



Hindalco Industries Limited
(Muri Works)

Environment Clearance Compliance Report
Period: April to September 2018



No. Hindalco/Env/2018/104

20th November, 2018

To,
The In-charge, Regional Office (Eastern-Central Zone),
Ministry of Environment, Forest and Climate Change,
Bungalow No. A-2, Shyamali Colony, Ranchi – 834002

Sub.: Submission of environment clearance compliance report for the period from April to September, 2018

Ref.: MoEF&CC environment clearance letter No. J-11011/131/2005-IA.II (I) dated 20.09.05

Dear Sir,

This is with reference to the aforesaid subject regarding environment clearance granted by your esteemed office vide letter No. J-11011/131/2005-IA.II (I) dated 20.09.2005.

In this regard, hereby we are pleased to submitting six monthly environment clearance compliance report for the period from **April to September, 2018** for our Hindalco Industries Limited, Muri Works.

We are also sending you soft copy of report through e-mail address: ro.ranchi-mef@gov.in for your ready reference please.

Thanking You,

Your's Faithfully

For & On Behalf of

Hindalco Industries Limited - Muri Works

Prasanta Bose
(Prasanta Bose)
Technical Head

Encl.: EC compliance report

Copy to:

1. The Director, Ministry of Environment, Forest and Climate Change, Paryavaran Bhawan, CGO Complex, Lodi Road, New Delhi-110003
2. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
3. The In-charge, Central Pollution Control Board, (Eastern Zonal Office), Southern Conclave, Block 502, 5th and 6th Floors, 1582 Rajdanga Main Road, Kolkata-700107
4. The Member Secretary, Jharkhand Pollution Control Board, T.A. Bhawan, HEC Complex, Dhurwa, Ranchi
5. The Regional Officer, Jharkhand State Pollution Control Board, Industrial Area, Tupudana, Ranchi-834003

Hindalco Industries Limited

Muri Works: P.O. Chotamuri - 835 101, Dist. - Ranchi, Jharkhand, India

T: +91 6522 244233, 9708036910 | E: hindalco.muri@adityabirla.com | W: www.hindalco.com

Registered Office: Ahura Centre, 1st Floor, B Wings, Mahakali Caves Road, Andheri (East), Mumbai - 400093. T: +91 22 66917000 | F: +91 2266917001

Corporate ID No.: L27020MH1958PLC011238



A. SPECIFIC CONDITIONS

Sr. No	Condition	Compliance Status
(i)	<p>The gaseous emissions from various units shall conform to the standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry, its size and location. At no time the emission level should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency. Ambient Air Quality data should be regularly monitored and records maintained and report submitted to the Ministry /CPCB/Jharkhand State Pollution Control board once in six months.</p>	<p>Pollution control equipments have installed to conform the prescribed emission standard. Online Continuous Emission Monitoring System (OCEMS) have installed and attached with Refinery & Power Plant Boiler stacks to online continuous emission monitoring and uninterruptedly report being transferred to the CPCB & JSPCB through dedicated lease line server.</p> <p>Ambient air quality regularly monitored and report submitted to the MOEF&CC, CPCB & JSPCB and its Regional Offices with six monthly EC compliance report. Ref. Table-1 of Annexure-1.</p> <p>Moreover, continuous online CAAQMS stations will be installed by Jan 2019 and will be connected to CPCB/JSPCB server.</p>
(ii)	<p>There shall be no discharge of process effluent. As reflected in the EIA/EMP report, the process waste water generation shall increase from 528m³/d to 5092m³/d. About 802m³/d of waste water will be recycled. Remaining 4290m³/d will be recycled back to the process after treatment in the ETP. In addition, efforts shall be made to re-use wastewater from the existing plant. The domestic wastewater shall be treated in STP to meet prescribed standards. The company shall undertake water conservation measures by recycling of power plant blow downs and domestic effluent in the refinery process. The storm water management shall be by use of water for sprinkling, recycling to process, ash moistening and plant keep up.</p>	<p>There is no any process effluent discharged and after treatment in ETP it is being recycled and reuse in the process. The domestic wastewater generated from residential colony is after treatment in STP being used for the plantation purpose as well as necessary initiatives have been taken towards water conservation.</p> <p>The quality of effluent and domestic wastewater is being maintained as per the prescribed standards and online effluent quality monitoring system installed in ETP & STP and real time data is being transferred to the JSPCB & CPCB server.</p>
(iii)	<p>In plant control measures for checking fugitive emission from spillage/raw materials handling shall be provided. Water sprinklers shall be provided to control the fugitive emissions from the active red mud disposal areas and ash coverage in inactive areas.</p>	<p>In plant to checking the fugitive emissions, dust suppression system are installed in bauxite handling area and coal storage yard.</p> <p>To control the fugitive emission from RMP following systems are already in place:</p> <ul style="list-style-type: none"> ▪ Dust suppression system with water sprinklers along the road and periphery of RMP. ▪ Dedicated water tanker in RMP area

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		and road to suppress dust. ▪ Green belt developed in by growing grass on RMP by hydro-seeding technology (from USA).
(iv)	The particulate emissions from the calciners shall be controlled by installation of electrostatic precipitator. The particulate emissions shall not exceed 50 mg/Nm ³ . The company shall install bag filters to control the emissions from the alumina kiln. All the boiler stacks shall be provided with stack height as per the CPCB guidelines. The boiler and Calciner stacks shall be equipped with continuous monitoring device to check SPM emission levels.	Pollution control equipment has installed and attached with Calciner & Boiler stacks to control the emission as per the prescribed standard. The height of the stack provided as per the CPCB guidelines. The Boiler & Calciner stacks equipped with the continuous monitoring devices to check the PM (Calciner stack), PM, SO ₂ & NO _x (in CGPP stack) and real time data being transferred to the CPCB & JSPCB server.
(v)	The company shall adopt dry disposal system for red mud disposal and shall provide Geo membrane lining in red mud storage area. The ground water quality shall be monitored at various depths around the red mud ponds and action plan in this regard shall be submitted to the Ministry. The company shall rehabilitate the abandoned red mud pond areas with development of green cover.	Dry mud disposal system is being adopted for Red Mud filtration by installing New Pressure Filter Technology. In the RMP area, a well designed system is installed to take care of any Leachate, seepage and runoff water. Pre & Post Monsoon Hydrological study is being done. In the year 2017 pre & post monsoon and in this year Pre Monsoon hydrological study was conducted by ISM, Dhanbad for ground water sources in Muri and as per the report all the parameters are well within the limit. Abandoned red mud pond (RMP2) has rehabilitated and covered by development of green cover.
(vi)	As and when the new pond for red mud disposal is to be constructed, it shall be lined with geo lining to prevent leaching of effluent into the ground water.	Since grant of EC in 2005, there is no new pond constructed for storage of Red Mud. We are using the existing Red Mud Pond for storage. This pond is in operation since 1991. Compliance condition on Geo Membrane Lining of Red Mud Pond will be adhered to while development of new pond for storage of Red Mud.
(vii)	Green belt of adequate width and density shall be developed in 5 ha. of area in addition to 48.97 ha of plant area already under green belt as per the CPCB guidelines.	Plantation is an ongoing activity and till date area covered under greenery 110 acres and survival rate is 80-85%.
(viii)	Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the	Occupational Health Surveillance of the workers has been regularly being done and record maintained.

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	Factories Act.	
(ix)	All the recommendations of the Charter for Corporate Responsibility for Environment Protection (CREP) for the aluminium sector shall be strictly implemented.	Charter for Corporate Responsibility for Environment Protection (CREP) as applicable for our process is being complied and detailed report is enclosed as Annexure – 2.
(x)	The environmental clearance for the expansion of alumina refinery and establishment of coal based co-generation proposal is subject to the condition that the company shall not undertake any construction or operation of the proposed expansion activity till the environmental clearance for the linked mining proposal is obtained.	The same is being complied.

B. GENERAL CONDITIONS:

Sr. No	Condition	Compliance Status
(i)	The project authorities must strictly adhere to the stipulations made by the Jharkhand State Pollution Control Board and the State Government.	Point noted and it is being adhered.
(ii)	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	it is being complied as there is no further capacity expansion done till now.
(iii)	Adequate ambient air quality-monitoring stations should be established in the downward direction as well as where maximum ground level concentration of SPM, SO ₂ and NO ₂ are anticipated in consultation with the State Pollution Control Board. Data on ambient air quality, fugitive emission and stack emissions shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the State Pollution Control Board/Central Pollution Control Board once in six months.	Ambient air quality monitoring station have established with the consultation of SPCB and monitoring done on regular basis. Please refer the Table No. 1, 2 & 3 of Annexure - 1 for data on Ambient Air Quality, Fugitive emission and Stack emissions monitoring respectively.
(iv)	Industrial waste water shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 th May, 1993 and 31 st December, 1993 or as amended from time to time. The treated wastewater should be utilized for plantation purpose.	The quality of waste water is being conformed as per the prescribed standards and recycled in the process. Domestic waste water after treatment being used for the plantation purpose. The online effluent quality monitoring system installed in ETP & STP and real time data is being transferred to the JSPCB & CPCB servers.
(v)	The overall noise levels in and around the plant area shall be kept well within the standard (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of	The noise control measures has taken and maintained the noise level within the prescribed limit. The ambient noise levels are maintained as per the EPA Rule, 1989.

	noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (night time).																						
(vi)	The project proponent shall also comply with the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	<p>All the necessary measures have been adopted towards environmental protection and socio-economic welfare of neighbouring area is being carried out under company's CSR activities. The details are given as below.</p> <table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Description</th> <th>Expenditure (in Lacs)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Education</td> <td>71.04</td> </tr> <tr> <td>2</td> <td>Health care</td> <td>14.67</td> </tr> <tr> <td>3</td> <td>Sustainable Livelihood</td> <td>11.81</td> </tr> <tr> <td>4</td> <td>Infrastructure Develop.</td> <td>0.15</td> </tr> <tr> <td>5</td> <td>Social Change</td> <td>10.52</td> </tr> <tr> <td colspan="2">Total in Lacs</td> <td>108.19</td> </tr> </tbody> </table>	Sr. No.	Description	Expenditure (in Lacs)	1	Education	71.04	2	Health care	14.67	3	Sustainable Livelihood	11.81	4	Infrastructure Develop.	0.15	5	Social Change	10.52	Total in Lacs		108.19
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(vii)	The project authorities will provide requisite funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Requisite fund have been provided for environment protection measures and it has not been diverted for any other purpose. During April to September, 2018 the amount spent on the environment protection measures are given in the Annexure - 3 .																					
(viii)	The Regional Office of this Ministry at Bhubaneswar/Central Pollution Control Board/State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Point noted, the monitored data along with EC compliance report is being submitted once in an every six month to the concern authorities. Please refer the Annexure – 1 .																					
(ix)	The project proponent should inform the public that the project has been accorded environmental clearance by the ministry and copies of the clearance letter are available with the State Pollution Control board/Committee and may also be seen at website of the Ministry of Environment and Forests at http://envfor.nic.in . This should be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office.	The project has accorded environmental clearance by the ministry has informed to the public by advertisement in two local newspapers namely 'Prabhat Khabar' and 'Hindustan' dtd. 30 th Sep'2005 as well as the copy of the same forwarded to the concern authorities.																					

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(x)	The Project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Point noted and will be complied.
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Table-1: Ambient Air Quality monitoring report (monthly average)

Monitoring Locations →	Sub-Station No.1				Hindalco Football Ground/Union Hall				Red Mud Pond #2			
	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	PM _{2.5}	PM ₁₀	SO ₂	NO ₂
Limit→	60	100	80	80	60	100	80	80	60	100	80	80
Unit of Measurement	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³
Monitored Values in µg/m ³												
April 2018	49.07	71.40	14.60	25.34	50.31	64.89	14.16	24.00	48.75	61.56	12.04	24.14
May 2018	48.39	58.89	13.85	24.11	49.71	61.19	13.41	22.77	47.75	57.20	11.29	22.91
June 2018	42.07	55.19	10.99	20.13	45.89	57.19	10.36	18.72	43.74	53.10	8.89	19.50
July 2018	30.81	48.57	8.74	17.84	36.32	50.67	8.11	15.87	36.49	47.48	7.30	17.21
Aug 2018	25.56	40.07	7.62	12.47	31.07	41.00	7.56	10.50	31.24	40.73	7.20	14.34
Sep 2018	28.18	45.33	8.37	15.43	39.17	48.37	8.22	9.68	35.25	49.54	7.20	13.73

Notes: The abbreviations used in above table shall means as under – PM_{2.5} & PM₁₀ (Particulate Matter), SO₂ (Sulphur Dioxides) & NO₂ (Nitrogen Dioxide).

Table-2: Stack emission monitoring report

Month	Stack Name	Parameter	Limit	Result
Apr-18	Refinery	PM	50 mg/Nm3	37.1
May-18				35.6
Jun-18				29.7
Jul-18				32.1
Aug-18				33.0
Sep-18				38.3

Table-3: CGPP - Boiler stack emission monitoring report

Parameters	PM	SO ₂	NO _x
Limit	100 mg/Nm3	600 mg/Nm3	300 mg/Nm3
Apr-18	68.0	465.1	99.7
May-18	71.8	408.7	93.3
Jun-18	84.8	397.0	111.5
Jul-18	82.9	392.0	94.9
Aug-18	85.0	534.0	100.4
Sep-18	77.2	520.8	53.4

Table-3: Fugitive emission (SPM) monitoring report

Locations	Red Mud Pond (3&4)	Bauxite Handling Area	Coal Handling Area
Limit	1200 µg/m ³	1200 µg/m ³	1200 µg/m ³
Monitored Values in µg/m ³			
Apr-18	735.4	946.7	827.3
May-18	811.0	881.4	818.8
Jun-18	759.8	980.0	608.9
Jul-18	473.3	619.6	587.1
Aug-18	473.3	619.6	587.1
Sep-18	492.8	529.3	494.8

Charter on Corporate Responsibility for Environmental Protection (CREP) action points on red mud

S. No.	Action Points / Recommendations	Targets	Status
6.	Phasing Wet disposal Red Mud utilisation	To achieve minimum 50% solid in red mud by 2005	We have installed 2 no's Pressure filter to get more solid > 72% and enhance pond life.
		A proposal for practical utilization to be prepared by Aluminium Association of India within six months	As you know various research is going on worldwide for the red mud utilization and till date little scope is available for this. We have installed second pressure filter with Chinese technology to increase percentage solid in mud. One number of such pressure filters is already installed, commissioned and operating successfully. We had conducted hydrological study through ISM, Dhanbad. Bauxite Residue (Red Mud) is transported by dumpers to own red mud pond by a process called DMS (Dry Mud Stacking). During the FY 2017-18; 27613 MT of Bauxite Residue sold out to cement plant to M/s. ACC Cement Chaibasa & in the current financial year till Sep'18 14727 MT despatched to cement plants.

EC Compliance Status Report**Ref. No. J-11011/131/2005-IA.II (I) dated 20.09.05****Annexure-3****Expenditure on environment protection measure during April to September, 2018**

Cost Centre	Descriptions	Amount in Lacs
5653	Tree plantation in plant premises and around	11.33
5654	Operation of Sewage and Sludge treatment plant (AMC)	4.23
5657	Water sprinkling on road, road cleaning, tankers maintenance and repairing	5.44
5660	Environment Monitoring Contract Labour (Environment Cell)	1.88
7441	Monitoring of Emission by Third Party to standardise the system	0.88
7442	Specific Env, Cell Operating supplies (Earlier this was kept & booked in Laboratory for chemicals, operating supplies & other requirements)	0.10
14WM	EOHS (WM Scope)	3.54
31PR	Statutory Fees for Pollution Control	1.66
277N	ISO audit & IMS (QMS,EMS and OHSAS)	1.48
37WM	Third Party Analysis	0.10
Total expenditure in lacs		30.64
