaliya Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	37.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	18.7
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.3
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	2.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	5.7
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.24
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.4
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.1
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.22

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Hindalco Industries : Bagru

Environmental Monitoring Report

JULY 2020

<b>Report No. :</b> MEEPL/AUG/0288/2020-21	<b>Date:</b> 10 <sup>th</sup> August, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Aditya School Gangupara	
<b>Sample collected on:</b> 04.07.2020	

LOCATION / IDENTIFICATION: Aditya School Gangupara				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	41.6
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	21.3
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.1
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.8
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	2.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	5.1
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.21
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.5
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.23
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	0.9
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.31

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Hindalco Industries : Bagru

Environmental Monitoring Report

JULY 2020

<b>Report No. :</b> MEEPL/AUG/0289/2020-21	<b>Date:</b> 10 <sup>th</sup> August, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Ropeway Unloading Station	
<b>Sample collected on:</b> 04.07.2020	

LOCATION / IDENTIFICATION: Ropeway Unloading Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	46.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	20.3
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.7
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.1
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	6.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.29
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.05
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.8
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.9
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.28

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Hindalco Industries : Bagru

Environmental Monitoring Report

JULY 2020

<b>Report No. : MEEPL/AUG/0290/2020-21</b>	<b>Date: 10<sup>th</sup> August, 2020</b>
<b>Sample described by customer: AMBIENT AIR QUALITY MONITORING</b>	
Client Name: <b>Hindalco Industries Limited</b> Client Address: Lohardaga Postal Code: 835203 State: Jharkhand Country: India Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b> Marks on Sample: Location: <b>Ropeway Angle Station</b> <b>Sample collected on: 04.07.2020</b>	

LOCATION / IDENTIFICATION: Ropeway Angle Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	40.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	19.8
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.5
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.8
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	6.9
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.22
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.8
10.	Arsenic (As)	ng/m <sup>3</sup>	06	2.4
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.8
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.19

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JULY 2020

<b>Report No. : MEEPL/AUG/0304/2020-21</b>				<b>Date: 10<sup>th</sup> August, 2020</b>	
Sample described by customer: <b>Runoff Water</b>					
Client Name: <b>Hindalco Industries Limited</b>					
Client Address: Lohardaga					
Postal Code: 835203					
State: Jharkhand					
Country: India					
Sample Type: <b>Runoff Water – Surface Water</b>					
Marks on Sample: Location: <b>Runoff Water – Hisri (New) Bauxite Mines</b>					
<b>Quantity:</b> 4 liters.					
<b>Sample collected on:</b> 07.07.2020					
Sl. No.	Analysis	Method	Result	Unit	Limits
1.	pH	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H+-B,4-92	<b>7.9</b>	mg/l	5.5-9.0
2.	Total Suspended Solids	APHA 22 <sup>nd</sup> EDN: 2012-2540	<b>78</b>	mg/l	100
3.	BOD @ 27°C	IS 3025 (Part 44): 1993, RA2003, Amd.1	<b>6.5</b>	mg/l	30
4.	COD	IS 3025 (Part 58): 1993, RA2006, Amd.1	<b>31</b>	mg/l	250
5.	Oil & Grease	IS 3025(PART 39): 1991 RA 2003,Ed 2.1	<b>&lt;5.0</b>	mg/l	10
6.	Total Dissolved Solids	APHA 22 <sup>ND</sup> EDN 2012-2540	<b>1604</b>	mg/l	2100
7.	Aluminium (as Al)	APHA 22 <sup>nd</sup> EDN 2012-3120B	<b>1.0</b>	mg/l	3
8.	Calcium (as Ca)	APHA 22 <sup>nd</sup> EDN 2012-3120B	<b>7.1</b>	mg/l	75
9.	Iron (as Fe)	APHA 22 <sup>nd</sup> EDN 2012-3120B	<b>1.0</b>	mg/l	3
10.	Temperature		<b>17.7</b>	°C	Shall not exceed 5°C above the receiving water temperature

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JULY 2020

<b>Report No. :</b> MEEPL/AUG/0305/2020-21	<b>Date:</b> 10 <sup>th</sup> August, 2020
<b>Sample described by customer :</b> DRINKING WATER	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample Type:</b> DRINKING WATER	
<b>Marks on Sample:</b> Location: Hisri (New) - Drinking Water.	
<b>Sample collected on:</b> 07.07.2020	

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
1	Colour	Hazen	<1	5 Max	APHA 22 <sup>nd</sup> 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	0.2	1 Max	APHA 22 <sup>nd</sup> Ed. 2012, 2130-B, 2-13
5	pH	--	6.8	6.5-8.5	APHA 22 <sup>nd</sup> Ed. 2012, 4500-H+ -B, 4-92
6	Free Chlorides (Residual)	mg/l	<0.5	0.2 min	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-G, 4-69
7	Total Dissolved Solids	mg/l	133	500 max	IS 3025 (Part 16): 1984, Reaffirmed 2006
8	Monochloramines	mg/l	<0.05	--	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CIG, 4-69
9	Dichloramines	mg/l	<0.05	--	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CIG, 4-69
10	Total hardness (as CaCO <sub>3</sub> )	mg/l	32.6	200 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-CIG, 4-69
11	Alkalinity Total (as CaCO <sub>3</sub> )	mg/l	25.9	200 max	IS 3025 (Part 237): 1986, Reaffirmed 2009
12	Chloride (as Cl)	mg/l	6.0	250 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-Cl-b, 4-72
13	Sulphate (as SO <sub>4</sub> )	mg/l	4.1	200 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-so-4-e, 4-190





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JULY 2020

## Continuation Sheet

MEEPL/AUG/0305/2020-21

Sl. No.	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method reference
14	Nitrate (as NO <sub>3</sub> )	mg/l	1.5	45 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-NO <sub>3</sub> -E, 4-125
15	Fluoride (as F)	mg/l	0.14	1 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-FB & D, 4-84, 4-87
16	Boron (as B)	mg/l	0.10	0.5 max	APHA 22 <sup>nd</sup> Ed. 2012, 4500-BB, 4-25
17	Calcium (as Ca)	mg/l	25	75 max	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Ca-B, 3-67
18	Magnesium (as Mg)	mg/l	1.5	30 max	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Mg-B, 3-84
19	Ammonical Nitrogen/Total Ammonia	mg/l	<0.1	--	APHA 22 <sup>nd</sup> Ed. 2012, 4500-NH <sub>3</sub> -F, 4-115
20	Iron (as Fe)	mg/l	0.15	0.3 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
21	Manganese (as Mn)	mg/l	N.D	0.1 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
22	Aluminium (as Al)	mg/l	0.01	0.03 max	APHA 22 <sup>nd</sup> Ed. 2012, 3500-Al-B, 3-61
23	Cadmium (as Cd)	mg/l	N.D	0.003 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
24	Chromium Total (as Cr)	mg/l	N.D	0.05 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
25	Copper (as Cu)	mg/l	N.D	0.05 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
26	Lead (as Pb)	mg/l	N.D	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
27	Zinc (as Zn)	mg/l	0.02	5 max	APHA 22 <sup>nd</sup> Ed. 2012, 3111-B, 3-18
28	Arsenic (as As)	mg/l	<0.01	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3114-B, 3-18
29	Selenium (as Se)	mg/l	N.D	0.001 max	APHA 22 <sup>nd</sup> Ed. 2012, 3112-B, 3-18
30	Mercury (as hg)	mg/l	N.D	0.01 max	APHA 22 <sup>nd</sup> Ed. 2012, 3114-B, 3-18
31	Nickel (as Ni)	mg/l	<0.02	0.02 max	APHA 22 <sup>nd</sup> 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 <sup>nd</sup> ED. 2012, 4500-CNC & 4-39 & 4-44
34	Anionic detergents as MBAS	mg/l	<0.1	0.2 max	APHA 22 <sup>nd</sup> ED. 2012, 5540-C.C & 5-53
35	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/l	N.D	0.001 max	APHA 22 <sup>nd</sup> ED. 2012, 5530-B & C 5-4753
36	Polynuclear aromatic hydrocarbons (PAH)	mg/l	N.D	0.0001 max	APHA 22 <sup>nd</sup> 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 <sup>nd</sup> ED. 2012, 4500-S2-C 4-175 & F 4-178





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

JULY 2020

## Continuation Sheet

MEEPL/AUG/0305/2020-21

S.No	Parameters	Unit	Result	Acceptable Limit (IS10500:2012)	Method Reference
<b>Microbiological Analysis</b>					
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
<b>Pesticides Residues</b>					
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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**Mahabal Enviro Engineers Pvt. Ltd.**  
At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,  
District – Ranchi 834009

## HISRI (NEW) BAUXITE MINE - ENVIRONMENTAL MONITORING REPORT

AUGUST 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE







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## CONTENT

LOCATION - HISRI (NEW) BAUXITE MINE	
AMBIENT AIR QUALITY - CORE ZONE	
1	Near Water Pump
2	Near Old Rest Shelter
3	Near Old Plantation (North West Corner)
4	Hisri New (Southern Area)





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

AUGUST 2020

<b>Report no:</b> MEEPL/SEP/0332/2020-21	<b>Date:</b> 15 <sup>th</sup> September, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Water Pump</b>	
<b>Sample collected on:</b> 07.08.2020	

LOCATION / IDENTIFICATION: Near Water Pump				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	18.4
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	13.3
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.7
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	1.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	5.4
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.06
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.5
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.6
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	0.4
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.11

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

AUGUST 2020

<b>Report no:</b> MEEPL/SEP/0333/2020-21	<b>Date:</b> 15 <sup>th</sup> September, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Rest Shelter	
<b>Sample collected on:</b> 07.08.2020	

LOCATION / IDENTIFICATION: Near Old rest Shelter				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	14.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	8.2
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.6
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	2.2
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	7.1
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.05
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.3
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.7
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.5
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

AUGUST 2020

<b>Report no:</b> MEEPL/SEP/0334/2020-21	<b>Date:</b> 15 <sup>th</sup> September, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Plantation (North West Corner)	
<b>Sample collected on:</b> 07.08.2020	

LOCATION / IDENTIFICATION: Near Old Plantation (North West Corner)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	12.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	8.9
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.3
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	1.4
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.2
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.03
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.06
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	0.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.2
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.15

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

AUGUST 2020

<b>Report no:</b> MEEPL/SEP/0335/2020-21	<b>Date:</b> 15 <sup>th</sup> September, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: Lohardaga	
Postal Code: 835203	
State: Jharkhand	
Country: India	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample: Location: <b>Hisri New (Southern Area)</b>	
<b>Sample collected on:</b> 07.08.2020	

LOCATION / IDENTIFICATION: Hisri New (Southern Area)				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	15.3
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	11.6
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.5
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.7
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.3
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.5
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.14
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.3
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.7
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.4
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.06

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

AUGUST 2020

<b>Report no:</b> MEEPL/SEP/0324/2020-21	<b>Date:</b> 15 <sup>th</sup> September, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Daldaliya Village</b>	
<b>Sample collected on:</b> 05.08.2020	

LOCATION / IDENTIFICATION: Near Daldaliya Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	19.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	9.8
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.1
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.7
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	1.5
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	6.2
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.04
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.3
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.6
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.3
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.06

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
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Hindalco Industries : Bagru

Environmental Monitoring Report

AUGUST 2020

<b>Report no:</b> MEEPL/SEP/0325/2020-21	<b>Date:</b> 15 <sup>th</sup> September, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Aditya School Gangupara	
<b>Sample collected on:</b> 05.08.2020	

LOCATION / IDENTIFICATION: Aditya School Gangupara				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	15.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	7.3
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.5
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	9.6
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.06
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.7
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.1
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.4

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
 SENIOR EXECUTIVE





# Mahabal Enviro Engineers Pvt. Ltd.

**Branch Office:**

At Booty, Near PHED Colony, Behind Pump House, PO – RMCC, District – Ranchi 834009,  
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Hindalco Industries : Bagru

Environmental Monitoring Report

AUGUST 2020

<b>Report no:</b> MEEPL/SEP/0326/2020-21	<b>Date:</b> 15 <sup>th</sup> September, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Ropeway Unloading Station	
<b>Sample collected on:</b> 05.08.2020	

LOCATION / IDENTIFICATION: Ropeway Unloading Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	22.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	18.7
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.9
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.6
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	2.9
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	7.2
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.13
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.9
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.1
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.16

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Hindalco Industries : Bagru

Environmental Monitoring Report

AUGUST 2020

<b>Report no:</b> MEEPL/SEP/0327/2020-21	<b>Date:</b> 15 <sup>th</sup> September, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b> Client Address: Lohardaga Postal Code: 835203 State: Jharkhand Country: India Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b> Marks on Sample: Location: <b>Ropeway Angle Station</b> <b>Sample collected on:</b> 05.08.2020	

LOCATION / IDENTIFICATION: Ropeway Angle Station				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	21.4
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	12.6
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.3
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.9
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.6
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	7.1
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.17
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.4
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.19

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 Porthugese Church, Near Dindayal Upadhyay Garden,  
Gokhale Road (North), Dadar (West), Mumbai 400 028. Tel: +91 22 24370520 / 6672.

E: [ecoventures.mumbai@gmail.com](mailto:ecoventures.mumbai@gmail.com) / [ecoventures@eco-ventures.in](mailto:ecoventures@eco-ventures.in)

**Mahabal Enviro Engineers Pvt. Ltd.**  
At Booty, Near PHED Colony, Behind Pump House, PO – RMCC,  
District – Ranchi 834009

## HISRI (NEW) BAUXITE MINE - ENVIRONMENTAL MONITORING REPORT

SEPTEMBER 2020

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey  
SENIOR EXECUTIVE





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## CONTENT

LOCATION - HISRI (NEW) BAUXITE MINE	
AMBIENT AIR QUALITY - CORE ZONE	
1	Near Water Pump
2	Near Old Rest Shelter
3	Near Old Plantation (North West Corner)
4	Hisri New (Southern Area)





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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

SEPTEMBER 2020

<b>Reports no:</b> MEEPL/OCT/0372/2020-21	<b>Date:</b> 16 <sup>th</sup> October, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Water Pump</b>	
<b>Sample collected on:</b> 05.09.2020	

LOCATION / IDENTIFICATION: Near Water Pump				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	36.1
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	16.8
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.2
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.7
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.1
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	7.2
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.12
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.03
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.3
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.20

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

SEPTEMBER 2020

<b>Reports no:</b> MEKPL/OCT/0373/2020-21	<b>Date:</b> 16 <sup>th</sup> October, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Near Old Rest Shelter	
<b>Sample collected on:</b> 05.09.2020	

LOCATION / IDENTIFICATION: Near Old rest Shelter				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	30.7
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	12.3
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.3
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.7
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	7.1
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.05
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.3
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.5
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.2
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.17

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

SEPTEMBER 2020

Reports no: MEEPL/OCT/0374/2020-21

Date: 16<sup>th</sup> October, 2020

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 Old Plantation (North West Corner)

Sample collected on: 05.09.2020

### LOCATION / IDENTIFICATION: Near Old Plantation (North West Corner)

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	21.7
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	10.2
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.4
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.6
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.3
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	6.1
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.05
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.04
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.4
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.12

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Hindalco Industries : Hisri (New)

Environmental Monitoring Report

SEPTEMBER 2020

Reports no: MEEPL/OCT/0375/2020-21

Date: 16<sup>th</sup> October, 2020

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: Hisri New (Southern Area)

Sample collected on: 05.09.2020

### LOCATION / IDENTIFICATION: Hisri New (Southern Area)

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	25.3
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	12.7
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.8
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.3
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.6
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.5
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.11
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.05
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.9
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.2
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.3
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.26

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Hindalco Industries : Bagru

Environmental Monitoring Report

SEPTEMBER 2020

<b>Reports no:</b> MEKPL/OCT/0364/2020-21	<b>Date:</b> 16 <sup>th</sup> October, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
Client Name: <b>Hindalco Industries Limited</b>	
Client Address: <b>Lohardaga</b>	
Postal Code: <b>835203</b>	
State: <b>Jharkhand</b>	
Country: <b>India</b>	
Sample Type: <b>AMBIENT AIR QUALITY MONITORING</b>	
Marks on Sample Location: <b>Near Daldaliya Village</b>	
<b>Sample collected on:</b> 03.09.2020	

LOCATION / IDENTIFICATION: Near Daldaliya Village				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	18.4
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	10.1
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.7
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.2
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	4.6
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	5.2
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.05
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.4
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.3
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.2
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.17

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Hindalco Industries : Bagru

Environmental Monitoring Report

SEPTEMBER 2020

<b>Reports no:</b> MEKPL/OCT/0365/2020-21	<b>Date:</b> 16 <sup>th</sup> October, 2020
<b>Sample described by customer:</b> AMBIENT AIR QUALITY MONITORING	
<b>Client Name:</b> Hindalco Industries Limited	
<b>Client Address:</b> Lohardaga	
<b>Postal Code:</b> 835203	
<b>State:</b> Jharkhand	
<b>Country:</b> India	
<b>Sample type:</b> AMBIENT AIR QUALITY MONITORING	
<b>Marks on Sample:</b> Location: Aditya School Gangupara	
<b>Sample collected on:</b> 03.09.2020	

LOCATION / IDENTIFICATION: Aditya School Gangupara				
Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	17.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	9.5
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.6
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.8
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.3
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	6.4
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.04
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.02
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.5
10.	Arsenic (As)	ng/m <sup>3</sup>	06	0.8
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.6
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.11

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Hindalco Industries : Bagru

Environmental Monitoring Report

SEPTEMBER 2020

Reports no: MEEPL/OCT/0366/2020-21

Date: 16<sup>th</sup> October, 2020

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: Ropeway Unloading Station

Sample collected on: 03.09.2020

**LOCATION / IDENTIFICATION: Ropeway Unloading Station**

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	42.8
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	20.9
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.6
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	3.2
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	5.7
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	7.2
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.12
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.05
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	2.6
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.9
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	1.5
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.22

For Mahabal Enviro Engineers Pvt. Ltd.

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Hindalco Industries : Bagru

Environmental Monitoring Report

SEPTEMBER 2020

Reports no: MEEPL/OCT/0367/2020-21

Date: 16<sup>th</sup> October, 2020

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: **Ropeway Angle Station**

Sample collected on: 03.09.2020

### LOCATION / IDENTIFICATION: Ropeway Angle Station

Sl. No.	PARAMETERS	UNIT	Standard Limit	Concentration
01.	Particulate Matter (size less than 10 µm) PM <sub>10</sub>	µg/m <sup>3</sup>	100	37.2
02.	Particulate Matter (size less than 2.5 µm) PM <sub>2.5</sub>	µg/m <sup>3</sup>	60	17.1
03.	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	2.5
04.	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	1.8
05.	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	400	3.1
06.	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	180	8.7
07.	Carbon Monoxide (CO)	mg/m <sup>3</sup>	02	0.12
08.	Lead (Pb)	µg/m <sup>3</sup>	1.0	0.05
09.	Nickel (Ni)	ng/m <sup>3</sup>	20	1.8
10.	Arsenic (As)	ng/m <sup>3</sup>	06	1.1
11.	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	05	2.6
12.	Benzo (a) Pyrene	µg/m <sup>3</sup>	01	0.19

For Mahabal Enviro Engineers Pvt. Ltd.

Vijay Pandey

SENIOR EXECUTIVE



**Annexure 1**

<b>Piezometer Data Lease wise from April 20 to Sept 20</b>	
<b>MONTH</b>	<b>HISRI NEW</b>
Apr-20	35.12
May-20	35.07
Jun-20	35.02
Jul-20	34.95
Aug-20	34.25
Sep-20	34.18

## Annexure-2

### BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2020-21

The composite cost during the year 2020-21 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Pakhar (115.13 ha), Pakhar (15.58 ha), Pakhar (109.507 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Serengdag (140.06 ha), Serengdag (155.81 ha), Jalim & Sanai (12.14 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.97 ha) Kujam II (157.38 ha), Bagru (75.41 ha), Hisri New (14.55 ha), Chiro kukud (152.57 ha), Orsa pat (196.36 ha), Bhusar (65.31 ha) and Bimarla Bauxite Mines (134.52 ha).

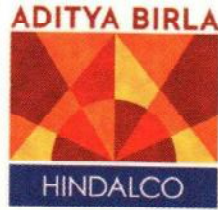
S No	Description	Budget (in Rupees) FY 2020-21	Actual (in Rupees) FY 2020-21 (From April'20 to September'20)
1	Pollution Control & Environment monitoring	38,21,524.00	23,85,921.05
2	Reclamation/ Back filing & Rehabilitation**	3,21,50,000.00	2,21,40,257.00
3	Green belt, Plantation & Water spraying arrangement	49,25,800.00	27,10,225.84
4	Rural Development	3,20,21,451.00	1,06,39,819.42

\*\*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 Hisri New Bauxite Mine (Area 14.55 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. Gauri Shankar Prasad (Coordinator)
2. Dr. Chitra Mandal (Medical Officer)- Member
3. Mr. Ashish Kumar (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 read "Basudev Gangopadhyay", with a stylized flourish at the end.

**Basudev Gangopadhyay**  
**Senior Executive (Quality & Environment)**

## Annexure 4

Production, Mined Out, Back Filled and Over Burden removal from April'20 to September'20								
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	65.21	280000	11.07.1981 to 31.03.2030	13267	0.073	0.11	10154.95
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	28869	0	0.52	16795.65
4	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	21915	0.70	1.28	19090.63
5	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	45243	0.953	1.92	38334.18
6	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	49710	0.947	1.00	60021.340
7	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	84400	5.08	3.59	198360.97
8	Shrengdag A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	46854	2.08	1.76	180936.53
9	Shrengdag B Bauxite Mine	140.07	100000	04.10.1978 to 31.03.2030	NIL	NIL	NIL	NIL
10	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	18420	0.27	0.22	7140.08

## 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	66500	0.50	0.66	84577.24
<b>Minerals &amp; Minerals Limited</b>								
16	Pakhar (15.58)	15.58	60000	28.04.1965 to 31.03.2030	24600	0.30	0.12	29253.14
17	Pakhar (109.507)	109.507	280000	26.07.2008 to 25.07.2058	130500	1.37	0.37	120240.90
18	Bimarla Bauxite Mine	134.37	300000	18.07.2009 to 17.07.2059	46250	2.35	1.00	106168

\*Static information about the mines included in the above table



Basudev Gangopadhyay  
Head (Geology & Environment)





HINDALCO MANAGEMENT FRAMEWORK  
*excellence by design*

## ENVIRONMENT POLICY

We, at Hindalco Industries Limited, operating across the process chain from mining to semi-fabricated products in non-ferrous metals, will strive to continually improve our environmental performance for sustainable operations and responsible growth globally, by integrating sound environmental systems & practices and Pollution Prevention approach.

To achieve this, we shall:

- Continue to comply with all applicable legal and other requirements on environment.
- Continually improve environmental performance by strengthening the Environmental Management System conforming to national /international standards, including setting up and reviewing targets and measuring, monitoring and reporting their progress.
- Allocate sufficient resources such as organisational structure, technology and funds for implementation of the policy and for regular monitoring of performance.
- Adopt pollution prevention approach for all our processes; enhance material efficiency and achieve high productivity.
- Conserve key resources like electricity, coal, water, oil, and raw materials, by promoting efficient technologies and manufacturing process improvements, water conservation programmes, and efficient use of raw materials.
- Adopt energy efficient and cleaner technologies based on techno-economic viability, appropriate to the region in which we operate, and in line with our growth and diversification plans.
- Promote the principles of waste prevention, reduction, reuse, recycling and recovery to minimize waste generation and strengthen the practices for management of wastes.
- Work in partnership with regulatory authorities, relevant suppliers, contractors, distributors and logistics partners and all other stakeholders, as applicable, to understand and initiate improvement actions.
- Engage with internal and external stakeholders including key business partners such as joint venture partners, licensees and outsourcing partners and wider communities, to broaden our understanding of environmental priorities and initiate actions on key environmental challenges.
- Adapt environmental performance over life cycle as an important input to the decision-making processes in the organization.
- Raise environmental awareness at all levels of our operations, through training and effective communication, participation and consultation.
- Communicate this Policy within the Organization. Develop and follow appropriate communication system to inform other stakeholders, as applicable, about our environmental commitment and performance.
- Conduct environmental, health and safety due diligence before undergoing any mergers and acquisitions.

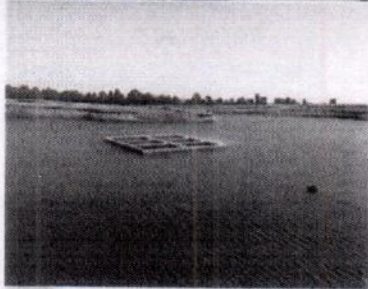
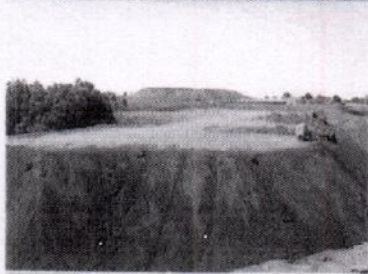
This policy shall be made available to all employees, suppliers, customers, community and other stakeholders, as appropriate.



**SATISH PAI**  
**MANAGING DIRECTOR**

Date : 30 June 2020

**HINDALCO INDUSTRIES LIMITED**



## QUALITY, ENVIRONMENT, OCCUPATIONAL HEALTH & SAFETY POLICY

We, at "Hindalco Industries Limited" are committed to demonstrate excellence in Quality, Environment and Occupational Health & Safety for sustainable development

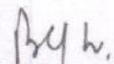
To achieve this, we shall:

- Ensure customer satisfaction by providing value added products and services;
- Continually establish systems, procedures and best practices with technological interventions;
- Optimize resource consumption particularly- raw materials, energy, water oil and promote pollution prevention;
- Commit to continual improvement by strengthening the Integrated Management System;
- Nurture and sustain safe and healthy work environment;
- Commit to protection of environment including prevention of pollution by reclamation and rehabilitation of mined out areas by utilization of solid waste and developing green belt in the area.
- Comply with applicable legislation in letter and spirit;
- Strengthen competence of employees and business associates through continuous training;
- Commit to the control of Quality & Environment risks through a hierarchy of control.

We shall communicate and make this policy available to all stakeholders

Lohardaga

Date: 24-03-2018

  
B.K.Jha

President, Jharkhand Mines

HINDALCO INDUSTRIES LIMITED  
MINES DIVISION