

Letter No: AA/E&S/EC/2018/351

Date: 30/05/2018

To

The Director  
Eastern Regional Office  
Ministry of Environment & Forests  
A/3, Chandrashekharpur  
Bhubaneswar - 750 023 (Odisha)

Sub: Submission of Six Monthly Compliance from Oct' 17 to March' 18.

Ref: Environmental Clearance Letter No: J-11011/136/2009-IA.I (1), dated 29/11/2012  
& J- 11011/136/2009-IA.II (1), Dated 14 June 2013.

Dear Sir,

As a part of the compliance to the Environmental Clearance accorded by MoEFCC to Aditya Aluminium for 0.72 MTPA Smelter and 1650 MW CPP at Lapanga in Sambalpur district, please find enclosed herewith the six monthly compliance reports of aluminium smelter and captive power plant for the period October'17 to March'18.

Kindly acknowledge receipt of the reports.

Thanking You

Yours faithfully  
For Aditya Aluminium

A handwritten signature in blue ink, appearing to read 'K N Pandey', is written over a printed name.

(K N Pandey)

President & Unit Head

Copy for kind information to:

1. The Member Secretary, SPCB, Bhubaneswar
2. The Regional Director, Zonal Office of CPCB, Kolkata
3. The Regional Officer, SPCB, Sambalpur

Hindalco Industries Limited

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T: +91 663 2536 247 | Fax: +91 663 2536 499 | E: hindalco@adityabirla.com | W: www.hindalco.com  
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Corporate ID No.: L27020MH1958PLC011238

(Six Monthly Compliance: October 2017 – March 2018)

**STATUS OF IMPLEMENTATION OF CONDITIONS STIPULATED IN ENVIRONMENTAL CLEARANCE FOR 7,20,000 TPA ALUMINIUM SMELTER& 1650 MW CAPTIVE POWER PLANT FOR ADITYA ALUMINIUM BY M/S HINDALCO INDUSTRIES AT LAPANGA, SAMBALPUR, ORISSA.**

**REF: Environmental Clearance Letter No: J-11011/136/2009-IA.I (1), Dated 29<sup>th</sup> November 2012 & J-11011/136/2009-IA.II (1), Dated 14 June 2013 From MOEF, GOI.**

| Sr. No. | Specific Conditions  | Compliance  |
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| i)      | The streams passing through the project site shall not be disturbed w.r.t their quantity and quality of flow   | The streams passing through the project site will not be disturbed.   |
| ii)     | Alumina shall be obtained from those refineries, which have been accorded environmental clearance by the Ministry of Environment and Forests.  | Alumina will be obtained from refineries which have been accorded environmental clearance. At Present, the Alumina is obtained from Utkal Alumina International Limited (UAIL), Rayagada Distt. and it has been accorded environmental clearance from MoEFCC.   |
| iii)    | <p>The gaseous emissions (PM, SO<sub>2</sub>, NO<sub>x</sub>, PAH, HC, VOCs and Fluoride) from various process units shall conform to the standards prescribed by the concerned authorities from time to time. The SPCB may specify more stringent standards for the relevant parameters keeping in view the nature of the Industry and its size and location. At no time the emissions 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.</p> <p>The particulate emissions from the bake oven plant shall not exceed 50 mg/Nm<sup>3</sup>.</p> | <p>Online Monitoring equipments have been installed at the outlet of following stacks for monitoring of particulate matter and gaseous emissions. The online data has been connected to the Servers of OSPCB and CPCB.</p> <p>a) Smelter GTC 1 &amp; 2- 2 Nos.<br/>b) Smelter FTC 1 &amp; 2- 2 Nos.<br/>c) CPP Unit 1 to 6 - 6 Nos.</p> <p>Particulate matter emission from the bake oven does not exceed the prescribed limit of 50 mg/Nm<sup>3</sup> (Stack monitoring report attached as <i>Annexure-1</i>).</p> |
| iv)     | Particulate fluoride emissions should not be more than 0.65 mg/Nm <sup>3</sup> and fugitive particulate fluoride emissions from pot room should not be more than 1.85 mg/Nm <sup>3</sup> .   | Online monitoring equipment at Gas Treatment Centre (GTC) and Fume Treatment Centre (FTC) installed for monitoring of Hydrogen Fluoride (HF), Particulate Matter (PM). The particulate fluoride emission from the gas treatment system is within the prescribed standard. The monitoring report is attached as <i>Annexure-2</i> .  |

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| v)    | The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) should not exceed 2 mg/Nm <sup>3</sup> . The data on PAH should be monitored quarterly and report submitted regularly to the Ministry/Regional Office at Bhubaneswar and SPCB.  | The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) are being monitored on quarterly basis and found within the standard. The monitoring report is enclosed as <i>Annexure-1</i> .   |
| vi)   | In plant, control measures like fume extraction and dust extraction system for controlling fugitive emissions from all the materials handling/transfer points shall be provided to control dust emissions.<br><br>Fugitive Fluoride emissions from the pot room and in the forage around the smelter complex and the data submitted regularly to the Ministry Regional Office at Bhubaneswar and SPCB.<br><br>Further dry scrubbing system to control the emissions from the pot lines should be provided.   | Fume Extraction Centre (FTC) in Anode Baking furnace, Gas Treatment Plant (GTC) in potlines and bag filters in raw material handling, GAP, Anode Baking, Roding areas, bath recycling, carbon recycling area, butts recycling area, cathode sealing shop etc in smelter area and coal handling, ash handling plant in captive power plant is installed to control fugitive dust emissions.<br><br>HF analyzer installed for Fugitive fluoride monitoring in potrooms for monitoring of Hydrogen Fluoride, the monitoring results attached as <i>Annexure-3</i> . Forage around the smelter is being monitored on quarterly basis and the report is enclosed as <i>Annexure-4</i> .<br><br>Dry scrubbing system provided in gas treatment centre (GTC) to control fugitive emission. |
| vii)  | Electrostatic Precipitators (ESP) will be provided to Captive Power Plant (CPP) to control particulate emissions below 50 mg/Nm <sup>3</sup> .<br><br>The company shall provide bag filters, dry scrubbing system and dust suppression system to control all the emissions including fluoride emissions from all melting and casting units. Tar, Dust and fluoride in the fumes shall be controlled in baking furnace by providing dry scrubber.<br><br>The emissions shall conform to the standards prescribed by the Ministry CPCB/SPCB whichever is more stringent. | Electrostatic Precipitators(ESP) of adequate efficiency is installed in Captive Power Plant (CPP) to restrict particulate emissions below 50 mg/Nm <sup>3</sup> .<br><br>Gas Treatment Centres (GTC) installed attached to each pots in potrooms, 180 nos of pots connected to each GTCs. Bag filters installed in all the material handling & transfer points in Smelter. Fume treatment centre (FTC) installed in Anode Baking Furnace 1 & 2 to treat the tar fumes, dust, gaseous and particulate fluorides in the fumes generated from Anode Baking Furnace.<br><br>The standards prescribed by the Ministry/ CPCB/ SPCB is being adhered.  |
| viii) | Provision for installation of FGD shall be provided for future use.  | Provisional Space has been kept for installation of FGD in future, if required.   |
| ix)   | Three tri-flue and one bi-flue stack of 275 m height with flue gas velocity not less than 22 m/s shall be installed and provided with  | Two (02) numbers of tri-flue stacks of 275 m height is installed in phase-I, another two nos. of stacks will be installed during Phase-II   |

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|     | continuous online monitoring equipment's for SO <sub>2</sub> , NO <sub>x</sub> , and PM <sub>10</sub> .  | <p>construction activities.</p> <p>Continuous emission monitoring system (CEMS) installed for monitoring of SO<sub>2</sub>, NO<sub>x</sub>, and PM in all the units of CPP.</p>  |
| x)  | Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided. | Dust extraction systems (DE) and Dry fog dust suppression (DFDS) system installed in coal handling plant and ash handling system of Captive Power Plant.   |
| xi) | Utilization of 100% fly ash generated shall be made from 4 <sup>th</sup> year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.                         | <p>Ash generated is being utilized by means of supplying to M/s Ultratech Cements, Jharsuguda, M/s ACC, Bargarh and M/s OCL, Rajgangpur for cement manufacturing. Also we are supplying Ash to the brick manufactures and utilizing it for filling the low lying areas inside the Plant with prior approval of OSPCB. The low-lying areas are filled with Ash and subsequently covered with plantation for development of greenbelt.</p> <p>The Ash utilization in 2014-15, 2015-16, 2016-17 was 100%. In the year 2017-18, we have already initiated few action plans and in February and March '18 we have achieved close to 100% utilization. The proposed action plan is stated as below.</p> <ul style="list-style-type: none"> <li>• Increase supply to Cement Plants like M/s Ultratech, Jharsuguda unit; M/s ACC, Bargarh Unit; M/s OCL, Rajgangpur Unit by 80 to 90%.</li> <li>• Installation of brick manufacturing Unit which is under installation (approx. 3 lakhs bricks per month)</li> <li>• Increased Supply to the local brick manufacturing Units (expecting to be doubled)</li> <li>• We have constituted a Team for exploring more areas of Ash utilization like Road making, Abandoned mines/quarry filling, infrastructure projects etc. The Collector &amp; DM, Sambalpur has been requested to provide us permission for filling of abandoned mines and voids available in the region.</li> </ul> <p>Status of ash utilization from April 17 to March 18 is enclosed as Annexure-5.</p> |

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| xii)  | <p>Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized ash shall be disposed-off in the ash pond in the form of slurry. Mercury and other heavy metals (Ag, Hg, Cr, Pbetc) will be monitored in the bottom ash and also in the effluent emanating from the existing ash pond. No ash shall be disposed-off in low laying area.</p>   | <p>Fly ash &amp; bottom ash are collected in dry form and 3x2500 MT Fly ash silo and 1x3000 MT bottom ash silo have been installed. We are exploring maximum utilization of Ash and unutilized ash is being conveyed to the Ash pond through HCSD system. We have a stock of 4, 60, 880 MT ash in the ash pond till end of March 2018.</p> <p>Monitoring of Mercury and other heavy metals (Ag, Hg, Cr, Pbetc) is being done for fly ash and bottom ash. The analysis report is enclosed as Annexure-6.</p>  |
| xiii) | <p>Fluoride (as F) consumption shall be less than 10 kg/ton of Aluminium produced as specified by the CREP.</p>  | <p>The specific fluoride (as F) consumption for the period April 17 to March 18 is 8.3 kg/ton of Aluminium produced.</p>   |
| xiv)  | <p>Anode butts generated from the pots shall be cleaned and recycled to the Anode Plant.</p> <p>The spent pot lining generated from the smelter shall be properly treated in spent pot lining treatment plant to remove fluoride and cyanide and disposed-off in secured landfill.</p> <p>The location and design of the land fill site shall be approved by the SPCB as per the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008. Leachate collection facilities shall be provided to the secured land fill facilities (SLF).</p> <p>The dross shall be recycled in the cast house.</p> <p>STP sludge shall be utilized as manure for</p> | <p>Anode butts generated from the pots is being cleaned and recycled completely.</p> <p>The spent pot lining generated from the smelter is having two parts. Carbon part is being supplied to M/s Green Energy Limited, Sambalpur for reprocessing and utilization, in this way the carbon part is completely recycled.</p> <p>The Refractory part (12.79 MT) is supplied to CHWTSDF of M/s Ramky Enviro in Jajpur district of Odisha state for joint trial in presence of CPCB &amp; SPCB and Industries. The trial has been completed and we understand that Protocol has been issued to M/s Ramky for safe disposal in secured landfill area. M/s Ramky is likely to lift the refractory SPL soon after fulfilling the terms &amp; conditions specified in the Protocol.</p> <p>The location and design of the land fill site has been prepared as per the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and approved from SPCB.</p> <p>The dross recycling is being started since July'17 in the in-house dross recycling unit after receipt of required clearances from CPCB &amp; SPCB.</p> <p>STP is commissioned and is in operation at</p> |

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|        | <p>greenbelt development.</p> <p>All the used oil and batteries shall be sold to the authorized recyclers/ re-processors.</p>  | <p>township &amp; Plant area separately, the sludge is being used for greenbelt development.</p> <p>The used oil and batteries are being sold to authorized recyclers/reprocessors.</p>   |
| xv)    | <p>As proposed, spent pot lining waste shall also be provided to cement and steel industries for further utilization.</p>  | <p>The Carbon part of the SPL which is being supposed to be sent to Cement and Steel Industries, we are supplying to M/s Green Energy Resources for detoxification and complete recycling.</p>  |
| xvi)   | <p>Ash pond shall be lined with HDP/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached. Ash pond water shall be recirculated and reused.</p>   | <p>The ash pond is provided with HDPE liner and adequate safety measures has been taken to avoid any kind of dyke breach. The ash disposal through HCSD system to the ash pond started from January 2017. At present we are achieving maximum ash utilization and ash is being sent to ash pond as and when required only.</p>  |
| xvii)  | <p>Cycle of concentration (CoC) of 5.0 shall be adopted.</p>   | <p>Water Balance of CPP is being optimized and presently we are maintaining the CoC &gt; 5.</p>   |
| xviii) | <p>Regular monitoring of ground water shall be carried out by establishing a network of existing wells and constructing new piezometers.</p> <p>Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the regional office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.</p> | <p>Regular monitoring of ground water is being carried out through establishing a network of existing wells and constructing a new piezometer well around the ash pond area. The ground water analysis report is enclosed as <i>Annexure-7</i>.</p> <p>Monitoring of heavy metals (Hg, Cr, As, Pb) around the Ash pond area is being carried and record maintained. The analysis report of the ground water around the ash disposal area is mentioned in <i>annexure-8</i>.</p> |
| xix)   | <p>Regular ground water monitoring shall be carried out by installing piezometers all around the secured land fill site in consultation with the SPCB, Central Ground Water Authority and State Ground Water Board and data submitted to the Ministry's Regional Office and SPCB.</p>  | <p>Secured landfill site has not yet been established inside the plant. Regular ground water monitoring will be carried out by installing piezometers all around the secured landfill site after establishment of the SLF in consultation with the SPCB, Central Ground Water Authority and State Ground Water Board. Data will be submitted to the Ministry's Regional Office and SPCB after establishment of secured land fill site.</p>                                      |
| xx)    | <p>Total water requirement for the expansion from Hirakud Reservoir shall not exceed 5,200 m<sup>3</sup>/hr and prior permission for the existing and proposed expansion shall be obtained from the concerned department</p>   | <p>No additional fresh water will be sourced from Hirakud Reservoir for the proposed expansion. The water requirement estimated for the expansion is within 52.73 cusec, as approved.</p>   |

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|        | <p>before commissioning of the plant.</p> <p>All the effluent including from the cooling tower and de-mineralization plant shall be treated in the effluent treatment plant and treated effluent shall be recycled/reutilized in the process in smelter and CPP and also for fire protection, dust suppression, greenbelt development etc.</p> <p>Domestic effluent shall be treated in sewage treatment plant (STP) and treated domestic waste water will be used for greenbelt development.</p> | <p>The Effluent from the cooling towers and de-mineralization plant is being treated in Double Stage RO based effluent treatment plant and is being recycled/reutilized in the process of CPP.</p> <p>Separate Sewage Treatment Plant (STP) is installed @ capacity 25 m<sup>3</sup>/hr for Smelter &amp; Captive Power Plant, STP of 300 KLD capacity is installed at Township area and the treated water being used for greenbelt development.</p> |
| xxi)   | No effluent shall be discharged outside the premises of smelter during non-monsoon period and shall be discharged during the monsoon period only after treatment and meeting the norms of the OSPCB/CPCB.   | We are operating a Double Stage Reverse Osmosis based effluent treatment plant (ETP) of 300 m <sup>3</sup> /hr capacity and therefore no effluent water is being discharged to outside without treatment from Smelter.   |
| xxii)  | Greenbelt of adequate width and density around the project site shall be developed in 33% area in consultation with the DFO as per the CPCB guidelines having density of 2,000 trees/Ha.  | Aditya Aluminium has developed Greenbelt over 425 acres inside the Core plant & Township areas. Around 2,80,500 saplings planted till March 2018.  |
| xxiii) | Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.  | Occupational Health Surveillance of the workers is being done as per the Odisha Factories Act.   |
| xxiv)  | The company shall develop rain water structures in the township area for recharge of ground water in consultation with the Central Ground Water Authority/Board.  | Rain water recharging arrangement is being made in the township buildings, besides a rain water harvesting pond is being established inside the township area which is being utilised for gardening purposes. A rain water scheme submitted to CGWA for approval vide letter no. AA/E&F/EC/2016/131, dated 09/04/2016.   |
| xxv)   | <p>Rehabilitation and Resettlement Action Plan as prepared and submitted to the State Govt. shall be implemented as per the R &amp; R Policy of the State Government.</p> <p>All the recommendations mentioned in the R&amp;R Plan shall be strictly followed including suitable employment and other facilities to all the oustees.</p>  | <p>Rehabilitation and Resettlement Action Plan is being implemented as per the R &amp; R policy, 2006 of the State Govt.</p> <p>All the recommendations are being followed/complied.</p>   |
| xxvi)  | All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium Sector shall be strictly implemented.   | All the conditions of CREP guideline for Aluminium sector is being followed. The point wise compliance to the CREP guideline is attached as <i>Annexure-09</i> .   |
| xxvii) | The company shall adopt well laid down  | The company has adopted a well laid down   |

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|         | corporate policy and identified and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with environmental clearance, environmental laws and regulations.   | Corporate Environment Policy. The Environment Policy is being revised in 19 <sup>th</sup> November 2016 approved by the Board of Directors. Copy of the revised Environment Policy is attached as annexure-10.   |
| xxviii) | All the commitments made to the public during public hearing /public consultation meeting held on 2 <sup>nd</sup> march 2012 should be satisfactorily implemented and a separate budget for implementing the same should be allocated and information submitted to the Ministry's Regional Office at Bhubaneswar.   | All the commitments made to the public during public hearing/public consultation meeting held on 2 <sup>nd</sup> march 2012 is under gradual implementation. (Status of implementation is enclosed as annexure-11.   |
| xxix)   | At least 5% of the total cost of the project shall be earmarked for towards the Enterprise Social Commitment and item-wise details along with time bound action plan should be prepared and submitted to the Ministry's office at Bhubaneswar. Implementation of such program should be ensured accordingly in a time bound manner.   | The expenses under Enterprise Social Commitment (ESC) till March 2018 is Rs 41.96 Crores.<br><br>However, in view of the recent Office Memorandum MOEFCC, dated 1 <sup>st</sup> May 2018 in respect of Corporate Environment Responsibility we will follow the guidelines mentioned in the said letter and submit compliance for CER only. |
| xxx)    | The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. the housing may be in the form of temporary structures to be ensured accordingly in a time bound manner.   | All necessary infrastructure and facilities are being provided to the workers from time to time.   |
| xxxi)   | The company shall submit within three months their policy towards Corporate Environment Responsibility which should inter-alia address (i) standard operating process/procedure to being into focus any infringement/deviation/violation of environmental or forests norms/ conditions (ii) Hierarchical system or administrative order of the company to deal with environmental issues and ensuring compliance to the environmental clearance and (iii) system of reporting of non-compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders. | The Corporate Environment Policy prepared and approved by the company Board of Directors, Organizational Structure for Hindalco Corporate Environment, Deployment of Corporate Policy in manufacturing Plants & communication of Policy as regards Corporate Environment already submitted to MoEF.  |
|         | GENERAL CONDITIONS  |  |
| i)      | The project authorities must strictly adhere to the stipulations made by the OSPCCB and the State Government.   | We will follow the stipulations made by OSPCCB and the State Government.   |



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| ii)   | No further expansion or modification in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.  | We will not carry out any expansion or modification in the plant without prior approval of MoEFCC.  |
| iii)  | The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19 <sup>th</sup> May, 1993 and standards prescribed from time to time. The SPCB may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.  | We have noted and accepted the stipulated condition.  |
| iv)   | At least four number of ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO <sub>2</sub> and NO <sub>x</sub> are anticipated in consultation with the OSPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and Orissa State Pollution Control Board once in Six months. | <p>Installation of four (04) CAAQM Stations completed and commissioned. Data connectivity established with the servers of OSPCB and CPCB.</p> <p>Installation of the continuous stack emission monitoring system in all the major stacks completed. All the CAAQMS &amp; CEMS synchronized with the webserver of the SPCB with URL <a href="http://117.239.117.27/ospcbtrdas/">http:// 117.239.117.27/ospcbtrdas/</a> &amp; CPCB with URL <a href="http://113.19.81.38/cpcbtrdas/">http:// 113.19.81.38/ cpcbtrdas/</a> respectively.</p> <p>The six-monthly compliance along with the monitoring data is being submitted to the concerned authorities regularly.</p> |
| v)    | The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (daytime) and 70 dBA (nighttime).  | <p>The overall noise levels in and around the plant area is within the prescribed standards and it is made possible by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.</p> <p>The overall noise level is within the standard, regular monitoring is being done.</p> <p>All necessary PPEs are provided to the workers and engineers working in the factory.</p>   |
| vi)   | Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.   | Occupational Health Surveillance of the workers is being done as per the Factories Act.   |
| vii)  | The company shall develop surface water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.  | The company has developed surface water harvesting structures to the tune of 22 lakhs cum to store water in the lean season and it will harvest the rain water during rainy season in the same reservoirs.  |
| viii) | The project proponent shall also comply with all the environmental protection measures   | We have noted and accepted all the conditions and will comply in a time bound manner. The   |

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|      | and safeguards recommended in the EIA report. Further the company must undertake socio-economic development activities in the surrounding villages like community development programmes, drinking water supply and health care etc.   | economic development activities are going on regularly as a part of our corporate social responsibility. A team of personnel are working dedicatedly for peripheral development work like conducting health camps, community developed programmes, formation SHG groups, supply of drinking water and other common infrastructural development works. Details of the CSR, R&R activities undertaken is attached as <i>Annexure-12</i> .   |
| ix)  | Requisite fund shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment & Forests as well the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to Regional Office of the Ministry at Bhubaneswar. The funds so provided shall not be diverted for any other purpose.   | Requisite fund has been spent & allotted towards capital cost and recurring cost/annum for environment pollution control measures and the fund will not be diverted for any other expenditure.  |
| x)   | A copy of the clearance letter shall be send by the proponent to concerned Panchayat, Zillaparishad/Municipality corporation, urban local boby and the local NGO, if any from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter also be put on the web site of the company by the proponent.   | Copy of the clearance letter has already been communicated to all concerned as mentioned in the condition. Scanned copy of the letter is also displayed in our official website.  |
| xi)  | The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitoring data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF at Bhubaneswar. The respective zonal office of CPCB and SPCB. The criteria pollutant levels namely' PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain. | The status of compliance to the EC conditions is being submitted to the Regional office of the MOEF regularly on 1 <sup>st</sup> June and 1 <sup>st</sup> Dec respectively with a copy to CPCB & OSPCB and the same is being uploaded into the Company website.<br><br>All the stack emission and ambient air monitoring stations are synchronized with the webserver of the SPCB & CPCB. The online monitoring data w.r.t. stack emission, ambient air quality and effluent water quality is being electrocically displayed at main entrance gate for information to the public. |
| xii) | The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitoring data (both in hard & soft copies as well as by e-mail) to the Regional Office of MOEF, the  | We are submitting the six monthly compliance reports of the stipulated environmental conditions (both in hard & soft copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Offices of CPCB and the SPCB.  |

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|       | respective Zonal Offices of CPCB and the SPCB. The Regional office of this Ministry at Bhubaneswar. CPCB/SPCB shall monitor the stipulated conditions.   | The monitoring data in respect of AAQ, water, soil, noise etc is enclosed as <i>Annexure-13</i> .   |
| xiii) | 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 State 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 compliance of environmental conditions and shall also be sent to the respective Regional Office at Bhubaneswar.   | The environmental statement for each financial year ending 31 <sup>st</sup> March in Form-V is being submitted to the concerned authorities of SPCB and MoEF.   |
| xiv)  | The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at website of the Ministry of Environment & Forest at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> . This shall 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 at Bhubaneswar. | Information to Public has been made through advertisement of the environmental clearance in two widely circulated daily newspapers i.e. "The New Indian Express" on 04-12-2012 & "The Samaja" on 05-12-2012, within seven days of receiving the clearance letter.<br><br>The copy of the advertisement was submitted to the Ministry's Regional Office at Bhubaneswar vide our office letter no. AAP/E&F/786, dated 07-12-2012. |
| xv)   | The authorities shall 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.   | Financial closure for Phase-1 (Smelter capacity of 0.36 MTPA and CPP of 1650 MW) of the Project is completed on 17th September 2012 and Construction activities for Phase-I completed for 0.36 MTPA Smelter and 6x150 MW CPP and operating 360 pots out of 360 pots in Smelter and 6 units (6x150 MW) in CPP.   |

Encl: As above

  
(Authorized Signatory)

MINISTRY OF ENVIRONMENT & FORESTS  
EASTERN REGIONAL OFFICE  
A/3, CHANDRASEKHARPUR, BHUBANESWAR- 751023

FORMAT FOR PROVIDING PARTICULARS ON GREENBELT /PLANTATION  
UNDER F(C) ACT 1980 AND E(P) ACT 1986.

|   |   |   |
|---|---|---|
| 1 | a) Name of the Project  | Aditya Aluminium (A Unit of Hindalco Industries Limited)  |
|   | b) Env't./Forest Clearance Nos.                                 | i. Env Clearance vide letter No: J-11011/136/2009-IA-I(I), Dated 29/11/2012 & J-11011/136/2009-IA.II (1), Dated 14 June 2013.<br>ii. Forest Clearance vide letter No: 8-27/2009-FC, 10.02.2011  |
| 2 | Location/ Block/ Sub-Divn./ Dist/ State                         | Aditya Aluminium<br>(A Div. of Hindalco Industries Limited)<br>At/Po- Lapanga, Dist- Sambalpur<br>Pin - 768 212, Odisha6  |
| 3 | Address for communication                                       | Aditya Aluminium<br>(A Div. of Hindalco Industries Limited)<br>At/Po- Lapanga, Dist- Sambalpur<br>Pin - 768 212, Odisha   |
| 4 | Existing vegetation in the area/ region                         | At present several types of vegetation available in the area, however some of the names mentioned as follows- Terminalia arjuna; Pongamia pinnata; Gmelina arboria; Anthocephallus cadamba; Dalbergia latifolia; Azadiracta indica; Albizzia Lebbeck; Delonix regia; Ailanthus exelsa, Cassea siamea; Cassia fistula, etc |
| 5 | a) Species:<br>(trees/shrubs/grasses/climbers)                  | Terminalia arjuna; Pongamia pinnata; Gmelina arboria; Anthocephallus cadamba; Dalbergia latifolia; Azadiracta indica; Albizzia Lebbeck; Delonix regia; Ailanthus exelsa, Cassea siamea; Cassia fistula, etc trees species available.  |
|   | b) Major prevalent species of each type:                        | Anthocephallus cadamba, Terminalia arjuna, Peltoferrum ferrugenum, Gmelina arboria, Alberzia Lebbeck, Delonix regia etc are the prevalent species found.  |
| 6 | Land coverage by the project:                                   | 1347.35 Ha  |
|   | a. Name and number of tree/species felled                       | 2002 nos of trees felled through OFDC, Sambalpur (CKL) Division.  |
|   | b. Name and number of plant species still available in the area | Plant species and number will be counted after completion of all the project activities and will be submitted to your good office   |
|   | c. By protecting the area will indigenous stock come up         | Nil   |
|   | d. Extent of greenbelt developed                                | 425 acres covered under greenbelt till date   |
| 7 | Plantations required to be carried out as per                   |   |
|   | a) Conditions of Environmental Clearance in Ha/Nos.             | 33% of total project area   |
|   | b) Conditions of Forest Act (c) Clearance in Ha/Nos.            | 25 % of total project area  |
|   | c. Voluntarily in Ha/Nos.                                       | NA  |

8. Details of plantation

- a) Total area available for plantation  
In each category



|   |       |                  |            |                  |
|---|-------|------------------|------------|------------------|
| Grenbelt  | Dumps | Back filled area | Road sides | Block plantation |
| The 33% of the project area will be covered under greenbelt/green cover and the plant. The phase- I facilities completed and Phase-II construction work not started. Till date 425 acres of land has been covered under greenbelt and balance will be covered in phased manner. |       |                  |            |                  |

b) Plantation details (category wise & methodology used)

| Year of plantation | Species Planted                                      | Spacing | Height attained | Total area covered | Area still available                      |
|--------------------|--|---------|-----------------|--------------------|---|
| 2010 & 2011        | Terminalia arjuna;<br>Pongamia pinnata;              | 2*2     | 25'-28'         | 14.7 Ha            | Plantation will be done in phased manner. |
| 2012               | Gmelina arboria;                                     | 3*3     | 18'-22'         | 38.2 Ha            |   |
| 2013               | Anthocephallus cadamba;                              | 3*3     | 14'-18'         | 11.2 Ha            |   |
| 2014               | Dalbergia latifolia;                                 | 3*3     | 12'-14'         | 16.8 Ha            |   |
| 2015               | Azadiracta indica; Albizzia                          | 4*4     | 10'-12'         | 24.36 Ha           |   |
| 2016               | Lebbeck; Delonix regia;                              | 2*2     | 7'-10'          | 20.0 Ha            |   |
| 2017               | Ailanthus exelsa, Cassea siamea; Cassia fistula, etc | 2*2     | 3'-5'           | 46.8 Ha            |   |

c) Survival of Plantation:

|                        |            |
|------------------------|------------|
| Total Plantation (No.) | 2, 80,500  |
| Survival (No.)         | 2,52,000   |
| Survival rate          | Approx 90% |

9. Agency carrying out plantation and maintenance: NA

10. Financial details (year wise) plantation wise and item wise:

| Sl. No. | Year                   | Fund allocated (Rs) | Expenditure made (Rs) | Average cost of each surviving plant in Rs. |
|---------|------------------------|---------------------|-----------------------|---|
| 1       | 2010                   | 81,62,000           | 81,62,000.00          | 245.00                                      |
| 2       | 2011                   |                     |                       |   |
| 3       | 2012                   | 46,21,600           | 46,21,600.00          | 121.00                                      |
| 4       | 2013                   | 13,62,500           | 13,62,500.00          | 121.00                                      |
| 5       | 2014                   | 18,53,000           | 18,53,000.00          | 115.00                                      |
| 6       | 2015                   | 18,65,000           | 18,65,000             | 109.00                                      |
| 7       | 2016                   | 49,00,000           | 49,00,000             | 100.00                                      |
| 8       | 2018 (till March 2018) | 68,00,000           | 64,00,000             | 71.00                                       |

11. Inspection of plantation by field experts and their comments and follow up actions:

District Forest Officer, Range officer visit our location at periodic intervals and give their technical guidance from time to time. Joint Director/Director of Regional Office of MoEFCC, Bhubaneswar also visit our plant site periodically.

12. Remarks/ any other information :

Indigenous species have been planted as per the direction of Regional Office of MoEFCC, Bhubaneswar, State Forest Department and CPCB guidelines.

  
(Signature)

## Report-II

### PROFORMA FOR PROVIDING INFORMATION ON REHABILITATION

1. No. of villages affected : 11
2. Families Affected : 1450

| Families affected | SC | ST | OTH | TOTAL |
|-------------------|----|----|-----|-------|
|                   | -  | -  | -   | 1450  |

L

3. Compensation package offered per family:

| State/ Centre norms                         | Project package  |
|---|--|
| As per the R&R Policy 2006, Govt. of Odisha | As per the R&R Policy 2006, Govt. of Odisha. Aditya Aluminium follows the RR Policy and subsequent Compensation Revision also. |

4. Budget estimate for rehabilitation :

- a) Total outlay : 84.59 crores
- b) Amount paid/used : 80.81 crores

5. Employment details

- a) Total employment to be provided : 70
- b) Employment given so far : 48

6. Rehabilitation & Resettlement details : Total Displaced Persons Numbers - 399

|    |                                  |                  |     |     |       |
|----|----------------------------------|------------------|-----|-----|-------|
| a  | No. of families rehabilitated    |                  |     |     |       |
| i  | Name of the Site                 | Aditya Aluminium |     |     |       |
| ii | Families rehabilitated           | SC               | ST  | OTH | Total |
|    |                                  | 08               | 406 | 19  | 433   |
| b  | Families yet to be rehabilitated |                  |     |     |       |
| i  | Name of the Site(s)              | Aditya Aluminium |     |     |       |
| ii | No. of families (Total -433)     | SC               | ST  | OTH | Total |
|    |                                  | 00               | 19  | 2   | 21    |

7. Any other information : Nil

  
(Signature)



Ref: VCSPL/17/R-3106

Date: 07.11.2017

## STACK EMISSION MONITORING REPORT FOR OCT-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 30.10.2017
3. Sampling Location : ST-1: Stack attached to ABF-1 - FTC-1
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 31.10.2017 to 04.11.2017

|   | Unit of Measurement       | Methodology                                   | Analysis Results |
|---|---------------------------|---|------------------|
|   |                           |   | ST-1             |
| Stack Temperature                         | $^{\circ}\text{C}$        | Stack Sampler                                 | 97               |
| Velocity of Flue Gas                      | m/sec                     | Stack Sampler                                 | 13.13            |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>        | Gravimetric                                   | 7.9              |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>        | IPA- Thorin method                            | 52.2             |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>        | Modified Jacob & Hochheiser (Na-Arsenite)     | 23.4             |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>        | Distillation followed by Ion Electrode method | 0.11             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>        | Ion Electrode method                          | 0.42             |
| Total Fluoride as F                       | mg/Nm <sup>3</sup>        | Calculation                                   | 0.53             |
| Tar Fumes                                 | mg/Nm <sup>3</sup>        | Extraction followed by Gas Chromatography     | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | $\mu\text{g}/\text{Nm}^3$ | Gas Chromatography                            | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref.: VCSPL/17/B-3108

Date: 07.11.2017

## STACK EMISSION MONITORING REPORT FOR OCT-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 30.10.2017
3. Sampling Location : ST-2: Stack attached to ABF II - FTC - 2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 31.10.2017 to 04.11.2017

| Parameters                                | Unit of Measurement       | Methodology                                   | Analysis Results |
|---|---------------------------|---|------------------|
|   |                           |   | ST-2             |
| Stack Temperature                         | $^{\circ}\text{C}$        | Stack Sampler                                 | 99.0             |
| Velocity of Flue Gas                      | m/sec                     | Stack Sampler                                 | 10.28            |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$   | Gravimetric                                   | 9.5              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$   | IPA- Thorin method                            | 51.6             |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$   | Modified Jacob & Hochheiser (Na-Arsenite)     | 43.1             |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$   | Distillation followed by Ion Electrode method | 0.08             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$   | Ion Electrode method                          | 0.44             |
| Total Fluoride as F                       | $\text{mg}/\text{Nm}^3$   | Calculation                                   | 0.52             |
| Tar Fumes                                 | $\text{mg}/\text{Nm}^3$   | Extraction followed by Gas Chromatography     | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | $\mu\text{g}/\text{Nm}^3$ | Gas Chromatography                            | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.





Ref.: VCSPL/IR/R-3126

Date.: 05.12.20

## STACK EMISSION MONITORING REPORT FOR NOV-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 20.11.2017
3. Sampling Location : ST-7: Stack attached to ABF-1 - FTC-1
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.11.2017 to 27.11.2017

|   | Unit of Measurement       | Methodology                                   | Analysis Results |
|---|---------------------------|---|------------------|
|   |                           |   | ST-1             |
| Stack Temperature                         | $^{\circ}\text{C}$        | Stack Sampler                                 | 99               |
| Velocity of Flue Gas                      | m/sec                     | Stack Sampler                                 | 8.84             |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$   | Gravimetric                                   | 7.2              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$   | IPA- Thorin method                            | 50.1             |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$   | Modified Jacob & Hochheiser (Na-Arsenite)     | 31.2             |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$   | Distillation followed by Ion Electrode method | 0.12             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$   | Ion Electrode method                          | 0.49             |
| Total Fluoride as F                       | $\text{mg}/\text{Nm}^3$   | Calculation                                   | 0.61             |
| Tar Fumes                                 | $\text{mg}/\text{Nm}^3$   | Extraction followed by Gas Chromatography     | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | $\mu\text{g}/\text{Nm}^3$ | Gas Chromatography                            | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref.: VCSPL/R/R-3127

Date.: 05.12.2017

## STACK EMISSION MONITORING REPORT FOR NOV-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 20.11.2017
3. Sampling Location : ST-8: Stack attached to ABF II - FTC - 2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.11.2017 to 27.11.2017

| Parameters                                | Unit of Measurement       | Methodology                                   | Analysis Results |
|---|---------------------------|---|------------------|
|   |                           |   | ST-2             |
| Stack Temperature                         | $^{\circ}\text{C}$        | Stack Sampler                                 | 101.0            |
| Velocity of Flue Gas                      | m/sec                     | Stack Sampler                                 | 9.96             |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$   | Gravimetric                                   | 9.1              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$   | IPA- Thorin method                            | 53.2             |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$   | Modified Jacob & Hochheiser (Na-Arsenite)     | 45.2             |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$   | Distillation followed by Ion Electrode method | 0.09             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$   | Ion Electrode method                          | 0.53             |
| Total Fluoride as F                       | $\text{mg}/\text{Nm}^3$   | Calculation                                   | 0.62             |
| Tar Fumes                                 | $\text{mg}/\text{Nm}^3$   | Extraction followed by Gas Chromatography     | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | $\mu\text{g}/\text{Nm}^3$ | Gas Chromatography                            | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref.: VCSPL/R/R-3127

Date.: 05.12.2017

## STACK EMISSION MONITORING REPORT FOR NOV-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 20.11.2017
3. Sampling Location : ST-8: Stack attached to ABF II - FTC - 2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.11.2017 to 27.11.2017

| Parameters                                | Unit of Measurement       | Methodology                                   | Analysis Results |
|---|---------------------------|---|------------------|
|   |                           |   | ST-2             |
| Stack Temperature                         | $^{\circ}\text{C}$        | Stack Sampler                                 | 101.0            |
| Velocity of Flue Gas                      | m/sec                     | Stack Sampler                                 | 9.96             |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$   | Gravimetric                                   | 9.1              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$   | IPA- Thorin method                            | 53.2             |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$   | Modified Jacob & Hochheiser (Na-Arsenite)     | 45.2             |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$   | Distillation followed by Ion Electrode method | 0.09             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$   | Ion Electrode method                          | 0.53             |
| Total Fluoride as F                       | $\text{mg}/\text{Nm}^3$   | Calculation                                   | 0.62             |
| Tar Fumes                                 | $\text{mg}/\text{Nm}^3$   | Extraction followed by Gas Chromatography     | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | $\mu\text{g}/\text{Nm}^3$ | Gas Chromatography                            | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref: VCSPL/18/R-78

Date: 05/01/18

## STACK EMISSION MONITORING REPORT FOR DEC-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 29.12.2017
3. Sampling Location : ST-7: Stack attached to ABF-1 - FTC-1
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representat
6. Date of Analysis : 30.12.2017 to 01.01.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard | Analysis Results |
|---|---------------------|---|-----------------------------|------------------|
|   |                     |   |                             | ST-7             |
| Stack Temperature                         | $^{\circ}\text{C}$  | Stack Sampler                                 | -                           | 105.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                           | 8.56             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                          | 8.1              |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA- Thorin method                            | -                           | 61.3             |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                           | 39.0             |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                           | 0.21             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                           | 0.47             |
| Total Fluoride as F                       | mg/Nm <sup>3</sup>  | Calculation                                   | -                           | 0.68             |
| Tar Fumes                                 | mg/Nm <sup>3</sup>  | Extraction followed by Gas Chromatography     | -                           | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | mg/Nm <sup>3</sup>  | Gas Chromatography                            | -                           | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref: VCSPL/18/R-79

Date: 05/01/18

## STACK EMISSION MONITORING REPORT FOR DEC-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 29.12.2017
3. Sampling Location : ST-8: Stack attached to ABF II - FTC - 2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 30.12.2017 to 01.01.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard | Analysis Results |
|---|---------------------|---|-----------------------------|------------------|
|   |                     |   |                             | ST-8             |
| Stack Temperature                         | °C                  | Stack Sampler                                 | -                           | 101              |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                           | 8.94             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                          | 8.4              |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA- Thorin method                            | -                           | 59               |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                           | 42               |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                           | 0.19             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                           | 0.41             |
| Total Fluoride as F                       | mg/Nm <sup>3</sup>  | Calculation                                   | -                           | 0.60             |
| Tar Fumes                                 | mg/Nm <sup>3</sup>  | Extraction followed by Gas Chromatography     | -                           | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | µg/Nm <sup>3</sup>  | Gas Chromatography                            | -                           | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref.: *Env-lab/18/R-237*

Date: *02/02/2018*

## STACK EMISSION MONITORING REPORT FOR JAN-2018

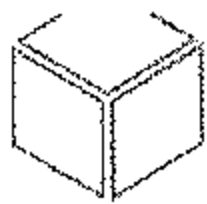
1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 23.01.2018
3. Sampling Location : ST-7: Stack attached to ABF-1 - FTC-1
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.01.2018 to 29.01.2018

|   | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-7             |
| Stack Temperature                         | <sup>o</sup> C      | Stack Sampler                                 | -                                   | 102.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 6.21             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 6.27             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA- Thorin method                            | -                                   | 215.1            |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | 95.3             |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.19             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.54             |
| Total Fluoride as F                       | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.73             |
| Tar Fumes                                 | mg/Nm <sup>3</sup>  | Extraction followed by Gas Chromatography     | -                                   | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | mg/Nm <sup>3</sup>  | Gas Chromatography                            | -                                   | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref: *Envlab/18/R-238*

Date: *02/02/2*

## STACK EMISSION MONITORING REPORT FOR JAN-2018

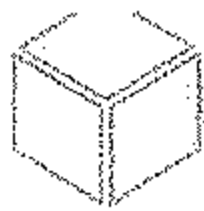
1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 23.01.2018
3. Sampling Location : **ST-8: Stack attached to ABF II - FTC - 2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.01.2018 to 29.01.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-8             |
| Stack Temperature                         | °C                  | Stack Sampler                                 | -                                   | 100.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 5.96             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 7.15             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA- Thorin method                            | -                                   | 238.3            |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | 104.0            |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.17             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.57             |
| Total Fluoride as F                       | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.74             |
| Tar Fumes                                 | mg/Nm <sup>3</sup>  | Extraction followed by Gas Chromatography     | -                                   | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | µg/Nm <sup>3</sup>  | Gas Chromatography                            | -                                   | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref: Envlab/18/R-293

Date: 03/03/18

## STACK EMISSION MONITORING REPORT FOR FEB-2018

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 22.02.2018
3. Sampling Location : ST-1: Stack attached to ABF-1 - FTC-1
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.02.2018 to 28.02.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-1             |
| Stack Temperature                         | $^{\circ}\text{C}$  | Stack Sampler                                 | -                                   | 102.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 7.1              |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 6.52             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA- Thorin method                            | -                                   | 225.3            |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | 98.6             |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.18             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.58             |
| Total Fluoride as F                       | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.76             |
| Tar Fumes                                 | mg/Nm <sup>3</sup>  | Extraction followed by Gas Chromatography     | -                                   | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | mg/Nm <sup>3</sup>  | Gas Chromatography                            | -                                   | ND               |

Note: ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.







Ref: Env/lab /18 /R-394

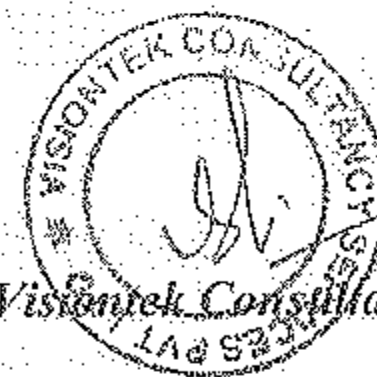
Date: 03/03/18

## STACK EMISSION MONITORING REPORT FOR FEB-2018

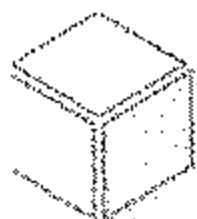
1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 22.02.2018
3. Sampling Location : ST-2: Stack attached to ABF II - FTC - 2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.02.2018 to 28.02.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-2             |
| Stack Temperature                         | °C                  | Stack Sampler                                 | -                                   | 99.0             |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 6.21             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 7.62             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA- Thorin method                            | -                                   | 236.1            |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | 101.0            |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.19             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.53             |
| Total Fluoride as F                       | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.72             |
| Tar Fumes                                 | mg/Nm <sup>3</sup>  | Extraction followed by Gas Chromatography     | -                                   | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | µg/Nm <sup>3</sup>  | Gas Chromatography                            | -                                   | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref: ENVLAB/18/R-142

Date: 04/04/18

**STACK EMISSION MONITORING REPORT FOR MARCH-2018**

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 31.03.2018
3. Sampling Location : ST-7: Stack attached to ABF-1 - FTC-1
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 02.04.2018 TO 05.04.2018

|   | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-1             |
| Stack Temperature                         | °C                  | Stack Sampler                                 | -                                   | 101              |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 9.54             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 10.95            |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA- Thorin method                            | -                                   | 229              |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | 96               |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.16             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.54             |
| Total Fluoride as F                       | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.7              |
| Tar Fumes                                 | mg/Nm <sup>3</sup>  | Extraction followed by Gas Chromatography     | -                                   | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | mg/Nm <sup>3</sup>  | Gas Chromatography                            | -                                   | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref: ENVL-AB/18/R-143

Date: 04/04/18

## STACK EMISSION MONITORING REPORT FOR MARCH-2018

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 31.03.2018
3. Sampling Location : ST-8: Stack attached to ABF II - FTC - 2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 02.04.2018 TO 05.04.2018

| Parameters                                | Unit of Measurement       | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------------|---|-------------------------------------|------------------|
|   |                           |   |                                     | ST-2             |
| Stack Temperature                         | $^{\circ}\text{C}$        | Stack Sampler                                 | -                                   | 92               |
| Velocity of Flue Gas                      | m/sec                     | Stack Sampler                                 | -                                   | 11.41            |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$   | Gravimetric                                   | 50                                  | 6.7              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$   | IPA- Thorin method                            | -                                   | 232              |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$   | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | 98               |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$   | Distillation followed by Ion Electrode method | -                                   | 0.15             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$   | Ion Electrode method                          | -                                   | 0.52             |
| Total Fluoride as F                       | $\text{mg}/\text{Nm}^3$   | Calculation                                   | -                                   | 0.67             |
| Tar Fumes                                 | $\text{mg}/\text{Nm}^3$   | Extraction followed by Gas Chromatography     | -                                   | ND               |
| Poly Aromatic Hydrocarbon as PAHs         | $\mu\text{g}/\text{Nm}^3$ | Gas Chromatography                            | -                                   | ND               |

Note: ND: Not Detected.



For Visiontek Consultancy Services Pvt. Ltd.



Ref.: VCSPL/17/R-3115

Date: 07.11.2017

## STACK EMISSION MONITORING REPORT FOR OCT-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 30.10.2017
3. Sampling Location : ST-1: Stack attached to GTC-1 (Pot room)
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 31.10.2017 to 03.11.2017

| Parameters                                | Unit of Measurement     | Methodology                                   | Analysis Results |
|---|-------------------------|---|------------------|
|   |                         |   | ST-1             |
| Stack Temperature                         | $^{\circ}\text{C}$      | Stack Sampler                                 | 107.0            |
| Velocity of Flue Gas                      | m/sec                   | Stack Sampler                                 | 10.06            |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$ | Gravimetric                                   | 6.7              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$ | IPA-Thorin method                             | ND               |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$ | Modified Jacob & Hochheiser (Na-Arsenite)     | ND               |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$ | Distillation followed by Ion Electrode method | 0.10             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$ | Ion Electrode method                          | 0.31             |
| Total Fluoride                            | $\text{mg}/\text{Nm}^3$ | Calculation                                   | 0.41             |



For Visiontek Consultancy Services Pvt. Ltd.



Ref.: VCS.P.L/17/R-3116

Date: 07.11.2017

## STACK EMISSION MONITORING REPORT FOR OCT-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Date of Sampling : 30.10.2017
3. Sampling Location : ST-2: Stack attached to GTC-2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 31.10.2017 to 03.11.2017

| Parameters                                | Unit of Measurement     | Methodology                                   | Analysis Results |
|---|-------------------------|---|------------------|
|   |                         |   | ST-2             |
| Stack Temperature                         | $^{\circ}\text{C}$      | Stack Sampler                                 | 111.0            |
| Velocity of Flue Gas                      | m/sec                   | Stack Sampler                                 | 9.66             |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$ | Gravimetric                                   | 5.8              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$ | IPA-Thorin method                             | ND               |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$ | Modified Jacob & Hochheiser (Na-Arsenite)     | ND               |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$ | Distillation followed by Ion Electrode method | 0.14             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$ | Ion Electrode method                          | 0.27             |
| Total Fluoride                            | $\text{mg}/\text{Nm}^3$ | Calculation                                   | 0.41             |



For Visiontek Consultancy Services Pvt. Ltd.



Ref.: V.C.S.P.L./17/R-3128

Date.: 05.12.20

## STACK EMISSION MONITORING REPORT FOR NOV-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga  
 2. Date of Sampling : 20.11.2017  
 3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**  
 4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2  
 5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative  
 6. Date of Analysis : 23.11.2017 to 27.11.2017

| Parameters                                | Unit of Measurement | Methodology                                   | Analysis Results |
|---|---------------------|---|------------------|
|   |                     |   | ST-1             |
| Stack Temperature                         | <sup>0</sup> C      | Stack Sampler                                 | 107.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | 7.24             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 6.2              |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA-Thorin method                             | ND               |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | ND               |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | 0.12             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | 0.32             |
| Total Fluoride                            | mg/Nm <sup>3</sup>  | Calculation                                   | 0.44             |



For Visiontek Consultancy Services Pvt. Ltd.



Ref.: VCSPL/13/R-3129

Date.: 05.12.2017

## STACK EMISSION MONITORING REPORT FOR NOV-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Date of Sampling : 20.11.2017
3. Sampling Location : ST-10: Stack attached to GTC-2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.11.2017 to 27.11.2017

| Parameters                                | Unit of Measurement     | Methodology                                   | Analysis Results |
|---|-------------------------|---|------------------|
|   |                         |   | ST-2             |
| Stack Temperature                         | $^{\circ}\text{C}$      | Stack Sampler                                 | 108.0            |
| Velocity of Flue Gas                      | m/sec                   | Stack Sampler                                 | 9.02             |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$ | Gravimetric                                   | 5.6              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$ | IPA-Thorin method                             | ND               |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$ | Modified Jacob & Hochheiser (Na-Arsenite)     | ND               |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$ | Distillation followed by Ion Electrode method | 0.16             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$ | Ion Electrode method                          | 0.34             |
| Total Fluoride                            | $\text{mg}/\text{Nm}^3$ | Calculation                                   | 0.50             |



For Visiontek Consultancy Services Pvt. Ltd.



Ref: VCSPL/18/R-80

Date: 05/01/18

## STACK EMISSION MONITORING REPORT FOR DEC-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 30.12.2017
3. Sampling Location : ST-9: Stack attached to GTC-1 (Pot room)
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 31.12.2017 to 01.01.2018

| Parameters                                | Unit of Measurement     | Methodology                                   | Emission Prescribe Standard | Analysis Results |
|---|-------------------------|---|-----------------------------|------------------|
|   |                         |   |                             | ST-9             |
| Stack Temperature                         | $^{\circ}\text{C}$      | Stack Sampler                                 | -                           | 110.0            |
| Velocity of Flue Gas                      | m/sec                   | Stack Sampler                                 | -                           | 7.16             |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$ | Gravimetric                                   | 50                          | 6.7              |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$ | IPA-Thorin method                             | -                           | ND               |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$ | Modified Jacob & Hochheiser (Na-Arsenite)     | -                           | ND               |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$ | Distillation followed by Ion Electrode method | -                           | 0.23             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$ | Ion Electrode method                          | -                           | 0.39             |
| Total Fluoride                            | $\text{mg}/\text{Nm}^3$ | Calculation                                   | -                           | 0.62             |



For Visiontek Consultancy Services Pvt. Ltd.





Ref: VCSPL/18/R-81

Date: 05/01

## STACK EMISSION MONITORING REPORT FOR DEC-2017

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapang
2. Date of Sampling : 30.12.2017
3. Sampling Location : ST-10: Stack attached to GTC-2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Represent
6. Date of Analysis : 31.12.2017 to 01.01.2017

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard | Analysis Result |
|---|---------------------|---|-----------------------------|-----------------|
|   |                     |   |                             | ST-10           |
| Stack Temperature                         | $^{\circ}\text{C}$  | Stack Sampler                                 | -                           | 106             |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                           | 7.52            |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                          | 5.4             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA-Thorin method                             | -                           | ND              |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                           | ND              |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                           | 0.23            |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                           | 0.36            |
| Total Fluoride                            | mg/Nm <sup>3</sup>  | Calculation                                   | -                           | 0.59            |



For Visiontek Consultancy Services Pvt. Ltd.



Ref: *Envilab/18/R-239*

Date: *02/02/18*

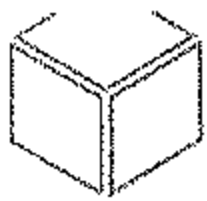
## STACK EMISSION MONITORING REPORT FOR JAN-2018

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 22.01.2018
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representat
6. Date of Analysis : 25.01.2018 to 29.01.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-9             |
| Stack Temperature                         | <sup>o</sup> C      | Stack Sampler                                 | -                                   | 104.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 8.23             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 3.18             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA-Thorin method                             | -                                   | ND               |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | ND               |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.21             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.56             |
| Total Fluoride                            | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.77             |

For Visiontek Consultancy Services Pvt. Ltd.





Ref: *EnvLab/18/R-240*

Date: *02/02/20*

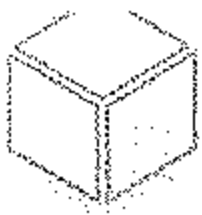
## STACK EMISSION MONITORING REPORT FOR JAN-2018

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Date of Sampling : 22.01.2018
3. Sampling Location : **ST-10: Stack attached to GTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.01.2018 to 29.01.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-10            |
| Stack Temperature                         | <sup>o</sup> C      | Stack Sampler                                 | -                                   | 108.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 7.61             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 4.29             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA-Thorin method                             | -                                   | ND               |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | ND               |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.18             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.62             |
| Total Fluoride                            | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.80             |

For Visiontek Consultancy Services Pvt. Ltd.





Ref: EnvLab/18/R-395

Date: 03/03/18

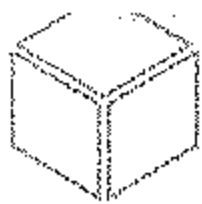
## STACK EMISSION MONITORING REPORT FOR FEB-2018

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 23.02.2018
3. Sampling Location : ST-1: Stack attached to GTC-1 (Pot room)
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.02.2018 to 28.02.2018

| Parameters                                | Unit of Measurement     | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|-------------------------|---|-------------------------------------|------------------|
|   |                         |   |                                     | ST-1             |
| Stack Temperature                         | $^{\circ}\text{C}$      | Stack Sampler                                 | -                                   | 106.0            |
| Velocity of Flue Gas                      | m/sec                   | Stack Sampler                                 | -                                   | 6.85             |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$ | Gravimetric                                   | 50                                  | 3.98             |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$ | IPA-Thorin method                             | -                                   | ND               |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$ | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | ND               |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$ | Distillation followed by Ion Electrode method | -                                   | 0.19             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$ | Ion Electrode method                          | -                                   | 0.64             |
| Total Fluoride                            | $\text{mg}/\text{Nm}^3$ | Calculation                                   | -                                   | 0.83             |



For: Visiontek Consultancy Services Pvt. Ltd.



Ref: Emulab / 18 / R-396

Date: 03/03/18

## STACK EMISSION MONITORING REPORT FOR FEB-2018

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Date of Sampling : 23.02.2018
3. Sampling Location : ST-2: Stack attached to GTC-2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.02.2018 to 28.02.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-2             |
| Stack Temperature                         | $^{\circ}\text{C}$  | Stack Sampler                                 | -                                   | 110.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 6.63             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 3.26             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA-Thorin method                             | -                                   | ND               |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | ND               |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.21             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.66             |
| Total Fluoride                            | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.87             |



For Visiontek Consultancy Services Pvt. Ltd.



Ref: ENVLAB/18/R-144

Date: 04/04/18

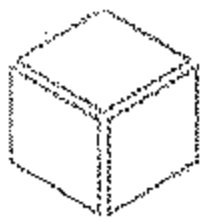
## STACK EMISSION MONITORING REPORT FOR MARCH-2018

1. Name of Industry : M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga
2. Date of Sampling : 31.03.2018
3. Sampling Location : ST-9: Stack attached to GTC-1 (Pot room)
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 02.04.2018 TO 05.04.2018

| Parameters                                | Unit of Measurement     | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|-------------------------|---|-------------------------------------|------------------|
|   |                         |   |                                     | ST-1             |
| Stack Temperature                         | $^{\circ}\text{C}$      | Stack Sampler                                 | -                                   | 104.0            |
| Velocity of Flue Gas                      | m/sec                   | Stack Sampler                                 | -                                   | 8.54             |
| Concentration of Particulate Matter as PM | $\text{mg}/\text{Nm}^3$ | Gravimetric                                   | 50                                  | 3.78             |
| Sulphur dioxide as $\text{SO}_2$          | $\text{mg}/\text{Nm}^3$ | IPA-Thorin method                             | -                                   | ND               |
| Oxides of Nitrogen as $\text{NO}_x$       | $\text{mg}/\text{Nm}^3$ | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | ND               |
| Particulate Fluoride                      | $\text{mg}/\text{Nm}^3$ | Distillation followed by Ion Electrode method | -                                   | 0.16             |
| Gaseous Fluoride                          | $\text{mg}/\text{Nm}^3$ | Ion Electrode method                          | -                                   | 0.62             |
| Total Fluoride                            | $\text{mg}/\text{Nm}^3$ | Calculation                                   | -                                   | 0.78             |

For Visiontek Consultancy Services Pvt. Ltd.





Ref: ENVLAB/18/R-145  
**STACK EMISSION MONITORING REPORT FOR MARCH-2018** Date: 04/04/18

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Date of Sampling : 31.03.2018
3. Sampling Location : ST-10; Stack attached to GTC-2
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 2
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 02.04.2018 TO 05.04.2018

| Parameters                                | Unit of Measurement | Methodology                                   | Emission Prescribe Standard (OSPCB) | Analysis Results |
|---|---------------------|---|-------------------------------------|------------------|
|   |                     |   |                                     | ST-2             |
| Stack Temperature                         | $^{\circ}\text{C}$  | Stack Sampler                                 | -                                   | 112.0            |
| Velocity of Flue Gas                      | m/sec               | Stack Sampler                                 | -                                   | 9.01             |
| Concentration of Particulate Matter as PM | mg/Nm <sup>3</sup>  | Gravimetric                                   | 50                                  | 3.32             |
| Sulphur dioxide as SO <sub>2</sub>        | mg/Nm <sup>3</sup>  | IPA-Thorin method                             | -                                   | ND               |
| Oxides of Nitrogen as NO <sub>x</sub>     | mg/Nm <sup>3</sup>  | Modified Jacob & Hochheiser (Na-Arsenite)     | -                                   | ND               |
| Particulate Fluoride                      | mg/Nm <sup>3</sup>  | Distillation followed by Ion Electrode method | -                                   | 0.18             |
| Gaseous Fluoride                          | mg/Nm <sup>3</sup>  | Ion Electrode method                          | -                                   | 0.62             |
| Total Fluoride                            | mg/Nm <sup>3</sup>  | Calculation                                   | -                                   | 0.8              |



For Visiontek Consultancy Services Pvt. Ltd.







Ref: Eom/ab/01/R-118

Date: 23.01.18

## FORAGE ANALYSIS REPORT

|    |                     |   |  |
|----|---------------------|---|--|
| 1. | Name of Industry    | : | M/s Hindalco Industries Ltd, (Unit- Aditya Aluminium); Lapanga   |
| 2. | Date of Sampling    | : | 10.01.2018   |
| 3. | Nature of Sample    | : | Vegetation Sample  |
| 4. | Sampling Locations  | : | Thehkoli; Lapanga; Gurupali; Jangala; Bhadarpali; Bamloi; Tilaimal; Gumkarama; Ghichamura; Plant site. |
| 5. | Sample collected by | : | VCSPL Representative in Presence of Aditya Aluminum Representative                                     |
| 6. | Date of Analysis    | : | 11.01.2018 to 18.01.2018   |

| Sl. No. | Date of Sampling | Name of the Location | Type of Species                           | Method of Analysis | Results (ppm) |
|---------|------------------|----------------------|---|--------------------|---------------|
|         |                  |                      |   |                    | Fluoride      |
| 1       | 10.01.2018       | Thehkoli             | Brinjal leaf (Solanum Melongena)          | AOAC 975.04        | 1.2           |
| 2       | 10.01.2018       | Lapanga              | Kosala Saga (Amaranthus Leaves)           | AOAC 975.04        | 1.7           |
| 3       | 10.01.2018       | Gurupali             | Charoli leaf (Buchanania lanzan)          | AOAC 975.04        | 1.1           |
| 4       | 10.01.2018       | Jangala              | Flat Lima Beans leaf (Phaseolus Vulgaris) | AOAC 975.04        | 1.3           |
| 5       | 10.01.2018       | Bhadarpali           | Tomato Leaf (Solanum lycopersicum)        | AOAC 975.04        | 0.8           |
| 6       | 10.01.2018       | Bomaloi              | Onion leaf (Allium Sepa)                  | AOAC 975.04        | 0.6           |
| 7       | 10.01.2018       | Tilaimal             | Flat Lima Beans leaf (Phaseolus Vulgaris) | AOAC 975.04        | 0.9           |
| 8       | 10.01.2018       | Gumkarma             | Brinjal leaf (Solanum Melongena)          | AOAC 975.04        | 1.2           |
| 9       | 10.01.2018       | Ghichamura           | Cabbage (Brassica Oleracea)               | AOAC 975.04        | 1.3           |
| 10      | 10.01.2018       | Plant site           | Bamboo leaf (Bambusa Vulgaris)            | AOAC 975.04        | 1.6           |



For Visiontek Consultancy Services Private Limited



Ref: Envtab/18/R-2328

Date: 30/04/18

## FORAGE ANALYSIS REPORT

|    |                     |   |  |
|----|---------------------|---|--|
| 1. | Name of Industry    | : | M/s Hindalco Industries Ltd, (Unit- Aditya Aluminium); Lapanga   |
| 2. | Date of Sampling    | : | 01.03.2018   |
| 3. | Nature of Sample    | : | Vegetation Sample  |
| 4. | Sampling Locations  | : | Thehkoli; Lapanga; Gurupali; Jangala; Bhadarpali; Bamloi; Tileimal; Gumkarama; Ghichamura; Plant site. |
| 5. | Sample collected by | : | VCSPL Representative in Presence of Aditya Aluminum Representative                                     |
| 6. | Date of Analysis    | : | 03.03.2018 to 05.03.2018   |

| Sl. No. | Date of Sampling | Name of the Location | Type of Species                           | Method of Analysis | Results (ppm) |
|---------|------------------|----------------------|---|--------------------|---------------|
|         |                  |                      |   |                    | Fluoride      |
| 1       | 01.03.2018       | Thehkoli             | Brinjal leaf (Solanum Melongena)          | AOAC 975.04        | 1.1           |
| 2       | 01.03.2018       | Lapanga              | Tomato Leaf (Solanum lycopersicum)        | AOAC 975.04        | 0.8           |
| 3       | 01.03.2018       | Gurupali             | Onion leaf (Allium Sepa)                  | AOAC 975.04        | 0.7           |
| 4       | 01.03.2018       | Jangala              | Flat Lima Beans leaf (Phaseolus Vulgaris) | AOAC 975.04        | 1.1           |
| 5       | 01.03.2018       | Bhadarpali           | Kosala Saga (Amaranthus Leaves)           | AOAC 975.04        | 1.3           |
| 6       | 01.03.2018       | Bomaloi              | Charoli leaf (Buchanania lanzan)          | AOAC 975.04        | 1.2           |
| 7       | 01.03.2018       | Tileimal             | Flat Lima Beans leaf (Phaseolus Vulgaris) | AOAC 975.04        | 0.7           |
| 8       | 01.03.2018       | Gumkarma             | Brinjal leaf (Solanum Melongena)          | AOAC 975.04        | 1.1           |
| 9       | 01.03.2018       | Ghichamura           | Cabbage (Brassica Oleracea)               | AOAC 975.04        | 1.2           |
| 10      | 01.03.2018       | Plant site           | Bamboo leaf (Bambusa Vulgaris)            | AOAC 975.04        | 1.4           |

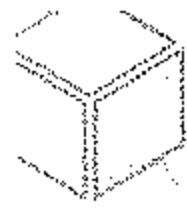


For Visiontek Consultancy Services Private Limited

NAME OF THE INDUSTRY:- ADITYA ALUMINIUM

STATUS OF UTILIZATION OF COAL ASH (FLY ASH AND BOTTOM ASH) For the Month of:- April 17 to March 18

| Sl. No. | Month | Year | Coal Consumption (MT) | Power Installed Capacity (MW/HP) | Power Generated (MWH) | Quantity of Fly Ash generated (MT) | Quantity of Bottom Ash generated (MT) | Total Ash Generated (MT) | Disposal Method  | Brick Manufacturing (MT) | Supplied to cement industries (M/A Ultratech, M/A ACC & M/A OCI) in (MT) | Mine Void Filling (MT) | Utilization in Embankment/Dyke Raising (MT) | Road Making (MT) | Low lying area filling/land development (MT) | Through MCSO to Ash Pond | Aggregate (MT) | Agriculture/Horticulture Sector (MT) | Total Ash Utilized (MT) | % of Utilization |
|---------|-------|------|-----------------------|----------------------------------|-----------------------|------------------------------------|---------------------------------------|--------------------------|--|--------------------------|--|------------------------|---|------------------|--|--------------------------|----------------|--------------------------------------|-------------------------|------------------|
| 1       | April | 2017 | 127901                | 900                              | 625                   | 122029.75                          | 5084.57                               | 127114.32                | Dry supplied to Cement Plants. Fly ash Bricks used and in low lying area development and disposed through MCSO water to ash pond | 35.88                    | 73806.4  | 0                      | 0   | 0                | 26057.04                                     | 28415                    | 0              | 0                                    | 98599.32                | 77.5             |
| 2       | May   | 2017 | 346422.19             | 900                              | 654                   | 129923.12                          | 5413.48                               | 135336.60                | Do   | 125.5                    | 75902.82   | 0                      | 0   | 0                | 15593.35                                     | 43712.81                 | 0              | 0                                    | 91524.17                | 67.7             |
| 3       | June  | 2017 | 332432                | 900                              | 656                   | 128852.37                          | 4952.6                                | 133804.97                | Do   | 51.77                    | 80801.99   | 0                      | 0   | 0                | 21758.37                                     | 71172.88                 | 0              | 0                                    | 102542.13               | 82.9             |
| 4       | July  | 2017 | 354808                | 900                              | 653.37                | 124451.79                          | 5185.47                               | 129637.26                | Do   | 0                        | 60717.93   | 0                      | 0   | 0                | 24875.18                                     | 44242.65                 | 0              | 0                                    | 85293.11                | 65.9             |
| 5       | Aug   | 2017 | 360592                | 900                              | 653                   | 132845.84                          | 5535.24                               | 138381.08                | Do   | 72.12                    | 52053.79   | 0                      | 0   | 0                | 31240.10                                     | 52005.67                 | 0              | 0                                    | 83375.01                | 60.3             |
| 6       | Sept  | 2017 | 352111.35             | 900                              | 655.6                 | 138252.68                          | 5760.53                               | 144013.21                | Do   | 37.2                     | 65675.2  | 0                      | 0   | 0                | 71295.04                                     | 57001.17                 | 0              | 0                                    | 128312.04               | 89.1             |
| 7       | Oct   | 2017 | 351732                | 900                              | 653                   | 135104                             | 5625.33                               | 140729.33                | Do   | 106.18                   | 62125.62   | 0                      | 0   | 0                | 39457.40                                     | 44564.13                 | 0              | 0                                    | 96669.1                 | 68.7             |
| 8       | Nov   | 2017 | 329911                | 900                              | 647.79                | 125905.08                          | 4825.54                               | 130730.62                | Do   | 173.44                   | 61525.4  | 0                      | 0   | 0                | 23857.87                                     | 34550.79                 | 0              | 0                                    | 85287.71                | 65.3             |
| 9       | Dec   | 2017 | 328816.18             | 900                              | 644.65                | 121321.05                          | 5057.137                              | 126478.18                | Do   | 171.45                   | 64256.92   | 0                      | 0   | 0                | 23197.41                                     | 38806.40                 | 0              | 0                                    | 82679.78                | 65.4             |
| 10      | Jan   | 2018 | 314012                | 900                              | 648.21                | 118405.78                          | 4901.91                               | 123307.69                | Do   | 35.65                    | 55820.58   | 0                      | 0   | 0                | 74854.71                                     | 41115.76                 | 0              | 0                                    | 115976.04               | 93.6             |
| 11      | Feb   | 2018 | 281846                | 900                              | 643.18                | 105085.04                          | 4212.04                               | 109297.08                | Do   | 100.32                   | 67132.4  | 0                      | 0   | 0                | 14597.73                                     | 469.63                   | 0              | 0                                    | 124231.45               | 92.6             |
| 12      | Mar   | 2018 | 313805                | 900                              | 650.28                | 112179.1                           | 4824.129                              | 117003.22                | Do   | 54.91                    | 99821.66   | 0                      | 0   | 0                | 7766.60                                      | 3116.00                  | 0              | 0                                    | 112737.17               | 97.3             |
|         | Total |      | 3929351.75            |                                  |                       | 1473827.89                         | 61326.846                             | 1535154.74               |  | 854.83                   | 825317.8   | 0                      | 0   | 0                | 369280.65                                    | 422775.85                | 0              | 0                                    | 1127379.04              | 73.7             |



Ref: Env/ab/18/R-2325

Date: 30/04/18

## FLY ASH ANALYSIS REPORT

1. Name of Industry : M/s Hindalco Industries Limited  
(Unit- Aditya Aluminium), Lapanga.
2. Sampling Location : FA-01: CPP Fly Ash Silo
3. Date of Sampling : 12.12.2017
4. Date of Analysis : 13.012.2017 to 19.12.2017
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

| Sl. No.                         | Parameters                     | Unit | Analysis Results |
|---------------------------------|--------------------------------|------|------------------|
|                                 |                                |      | FA-01            |
| <b>A. Chemical Analysis</b>     |                                |      |                  |
| 1                               | Na <sub>2</sub> O              | %    | 0.15             |
| 2                               | MgO                            | %    | 0.97             |
| 3                               | Al <sub>2</sub> O <sub>3</sub> | %    | 21.47            |
| 4                               | SiO <sub>2</sub>               | %    | 56.3             |
| 5                               | P <sub>2</sub> O <sub>5</sub>  | %    | 0.012            |
| 6                               | SO <sub>3</sub>                | %    | 1.4              |
| 7                               | K <sub>2</sub> O               | %    | 0.71             |
| 8                               | CaO                            | %    | 4.42             |
| 9                               | TiO <sub>2</sub>               | %    | --               |
| 10                              | MnO                            | %    | 0.24             |
| 11                              | Fe <sub>2</sub> O <sub>3</sub> | %    | 6.91             |
| <b>B. Heavy Metals Analysis</b> |                                |      |                  |
| 1                               | Hg                             | %    | <0.001           |
| 2                               | As                             | %    | <0.001           |
| 3                               | Pb                             | %    | 0.01             |
| 4                               | Cr                             | %    | < 0.002          |
| 5                               | V                              | %    | <0.001           |
| 6                               | Fe                             | %    | 6.7              |
| 7                               | Co                             | %    | <0.001           |
| 8                               | Cu                             | %    | 0.06             |
| 9                               | Ni                             | %    | 0.091            |
| 10                              | Zn                             | %    | 0.05             |
| 11                              | Sr                             | %    | --               |
| 12                              | Ba                             | %    | <0.001           |



For Visiontek Consultancy Services Pvt. Ltd.



Ref: Envtlab/18/R-2330

Date: 30/04/18

## FLY ASH ANALYSIS REPORT

1. Name of Industry : M/s Hindalco Industries Limited  
(Unit- Aditya Aluminium), Lapanga.
2. Sampling Location : BA-01: CPP Bottom Ash Silo
3. Date of Sampling : 12.12.2017
4. Date of Analysis : 13.12.2017 to 19.12.2017
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

| Sl. No.                         | Parameters                     | Unit | Analysis Results |
|---------------------------------|--------------------------------|------|------------------|
|                                 |                                |      | BA-01            |
| <b>A. Chemical Analysis</b>     |                                |      |                  |
| 1                               | Na <sub>2</sub> O              | %    | 0.16             |
| 2                               | MgO                            | %    | 1.6              |
| 3                               | Al <sub>2</sub> O <sub>3</sub> | %    | 22.1             |
| 4                               | SiO <sub>2</sub>               | %    | 53.1             |
| 5                               | P <sub>2</sub> O <sub>5</sub>  | %    | 0.012            |
| 6                               | SO <sub>3</sub>                | %    | 1.3              |
| 7                               | K <sub>2</sub> O               | %    | 0.81             |
| 8                               | CaO                            | %    | 5.3              |
| 9                               | TiO <sub>2</sub>               | %    | --               |
| 10                              | MnO                            | %    | 0.12             |
| 11                              | Fe <sub>2</sub> O <sub>3</sub> | %    | 8.1              |
| <b>B. Heavy Metals Analysis</b> |                                |      |                  |
| 1                               | Hg                             | %    | <0.001           |
| 2                               | As                             | %    | <0.001           |
| 3                               | Pb                             | %    | 0.022            |
| 4                               | Cr                             | %    | < 0.002          |
| 5                               | V                              | %    | <0.001           |
| 6                               | Fe                             | %    | 6.92             |
| 7                               | Co                             | %    | <0.001           |
| 8                               | Cu                             | %    | 0.036            |
| 9                               | Ni                             | %    | 0.08             |
| 10                              | Zn                             | %    | 0.07             |
| 11                              | Sr                             | %    | --               |
| 12                              | Ba                             | %    | <0.001           |



For Visiontek Consultancy Services Pvt. Ltd.



Ref: Envlab/IS/R-2329

Date: 30/04/18

## GROUND WATER QUALITY ANALYSIS REPORT

- Name of Industry : M/s Hindalco Industries Ltd.(Unit- Aditya Aluminium); Lapanga.
- Sampling location : GW-1: Lapanga Village; GW-2: Pandiol Village; GW-3:Bamloi Village; GW-4: Tilaimal Village; GW-5: Thelkoloi Village; GW-6: Ghichamura Village; GW-7: Gunkarama Village; GW-8: Chatikra Village.
- Date of sampling : 07.12.2017
- Date of analysis : 08.12.2017 to 14.12.2017
- Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

| Sl. No. | Parameter  | Testing Methods                           | Unit       | Standard as per IS - 10500:2012              | GW-1   | GW-2   | GW-3   | GW-4   | GW-5   | GW-6   | GW-7   | GW-8   |
|---------|--|---|------------|--|--------|--------|--------|--------|--------|--------|--------|--------|
|         |  |   |            |  |        |        |        |        |        |        |        |        |
| 1       | pH Value   | APHA 4500H <sup>+</sup> B                 | --         | 6.5-8.5                                      | 7.6    | 7.1    | 7.3    | 7.4    | 7.3    | 7.1    | 7.6    | 7.3    |
| 2       | Colour   | APHA 2120 B, C                            | Hazen      | 5  | CL     | CL     | CL     | CL     | CL     | CL     | CL     | CL     |
| 3       | Taste  | APHA 2160 C                               | --         | Agreeable                                    | AL     | AL     | AL     | AL     | AL     | AL     | AL     | AL     |
| 4       | Odour  | APHA 2150 B                               | --         | U/O  | U/O    | U/O    | U/O    | U/O    | U/O    | U/O    | U/O    | U/O    |
| 5       | Conductivity   | APHA 2510-B                               | µs/cm      | --   | 162.0  | 157.0  | 205.0  | 180.0  | 166.4  | 170.2  | 178.6  | 214.6  |
| 6       | Turbidity  | APHA 2130 B                               | NTU        | 1  | <2.0   | <2.0   | <2.0   | <2.0   | <2.0   | <2.0   | <2.0   | <2.0   |
| 7       | Total Dissolved Solids                                   | APHA 2540 C                               | mg/l       | 500  | 210.5  | 205.2  | 182.5  | 210.2  | 209.3  | 175.6  | 190.1  | 185.2  |
| 8       | Total Hardness (as CaCO <sub>3</sub> )                   | APHA 2340 C                               | mg/l       | 200  | 75.1   | 92.5   | 78.3   | 86.1   | 96.3   | 88.0   | 76.5   | 94.0   |
| 9       | Total Alkalinity   | APHA 2320 B                               | mg/l       | 200  | 67.3   | 72.5   | 59.4   | 56.0   | 62.0   | 71.0   | 56.0   | 84.0   |
| 10      | Calcium (as Ca)  | APHA 3500Ca B                             | mg/l       | 75   | 15.8   | 19.3   | 20.4   | 13.8   | 19.7   | 17.3   | 19.5   | 16.4   |
| 11      | Magnesium (as Mg)  | APHA 3500Mg B                             | mg/l       | 30   | 5.9    | 5.6    | 8.5    | 9.4    | 12.8   | 11.2   | 9.6    | 10.3   |
| 12      | Residual, free Chlorine                                  | APHA 4500Cl <sub>2</sub> B                | mg/l       | 0.2  | ND     | ND     | ND     | ND     | ND     | ND     | ND     | ND     |
| 13      | Boron (as B)   | APHA 4500B, B                             | mg/l       | 0.5  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 14      | Chloride (as Cl <sup>-</sup> )                           | APHA 4500Cl <sup>-</sup> B                | mg/l       | 250  | 27     | 33     | 21     | 28     | 22     | 26     | 23     | 24     |
| 15      | Sulphate (as SO <sub>4</sub> <sup>2-</sup> )             | APHA 4500 SO <sub>4</sub> <sup>2-</sup> E | mg/l       | 200  | 11.5   | 5.5    | 6.7    | 7.5    | 8.3    | 9.2    | 10.7   | 7.5    |
| 16      | Fluoride (as F <sup>-</sup> )                            | APHA 4500F <sup>-</sup> C                 | mg/l       | 1.0  | 0.31   | 0.28   | 0.36   | 0.27   | 0.31   | 0.29   | 0.37   | 0.38   |
| 17      | Nitrate (as NO <sub>3</sub> <sup>-</sup> )               | APHA 4500 NO <sub>3</sub> <sup>-</sup> E  | mg/l       | 45   | 3.7    | 2.4    | 2.7    | 1.9    | 2.7    | 3.9    | 2.5    | 2.8    |
| 18      | Sodium as Na   | APHA 3500-Na                              | mg/l       | --   | 15.5   | 12.8   | 11.3   | 14.5   | 13.4   | 11.9   | 14.7   | 13.2   |
| 19      | Potassium as K   | APHA 3500-K                               | mg/l       | --   | 1.02   | 1.5    | 1.23   | 0.97   | 1.21   | 0.93   | 1.14   | 1.07   |
| 20      | Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) | APHA 5530 B,D                             | mg/l       | 0.001  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 21      | Cyanide (as CN <sup>-</sup> )                            | APHA 4500 CN <sup>-</sup> C,D             | mg/l       | 0.05   | ND     | ND     | ND     | ND     | ND     | ND     | ND     | ND     |
| 22      | Anionic Detergents (as MBAS)                             | APHA 5540 C                               | mg/l       | 0.2  | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   | <0.2   |
| 23      | Cadmium (as Cd)  | APHA 3111 B,C                             | mg/l       | 0.003  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 24      | Arsenic (as As)  | APHA 3114 B                               | mg/l       | 0.01   | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 25      | Copper (as Cu)   | APHA 3111 B,C                             | mg/l       | 0.05   | <0.025 | <0.025 | <0.025 | <0.025 | <0.025 | <0.025 | <0.025 | <0.025 |
| 26      | Lead (as Pb)   | APHA 3111 B,C                             | mg/l       | 0.01   | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  | <0.01  |
| 27      | Manganese (as Mn)  | APHA 3500Mn B                             | mg/l       | 0.1  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 28      | Iron (as Fe)   | APHA 3500Fe, B                            | mg/l       | 0.3  | 0.25   | 0.21   | 0.27   | 0.25   | 0.30   | 0.31   | 0.34   | 0.33   |
| 29      | Chromium (as Cr)   | APHA 3500Cr B                             | mg/l       | 0.05   | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 30      | Selenium (as Se)   | APHA 3114 B                               | mg/l       | 0.01   | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 31      | Zinc (as Zn)   | APHA 3111 B,C                             | mg/l       | 5  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  | <0.05  |
| 32      | Aluminium as( Al)  | APHA 3500Al B                             | mg/l       | 0.03   | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 33      | Mercury (as Hg)  | APHA 3500 Hg                              | mg/l       | 0.001  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 34      | Mineral Oil  | APHA 5220 B                               | mg/l       | 0.5  | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | Pesticides   | APHA 6630 B,C                             | mg/l       | Absent                                       | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent |
| 36      | E.Coli   | APHA 9221-F                               | MPN/100 ml | Shall not be detectable in any 100 ml sample | Absent | Absent | Absent | Absent | Absent | Absent | Absent | Absent |
| 37      | Total Coliforms  | APHA9221-B                                | MPN/100 ml | Shall not be detectable in any 100 ml sample | <1.8   | <1.8   | <1.8   | <1.8   | <1.8   | <1.8   | <1.8   | <1.8   |

Note: CL: Colourless, AL: Agreeable, U/O: Unobjectionable, ND: Not Detected.

BDL Values: BDL (Below Detectable Limits) Values: Cu<0.025 mg/l, Mn<0.05 mg/l, C<sub>6</sub>H<sub>5</sub>OH<0.001 mg/l, Hg<0.001 mg/l, Cd<0.01 mg/l, Se<0.001 mg/l, As<0.01 mg/l, Pb<0.01 mg/l, Zn<0.05 mg/l, Cr<sup>6+</sup><0.05 mg/l, Al<0.001 mg/l, B<0.01 mg/l, TC(MPN 0-0-0)<1.8.



For Visiontek Consultancy Services Pvt. L



Ref: Enwlab/18/R-2323

Date: 30/04/18

## GROUND WATER QUALITY ANALYSIS REPORT

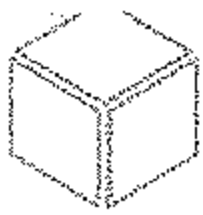
1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.
2. Sampling location : GW-1: Ash Disposal Site near Bomaloi (Bore Well)  
GW-2: Ash Disposal Site Inside the plant premises (Dug well)  
GW-3: Ash Pond area (Bore Well)
3. Date of sampling : 17.10.2017
4. Date of analysis : 18.10.2017 to 23.10.2017
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

| Sl. No. | Parameter  | Testing Methods                           | Unit  | Standard as per IS -10500:2012 | Analysis Results |        |        |
|---------|--|---|-------|--------------------------------|------------------|--------|--------|
|         |  |   |       |                                | GW-1             | GW-2   | GW-3   |
| 1       | pH Value   | APHA 4500 H+B                             | --    | 6.5- 8.5                       | 7.2              | 6.9    | 7.5    |
| 2       | Turbidity  | APHA 2130 B                               | NTU   | 5                              | 0.26             | 0.19   | 0.23   |
| 3       | Conductivity   | APHA 2510-B                               | µs/cm | ---                            | 256              | 274    | 281    |
| 4       | Total Hardness (as CaCO <sub>3</sub> )                   | APHA 2340 C                               | mg/l  | 200                            | 20.0             | 22.0   | 19.0   |
| 5       | Iron (as Fe)   | APHA 3500Fe, B                            | mg/l  | 0.3                            | 0.06             | 0.10   | 0.10   |
| 6       | Chloride (as Cl <sup>-</sup> )                           | APHA 4500Cl B                             | mg/l  | 250                            | 34.9             | 35.4   | 31.1   |
| 7       | Total Dissolved Solids                                   | APHA 2540 C                               | mg/l  | 500                            | 156.0            | 126.0  | 119.0  |
| 8       | Calcium (as Ca <sup>2+</sup> )                           | APHA 3500Ca B                             | mg/l  | 75                             | 20.4             | 16.3   | 19.3   |
| 9       | Magnesium (as Mg <sup>2+</sup> )                         | APHA 3500Mg B                             | mg/l  | 30                             | 4.1              | 5.2    | 4.9    |
| 10      | Copper (as Cu)   | APHA 3111 B,C                             | mg/l  | 0.05                           | <0.025           | <0.025 | <0.025 |
| 11      | Sodium as Na   | APHA3500-Na                               | mg/l  | --                             | <0.01            | <0.01  | <0.01  |
| 12      | Potassium as K   | APHA 3500-K                               | mg/l  | --                             | <0.01            | <0.01  | <0.01  |
| 13      | Manganese (as Mn)  | APHA 3500Mn B                             | mg/l  | 0.1                            | <0.05            | <0.05  | <0.05  |
| 14      | Sulphate (as SO <sub>4</sub> <sup>2-</sup> )             | APHA 4500 SO <sub>4</sub> <sup>2-</sup> E | mg/l  | 200                            | 4.2              | 4.3    | 5.2    |
| 15      | Nitrate (as NO <sub>3</sub> <sup>-</sup> )               | APHA 4500 NO <sub>3</sub> <sup>-</sup> E  | mg/l  | 45                             | 0.29             | 0.46   | 0.54   |
| 16      | Fluoride (as F <sup>-</sup> )                            | APHA 4500F <sup>-</sup> C                 | mg/l  | 1.0                            | 0.29             | 0.31   | 0.37   |
| 17      | Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) | APHA 5530 B,D                             | mg/l  | 0.001                          | <0.001           | <0.001 | <0.001 |
| 18      | Mercury (as Hg)  | APHA 3500 Hg                              | mg/l  | 0.001                          | <0.001           | <0.001 | <0.001 |
| 19      | Cadmium (as Cd)  | APHA 3111 B,C                             | mg/l  | 0.003                          | <0.01            | <0.01  | <0.01  |
| 20      | Selenium (as Se)   | APHA 3114 B                               | mg/l  | 0.01                           | <0.001           | <0.001 | <0.001 |
| 21      | Arsenic (as As)  | APHA 3114 B                               | mg/l  | 0.01                           | <0.01            | <0.01  | <0.01  |
| 22      | Cyanide (as CN <sup>-</sup> )                            | APHA 4500 CN <sup>-</sup> C,D             | mg/l  | 0.05                           | ND               | ND     | ND     |
| 23      | Lead (as Pb)   | APHA 3111 B,C                             | mg/l  | 0.01                           | <0.01            | <0.01  | <0.01  |
| 24      | Zinc (as Zn)   | APHA 3111 B,C                             | mg/l  | 5                              | <0.05            | <0.05  | <0.05  |
| 25      | Chromium (as Cr <sup>6+</sup> )                          | APHA 3500Cr B                             | mg/l  | 0.05                           | <0.005           | <0.005 | <0.005 |
| 26      | Total Alkalinity   | APHA 2320 B                               | mg/l  | 260                            | 36.0             | 44.0   | 37.0   |
| 27      | Aluminium as( Al)  | APHA 3500Al B                             | mg/l  | 0.03                           | <0.001           | <0.001 | <0.001 |
| 28      | Boron (as B)   | APHA 4500B, B                             | mg/l  | 0.5                            | <0.01            | <0.01  | <0.01  |

Note: ND: Not Detected.

BDL Values: BDL. (Below Detectable Limits) Values: Cu<0.025 mg/l, Mn<0.05 mg/l, C<sub>6</sub>H<sub>5</sub>OH<0.001 mg/l, Hg<0.001 mg/l, Cd<0.01 mg/l, Se<0.001 mg/l, As<0.01 mg/l, Pb<0.01 mg/l, Zn<0.05 mg/l, Cr<sup>6+</sup><0.05 mg/l, Al<0.001 mg/l, B<0.01 mg/l.

  
 For Visiontek Consultancy Services Pvt. Ltd.



Ref: Eon/lab/18/R-2331

Date: 30/04/18

## GROUND WATER QUALITY ANALYSIS REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.
2. Sampling location : GW-1: Ash Disposal Site near Bomaloi (Bore Well)  
GW-2: Ash Disposal Site Inside the plant premises (Dug well)  
GW-3: Ash Pond area (Bore Well)
3. Date of sampling : 11.01.2018
4. Date of analysis : 13.01.2018 to 17.01.2018
5. Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

| Sl. No. | Parameter  | Testing Methods                           | Unit  | Standard as per IS -10500:2012 | Analysis Results |        |        |
|---------|--|---|-------|--------------------------------|------------------|--------|--------|
|         |  |   |       |                                | GW-1             | GW-2   | GW-3   |
| 1       | pH Value   | APHA 4500 H+B                             | --    | 6.5- 8.5                       | 7.3              | 6.9    | 7.4    |
| 2       | Turbidity  | APHA 2130 B                               | NTU   | 5                              | 0.25             | 0.17   | 0.21   |
| 3       | Conductivity   | APHA 2510-B                               | µs/cm | --                             | 249.0            | 264.0  | 271.0  |
| 4       | Total Hardness (as CaCO <sub>3</sub> )                   | APHA 2340 C                               | mg/l  | 200                            | 19.0             | 23.0   | 17.0   |
| 5       | Iron (as Fe)   | APHA 3500Fe, B                            | mg/l  | 0.3                            | 0.07             | 0.09   | 0.10   |
| 6       | Chloride (as Cl)   | APHA 4500Cl B                             | mg/l  | 250                            | 34.1             | 36.2   | 29.1   |
| 7       | Total Dissolved Solids                                   | APHA 2540 C                               | mg/l  | 500                            | 121.0            | 118.0  | 126.0  |
| 8       | Calcium (as Ca)  | APHA 3500Ca B                             | mg/l  | 75                             | 20.3             | 17.4   | 18.30  |
| 9       | Magnesium (as Mg)  | APHA 3500Mg B                             | mg/l  | 30                             | 4.6              | 5.4    | 4.6    |
| 10      | Copper (as Cu)   | APHA 3111 B,C                             | mg/l  | 0.05                           | <0.025           | <0.025 | <0.025 |
| 11      | Sodium as Na   | APHA3500-Na                               | mg/l  | --                             | <0.01            | <0.01  | <0.01  |
| 12      | Potassium as K   | APHA 3500-K                               | mg/l  | --                             | <0.01            | <0.01  | <0.01  |
| 13      | Manganese (as Mn)  | APHA 3500Mn B                             | mg/l  | 0.1                            | <0.05            | <0.05  | <0.05  |
| 14      | Sulphate (as SO <sub>4</sub> )                           | APHA 4500 SO <sub>4</sub> <sup>2-</sup> E | mg/l  | 200                            | 4.1              | 4.5    | 6.1    |
| 15      | Nitrate (as NO <sub>3</sub> )                            | APHA 4500 NO <sub>3</sub> <sup>-</sup> E  | mg/l  | 45                             | 0.18             | 0.53   | 0.64   |
| 16      | Fluoride (as F)  | APHA 4500F C                              | mg/l  | 1.0                            | 0.36             | 0.38   | 0.42   |
| 17      | Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) | APHA 5530 B,D                             | mg/l  | 0.001                          | <0.001           | <0.001 | <0.001 |
| 18      | Mercury (as Hg)  | APHA 3500 Hg                              | mg/l  | 0.001                          | <0.001           | <0.001 | <0.001 |
| 19      | Cadmium (as Cd)  | APHA 3111 B,C                             | mg/l  | 0.003                          | <0.01            | <0.01  | <0.01  |
| 20      | Selenium (as Se)   | APHA 3114 B                               | mg/l  | 0.01                           | <0.001           | <0.001 | <0.001 |
| 21      | Arsenic (as As)  | APHA 3114 B                               | mg/l  | 0.01                           | <0.01            | <0.01  | <0.01  |
| 22      | Cyanide (as CN)  | APHA 4500 CN C,D                          | mg/l  | 0.05                           | ND               | ND     | ND     |
| 23      | Lead (as Pb)   | APHA 3111 B,C                             | mg/l  | 0.01                           | <0.01            | <0.01  | <0.01  |
| 24      | Zinc (as Zn)   | APHA 3111 B,C                             | mg/l  | 5                              | <0.05            | <0.05  | <0.05  |
| 25      | Chromium (as Cr <sup>6+</sup> )                          | APHA 3500Cr B                             | mg/l  | 0.05                           | <0.005           | <0.005 | <0.005 |
| 26      | Total Alkalinity   | APHA 2320 B                               | mg/l  | 200                            | 46.0             | 49.0   | 39.0   |
| 27      | Aluminium as( Al)  | APHA 3500Al B                             | mg/l  | 0.03                           | <0.001           | <0.001 | <0.001 |
| 28      | Boron (as B)   | APHA 4500B, B                             | mg/l  | 0.5                            | <0.01            | <0.01  | <0.01  |

Note: ND: Not Detected.

BDL Values: BDL (Below Detectable Limits) Values: Cu<0.025 mg/l, Mn<0.05 mg/l, C<sub>6</sub>H<sub>5</sub>OH<0.001 mg/l, Hg<0.001 mg/l, Cd<0.01 mg/l, Se<0.01 mg/l, As<0.01 mg/l, Pb<0.01 mg/l, Zn<0.05 mg/l, Cr<sup>6+</sup><0.05 mg/l, Al<0.001 mg/l, B<0.01 mg/l.



For Visiontek Consultancy Services Pvt. L.



**COMPLIANCE TO CREP GUIDELINES FOR SMELTER**

Compliance Status as on March 2018

| Sr. No. | Particulars  | Compliance   |
|---------|--|--|
| 1       | Environmental clearance for new smelters to be given by MoEF only with pre-baked technology  | Smelter design is based on pre-baked technology  |
| 2       | Fluoride emissions should be limited to 0.8 kg/ton of aluminium production and dry scrubbing of fluorides  | Fluoride emissions is being controlled by installing GTC & FTP below 0.8 kg/ton of aluminium production  |
| 3       | Fluoride consumption in the smelter should be limited to 10 kg/ton of aluminium produced   | Fluoride consumption is kg/ton of aluminium production   |
| 4       | <p>The fluoride in forage should be limited to</p> <p>Average of 12 consecutive months - 40 ppm<br/> Average of 2 consecutive months - 60 ppm<br/> One month - 80 ppm</p> <p>Regular monitoring data to be submitted to SPCB and CPCB.</p> | Forage fluoride is being monitored on quarterly basis as a part of post project monitoring activities. The monitored data is being regularly submitted to SPCB and CPCB.   |
| 5       | The average life of the pots should be 2500 days. The possibility of using the SPL in cement or steel industry after recovery of aluminium fluoride should be explored.  | The plant is designed for longer life of pots. SPL generated is sold to authorised reprocessors and refractory part will be disposed after permission for disposal of SPL refractory part in TSDF by CPCB, Till that time we have stored it under covered shed.  |
| 6       | The SPL should be disposed in secured landfill.  | <p>The spent pot lining generated from the smelter is having two parts. Carbon part is being supplied to M/s Green Energy Limited, Sambalpur for reprocessing and utilization, in this way the carbon part is completely recycled.</p> <p>The Refractory part (12.79 MT) is supplied to CHWTSDF of M/s Ramky Enviro in Jajpur district of Odisha state for joint trial in presence of CPCB &amp; SPCB and Industries. The trial has been completed and we understand that Protocol has been issued to M/s Ramky for safe disposal in secured landfill area. M/s Ramky is likely to lift the refractory SPL soon after fulfilling the terms &amp; conditions specified in the Protocol.</p> |
| 7       | Achieving particulate matter limit of 50 mg/Nm <sup>3</sup> in anode baking furnace  | It is being Complied   |

**COMPLIANCE TO CREP GUIDELINES FOR CPP**

**Compliance Status as on March 2018**

| Sr. No. | Conditions   | Compliance   |
|---------|--|--|
| 1       | Implementation of Environmental Standards (emission & effluent) in non-compliant* Power Plants (31 & 27)<br>- Submission of action plan: June 30, 2003<br>- Placement of order for Pollution of control equipment: September, 2003<br>- Installation & commission: December 31, 2005   | Not Applicable   |
| 2       | For existing thermal power plants, a feasibility study shall be carried out by Central Electricity Authority (CEA) to examine possibility to reduce the particulate matter emissions to 100 mg/Nm <sup>3</sup> . The studies shall also suggest the road map to meet 100 mg/Nm <sup>3</sup> . The studies shall also suggest the road map to meet 100 mg/Nm <sup>3</sup> wherever found feasible. CEA shall submit the report by March 2004. | Not Applicable   |
| 3       | New / expansion power projects to be accorded environmental clearance on or after 1.4.1.2003 shall meet the limit of 100 mg/Nm <sup>3</sup> for particulate matter.  | Complied. SPM emission well below stipulated limit of 50 mg/Nm <sup>3</sup>  |
| 4       | Development of SO <sub>2</sub> & NO <sub>x</sub> emission standards for coal based plants by December 2003.<br>- New/ expansion power projects shall meet the limit of SO <sub>2</sub> & NO <sub>x</sub> w.e.f. 1.1.2005.<br>- Existing power plants shall meet the limit of SO <sub>2</sub> & NO <sub>x</sub> w.e.f. 1.1.2006.  | Not Applicable   |
| 5       | Install/activate opacity meters/ continuous monitoring system in all the units by December 31, 2004 with proper calibration system.  | Continuous monitoring system installed in the stacks attached to Power Plant for monitoring of PM, SO <sub>2</sub> & NO <sub>x</sub> . |
| 6       | Development of guidelines/ standards for mercury and other toxic heavy metals emissions by December 2003.  | Not Applicable   |
| 7       | Review of stack height requirement and guidelines for power plants based on micro meteorological data by June 2003   | Not Applicable   |
| 8       | Implementation of use of beneficiated coal as per GOI Notification:<br>Power plants will sign fuel supply agreement (FSA) to meet the requirement as per the matrix prepared by CEA for compliance of the notification as short term measure.  | Not Applicable   |

|         |  |  |
|---------|--|--|
|         | Options/mechanism for setting up of coal washeries as a long term measure<br>* Coal India will up its own washery<br>* Sate Electricity Board to set up its own washery<br>* Coal India to ask private entrepreneurs to set up washeries for CIL and taking washing charges<br>* SEBs to select a private entrepreneur to set up a washery near pit- head installation of coal beneficiation plant |  |
| 9       | Power plants will indicate their requirement of abandoned coal mines for ash disposal & Coal India/ MOC shall provide the list of abandoned mines by June 2003 to CEA.   | Not Applicable   |
| 10      | Power plants will provide dry ash to the users outside the premises or uninterrupted access to the users within six months.  | It is being Complied                                       |
| 11      | Power Plants should provide dry fly ash free of cost to the users  | Dry fly ash is being provided to the users free of cost.   |
| 12      | State P.W.Ds/ construction & development agencies shall also adhere to the specifications/Schedules of CPWD for ash based products utilization MoEF will take up the matter with State Governments.  | Not Applicable   |
| 13 (i)  | New plants to be accorded environmental clearance on or after 1.04.2003 shall adopt dry fly ash extraction or dry disposal system or Medium (35-40%) ash concentration slurry disposal system or Lean phase with hundred percent ash waste re-circulation system depending upon site specific environmental situation.   | It has been installed as part of the Ash Handling Package. |
| 13 (ii) | Existing plants shall adopt any of the systems mentioned in 13(i) by December 2004   | Implemented  |
| 14      | Fly ash Mission shall prepare guidelines/manuals for fly ash utilization by March 2004.  | Noted  |
| 15      | New plants shall promote adoption of clean coal and clean power generation technologies<br>* Units will submit bank guarantee to respective SPCB   | Noted  |



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 and practices.

To achieve this, we shall :

- Continue to comply with all applicable legal 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 minimise waste generation and strengthen the practices for management of wastes.
- Work in partnership with regulatory authorities, relevant suppliers, contractors and all stakeholders, as applicable, to understand and initiate improvement actions.
- Adapt environmental performance over life cycle as an important input to the decision-making processes in the organisation.
- Raise environmental awareness at all levels of our operations, through training and effective communication, participation and consultation.
- Develop and follow appropriate communication system to inform the stakeholders, as applicable, about our environmental commitment and performance.

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

**Satish Pai**  
Managing Director

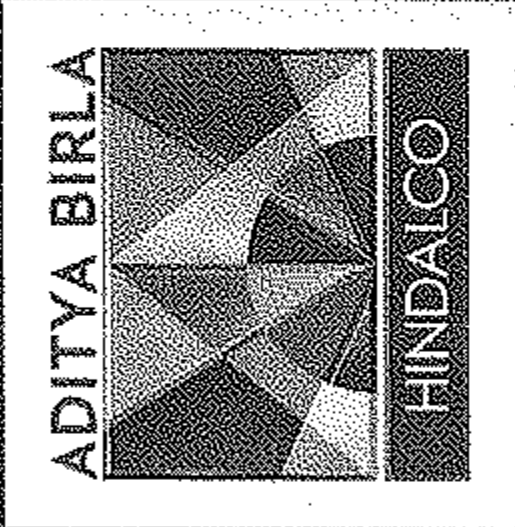
19<sup>th</sup> November 2016

**HINDALCO INDUSTRIES LIMITED**

**POINT-WISE COMPLIANCE TO THE POINTS RAISED DURING PUBLIC HEARING OF  
ADITYA ALUMINIUM**

| Sl. No. | POINTS RAISED  | COMPLIANCE  |
|---------|--|---|
| 1       | The Project Proponent should provide employment to the locals on priority basis.   | The industry has already provided employment to the locals based on the eligibility in the ongoing projects and they are committed to do so in the proposed expansion project.  |
| 2       | The Industry should establish an ITI training centre to train the young people in technical field so as to enable them for getting suitable employment in the plant.   | The industry has proposed to upgrade the existing ITI at Rengali to facilitate the training programme for the project affected people for the technical jobs.   |
| 3       | The Industry should carry out massive plantation in the vacant spaces of the surrounding villages, R.R colony etc. Trees which are not under the purview of the core plant area are to be protected and minimum 25% of the project area to be made green cover.  | The industry has already planted 2, 80,500 saplings inside the factory premises till FY 17-18. Also, the industry has started plantation in the vacant spaces of the surrounding R.R. Colony and have distributed saplings to the villagers.  |
| 4       | The Industry should inform the Public about the air pollution control measures to be adopted in the proposed plant for control of air pollution and also proactive measures to be taken by the company for control of rise in ambient temperature. Pollution measurement machines to be installed in every villages and pollution control committees to be formed to regulate the pollution. | The industry has installed ESPs, Bag filters etc to control air pollution. Greenbelt development and selecting the best environment friendly technology & equipment's for Smelter and Power plants are some of the proactive measures taken by the Company.<br><br>Online ambient air quality monitoring stations are being installed inside the plant area for information on real time information on different pollutants. |
| 5       | The Project Proponent should inform the public about the peripheral developmental works to be carried out in future.   | Peripheral developmental works are being carried out in consultation with the Garam Panchayat.  |
| 6       | The industry should make necessary arrangements for provision of drinking water in the affected area.  | The industry has been supplying drinking water by tankers, into the project affected villages in coordination with district Administration.   |
| 7       | The industry should make necessary arrangement to provide round the clock doctors for better medical service in the Lapanga area.  | The industry has already conducted 93 health camps and more than 19,000 patients have received free treatment by reputed doctors till date. We have already opened community dispensary at Khadiapali and recently we will start a new dispensary at Lapanga.   |
| 8       | The Industry should make alternate arrangement to source water instead of  | The industry is receiving water from the Hirakud Reservoir to meets its requirement   |

|    |  |  |
|----|--|--|
|    | deep bore wells in & around the project area.  | and Govt. of Odisha has approved for the same.   |
| 9  | The industry should give financial support to grow small scale industries in the localities.   | The industry has assured to give support to grow the livelihood of the villagers as per their CSR policy. However, many training programs have been conducted for self-employment such as Mushroom cultivation, Vegetable farming, Phenol making, Tailoring, Poultry, Kitchen garden & various social/health awareness programs, Money saving programs, etc., are being imparted to DP families. |
| 10 | The industry should pay financial support for each local traditional festival to villagers. Cremation ground should be provided in each village. Alternate Football ground to be provided to Bomaloi villagers as the company is occupying the existing football ground. | We are already providing financial support for each local Traditional festival to the villagers. We have already provided adequate land for football ground, Bomaloi.  |
| 11 | The industry should provide community toilets at the surrounding affected villages. Special care to be taken for physical handicapped persons in the affected areas  | We have already provided Toilets to each house in village pitapali & community toilets in village Bomaloi & Tileimal.  |

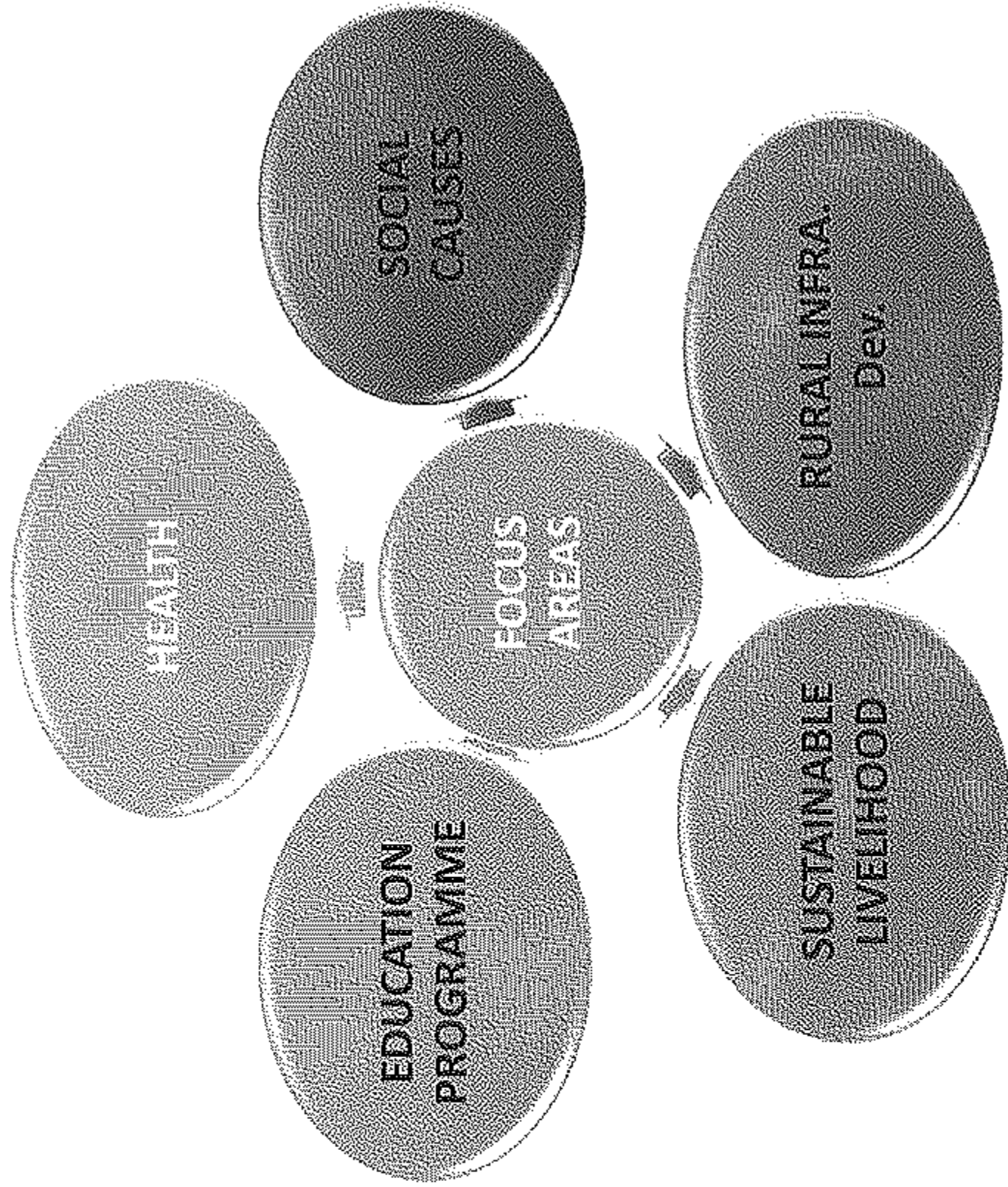


# CSR INITIATIVES (FY 2017-18)

UNIT: ADITYA ALUMINIUM



## Key Focus Areas of CSR



## Reaching

...

|              |             |
|--------------|-------------|
| • Villages   | - 18        |
| • Population | - 18000     |
| • Blocks     | - 2         |
| • District   | - Sambalpur |



## Expenses Status of Aditya Aluminium CSR

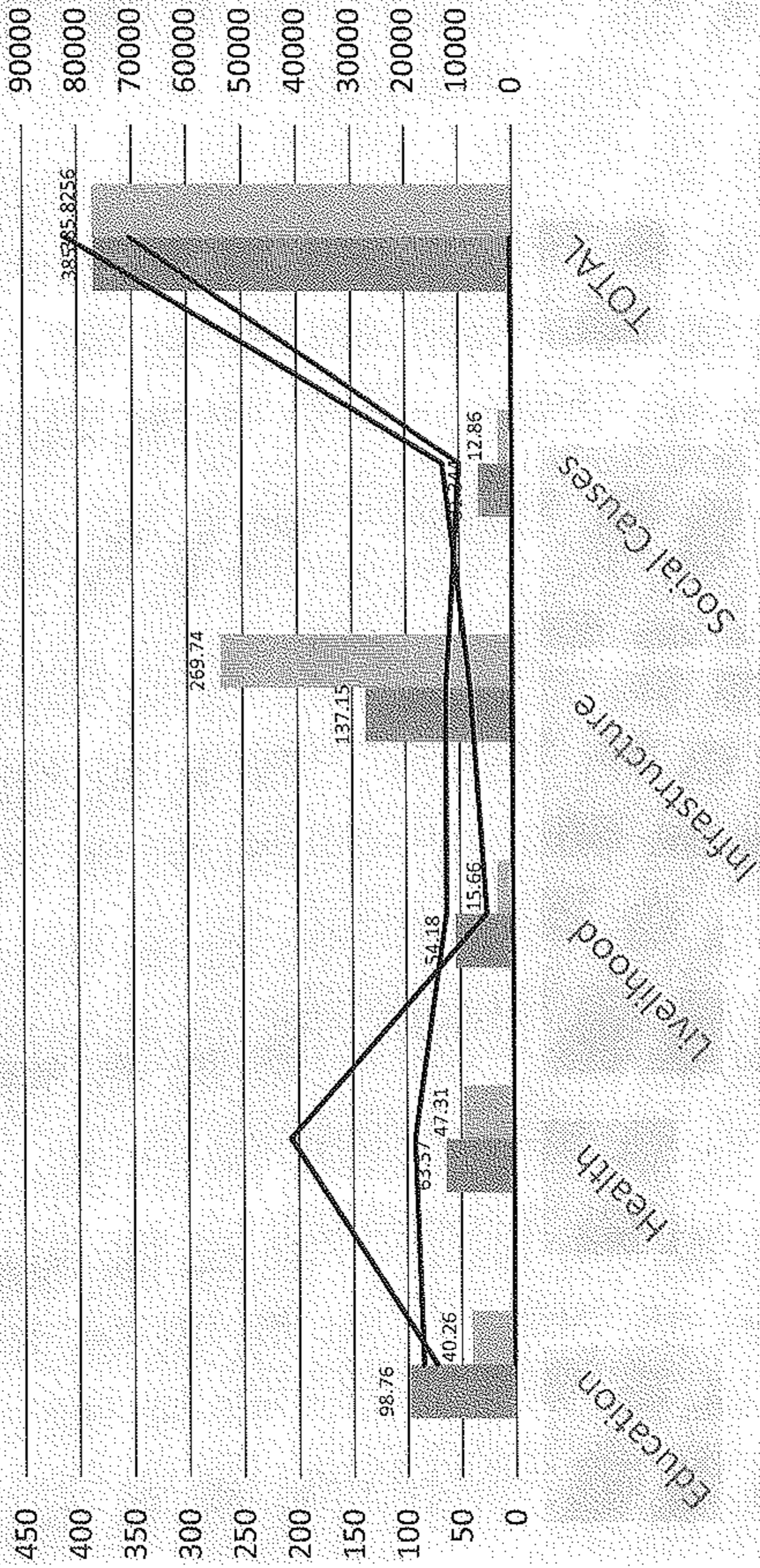
### Aditya Aluminium CSR Expenses Dash Board 2005 – 2018

| Sl. No             | Year    | Total CSR Expenses<br>(Rs in lakhs) | Remarks   |
|--------------------|---------|-------------------------------------|-----------|
| 1                  | 2005    | 2.4                                 | Completed |
| 2                  | 2006    | 2.826                               | Completed |
| 3                  | 2007    | 1.1                                 | Completed |
| 4                  | 2008    | 3.585                               | Completed |
| 5                  | 2009-10 | 654.19                              | Completed |
| 6                  | 2010-11 | 128.09                              | Completed |
| 7                  | 2011-12 | 91.29                               | Completed |
| 8                  | 2012-13 | 165.49                              | Completed |
| 9                  | 2013-14 | 114.455                             | Completed |
| 10                 | 2014-15 | 182.65                              | Completed |
| 11                 | 2015-16 | 626.18                              | Completed |
| 12                 | 2016-17 | 236                                 | Completed |
| 13                 | 2017-18 | 385                                 | Completed |
| <b>Grand Total</b> |         | <b>2593.256</b>                     |           |

## Plan and expenditure for the year 2017-18

| Plan CSR Project Activities | Plan Expenses (in Lakhs) | Target Beneficiaries | Expenses (in Lakhs) | Achieved Beneficiaries |
|-----------------------------|--------------------------|----------------------|---------------------|------------------------|
| Education                   | 98.76                    | 14542                | 40.26               | 16954                  |
| Health                      | 63.57                    | 41403                | 47.31               | 18478                  |
| Livelihood                  | 54.18                    | 5040                 | 15.66               | 12563                  |
| Infrastructure              | 137.15                   | 8000                 | 269.74              | 12498                  |
| Social Causes               | 31.344                   | 13017                | 12.86               | 9895                   |
| <b>TOTAL</b>                | <b>385</b>               | <b>82002</b>         | <b>385.83</b>       | <b>70388</b>           |

### CSR Project Plan vs Achievement

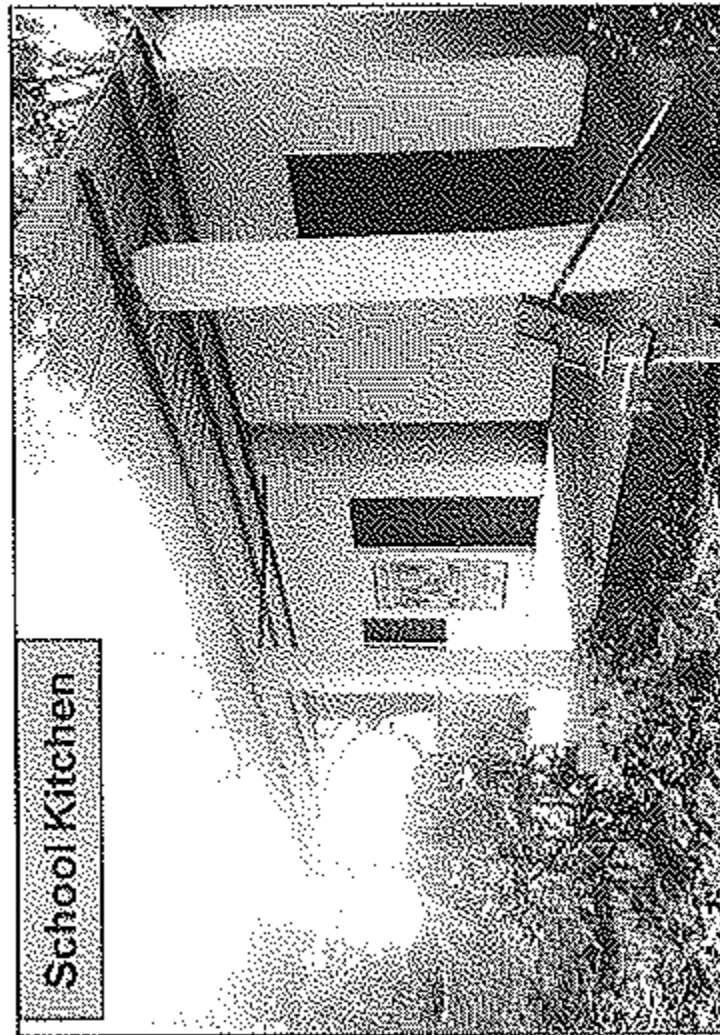


Plan Expenses (in Lakhs)
  Expenses (in Lakhs)
  Target Beneficiaries
  Expenses (in Lakhs)
  Target Beneficiaries
  Achieved Beneficiaries
  Achieved Beneficiaries

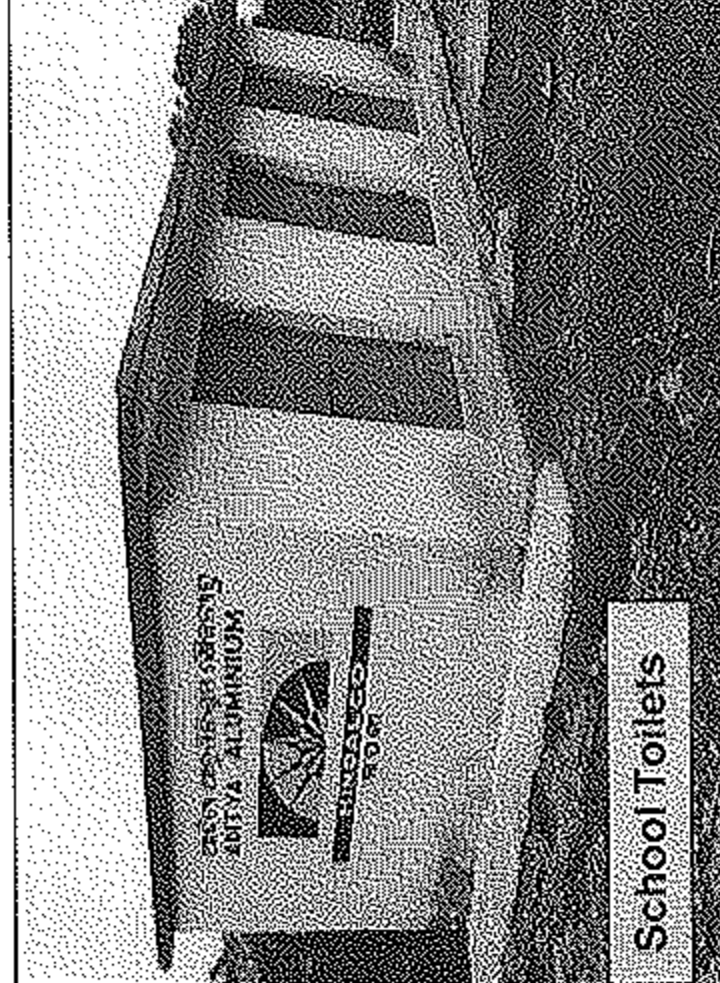


# Education:

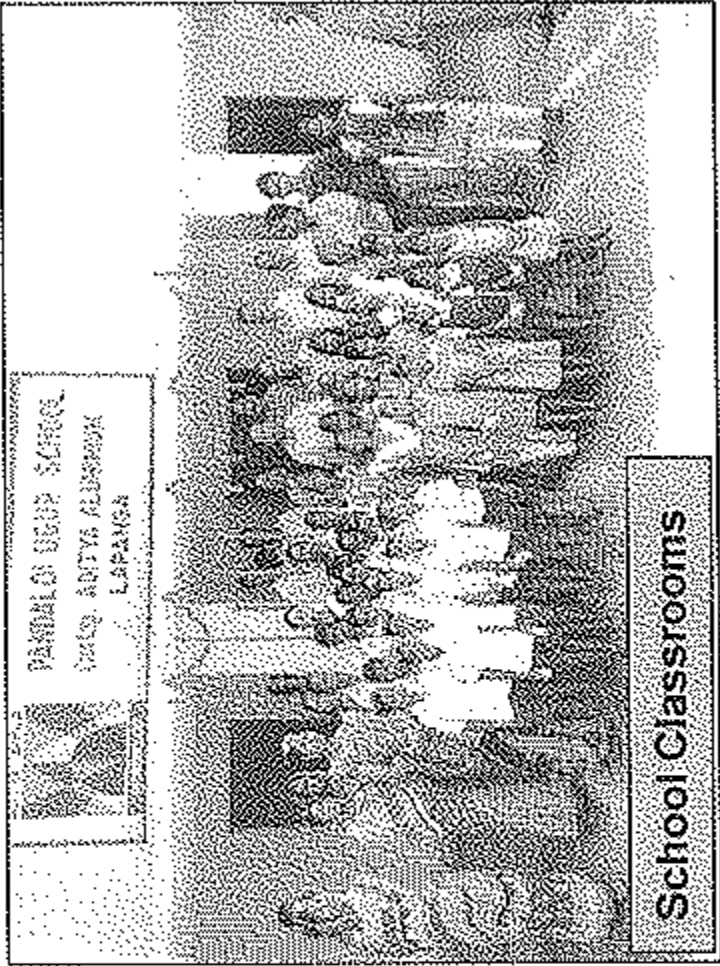
- School Education program - School Transport to Gopkani (Jagatpada) students
- Education Support program - Promotion of Adult Education with 02 Centre with 84 Students, - Free coaching Centre KALIKA, providing learning material etc. 104 students in 04 centers. - Parents Teacher Meet to improve education awareness among parents - Provide Bench and Desk to Primary School, Crockery and sports items for Anganwadis - School bags and stationaries distribution to primary school students - Students scholarship, Annual Functions, Annual Sports and National



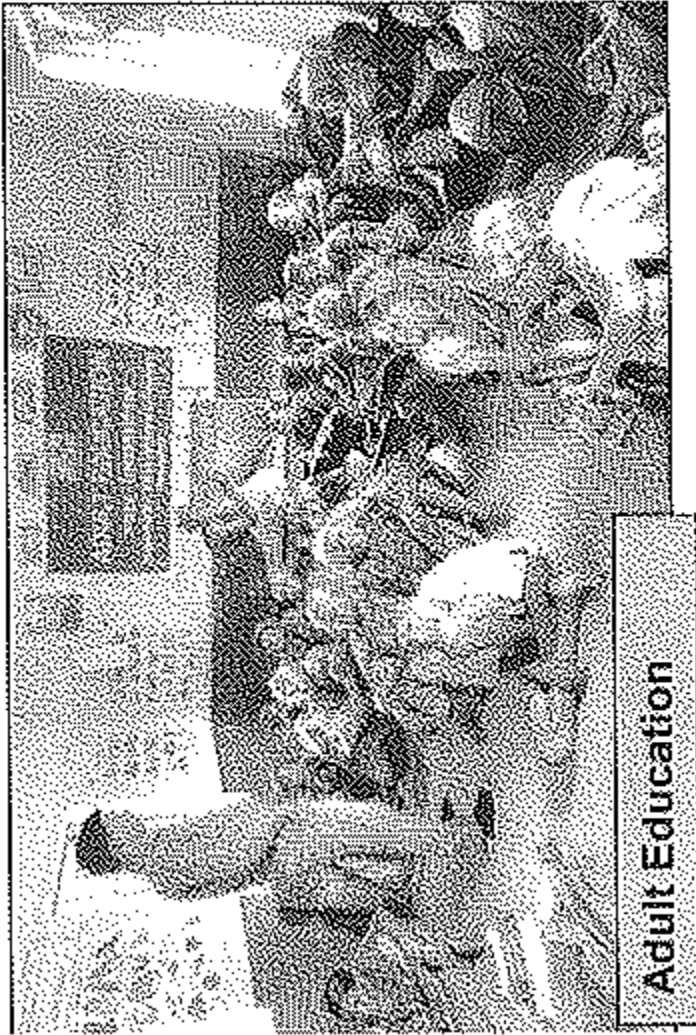
School Kitchen



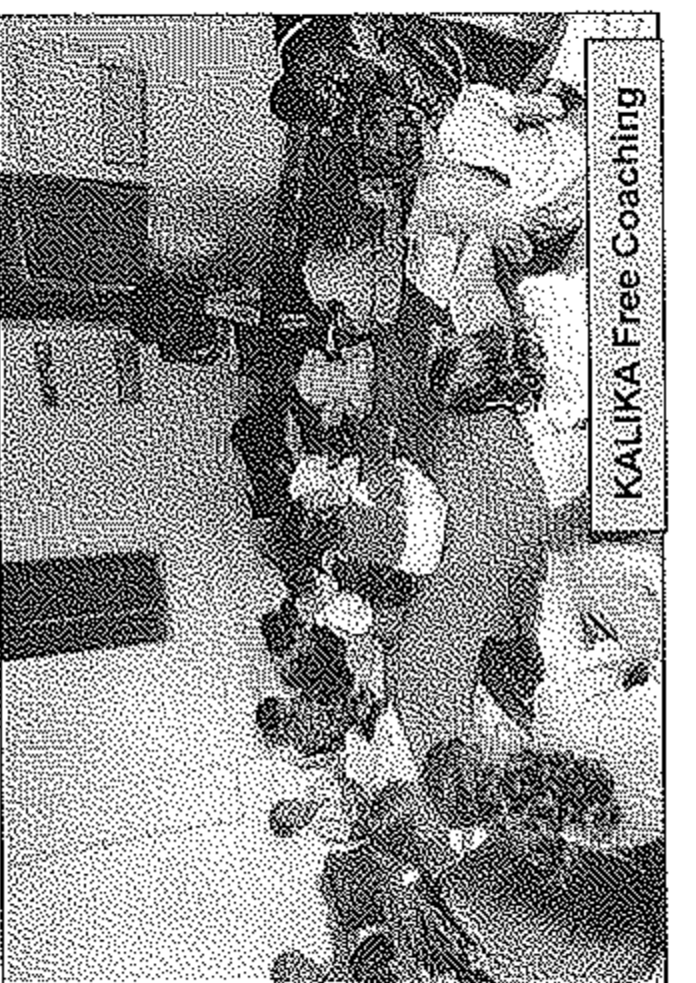
School Toilets



School Classrooms



Adult Education



KALIKA Free Coaching



School Health Camp

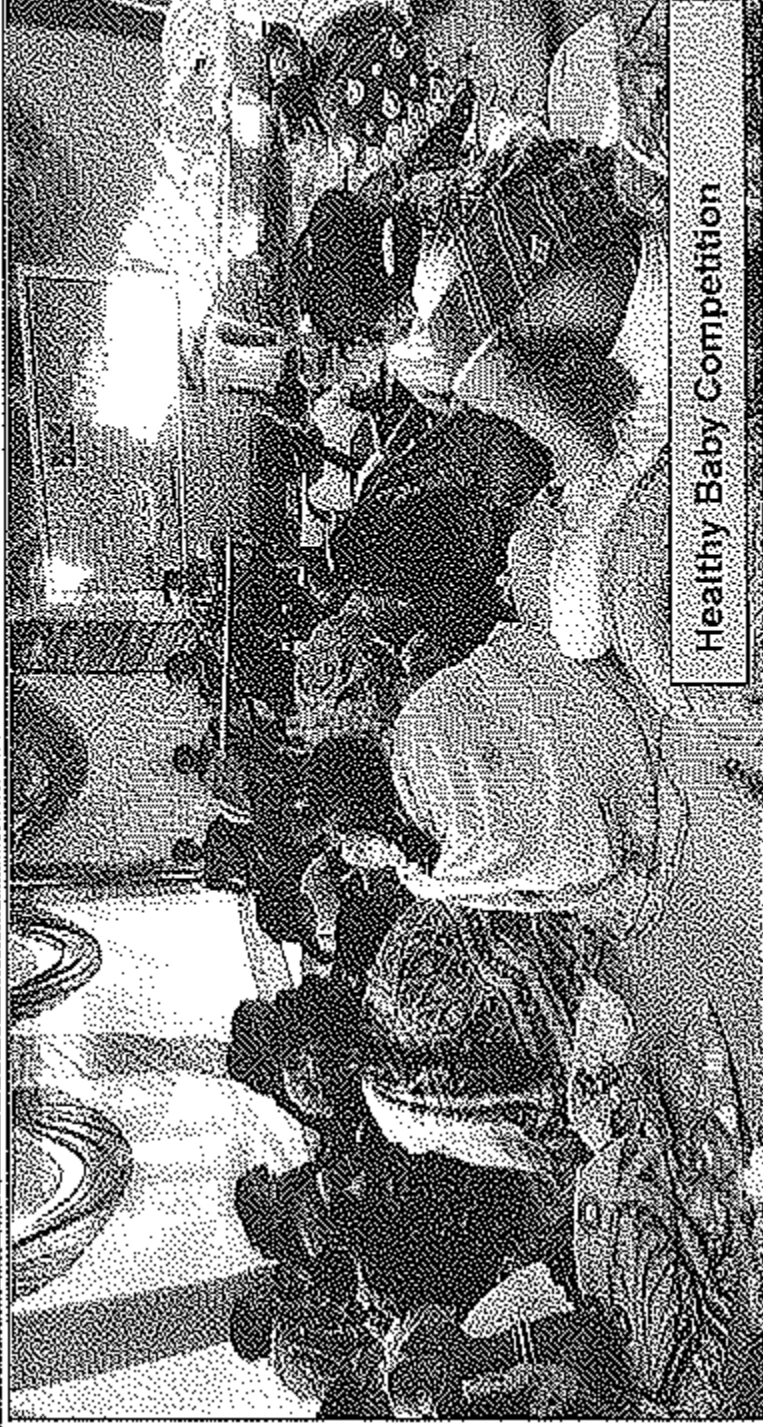


# health:

- Curative Healthcare - School Health Camps, Pulse Polio Program, Community Dispensary, Awareness on Health & Hygiene, Mother Child Care, Adolescent Girl Care, Malnutrition and many more, Financial Support to poor & needy Patients, Blood Donation Camps, Awareness on AIDS
- Preventive Healthcare - Dengue Awareness campaign in 21 nos Hamlets , 06 GPs



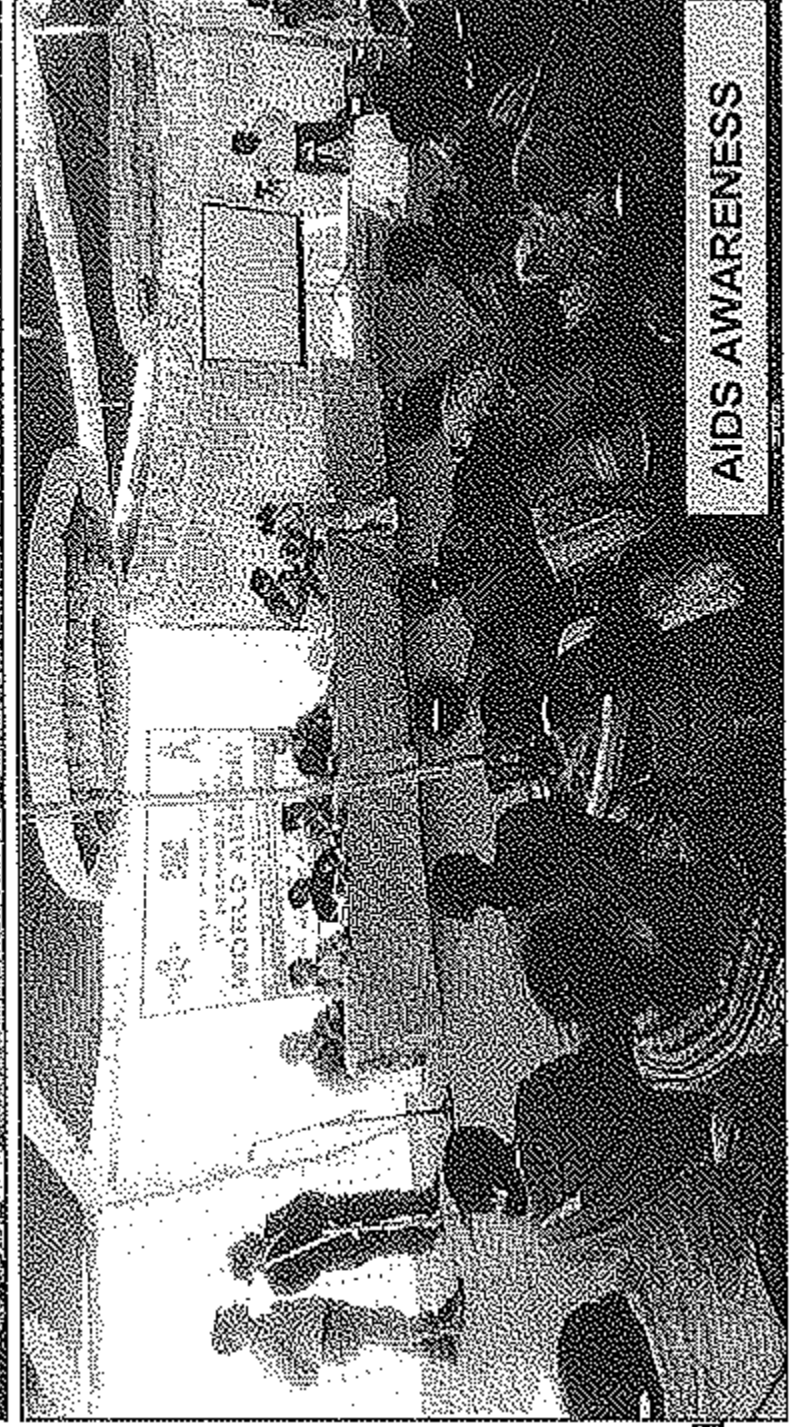
MDD Awareness



Healthy Baby Competition



Mother child health Care Awareness



AIDS AWARENESS

# Livelihood:

- ❖ Composite Pisciculture training, Orientation Programme and Financial help to women SHGs to Start business, Banaraja Chicks distribution.
- ❖ Distribution of various Fruit Bearing Plant Saplings
- ❖ Training on kitchen Gardening, Mushroom cultivation Training
- ❖ Promotion and Demonstration of Vegetable Cultivation, better agricultural practices for better use of land (demonstration of better varieties of vegetable, maize, including inputs)
- ❖ Vermi-compost Classroom Training and Demonstration, farm based activity (poultry, Dairy, Goat rearing, SRI etc.)

Tailoring training

Mushroom Cultivation



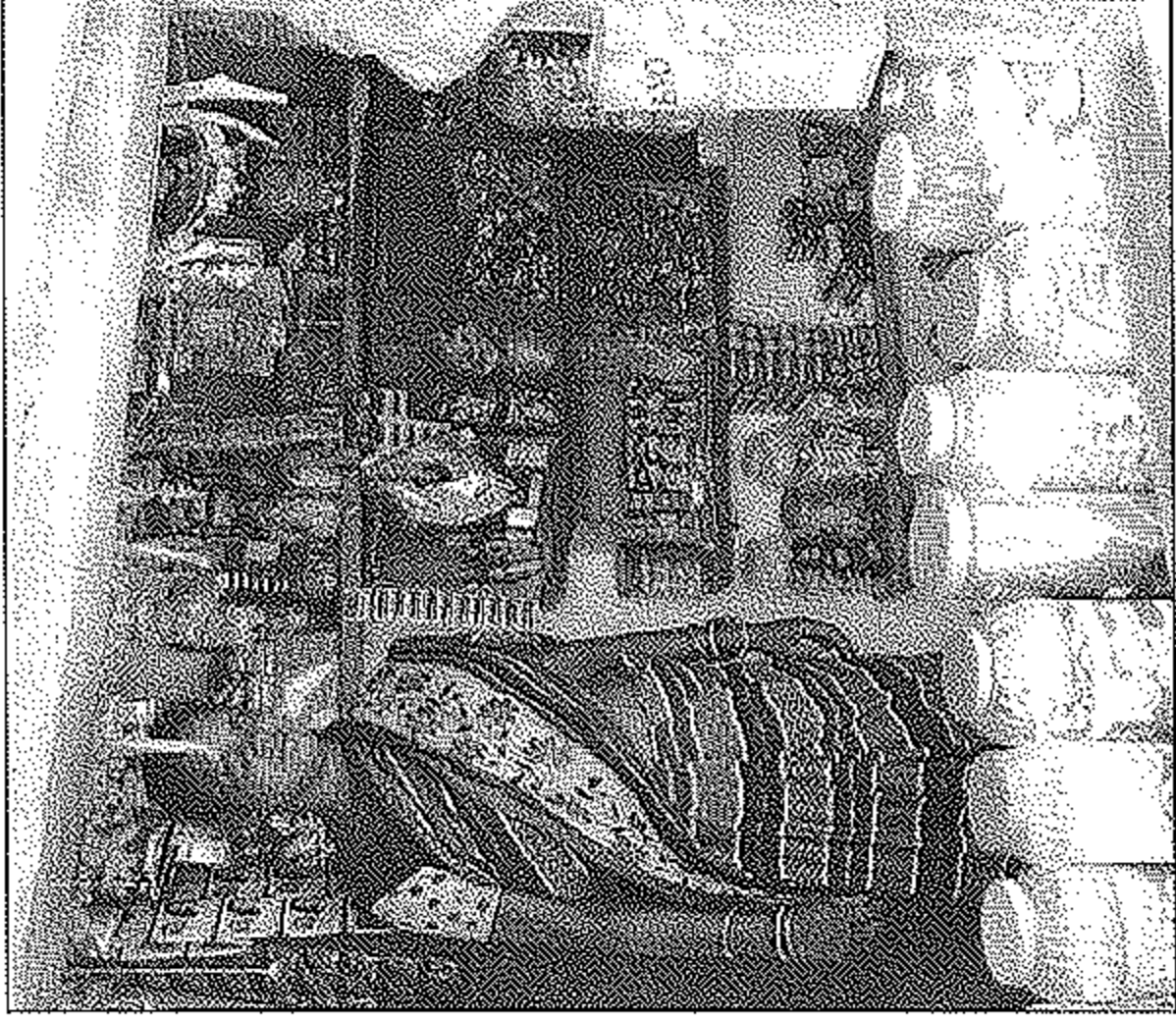
# Livelihood

**Objective:** To counsel, guide and streamline the members and non-members of women SHGs for adaptability of sustainable livelihood nearly 551 women from various SHGs are targeted beneficiaries.

**Time Period:** 2017-18

**Strategy:** Project Kaushal is mainly to make women SHGs change their behavior, knowledge and aptitude for adopting new behavior and business especially coming out of the traditional Bidi business mindset.

**Impact:** There were 35 nos of various training and capacity building programs are imparted creating valued behavior change in SHGs and there are 12 nos of individual entrepreneurs have ben helped so far.



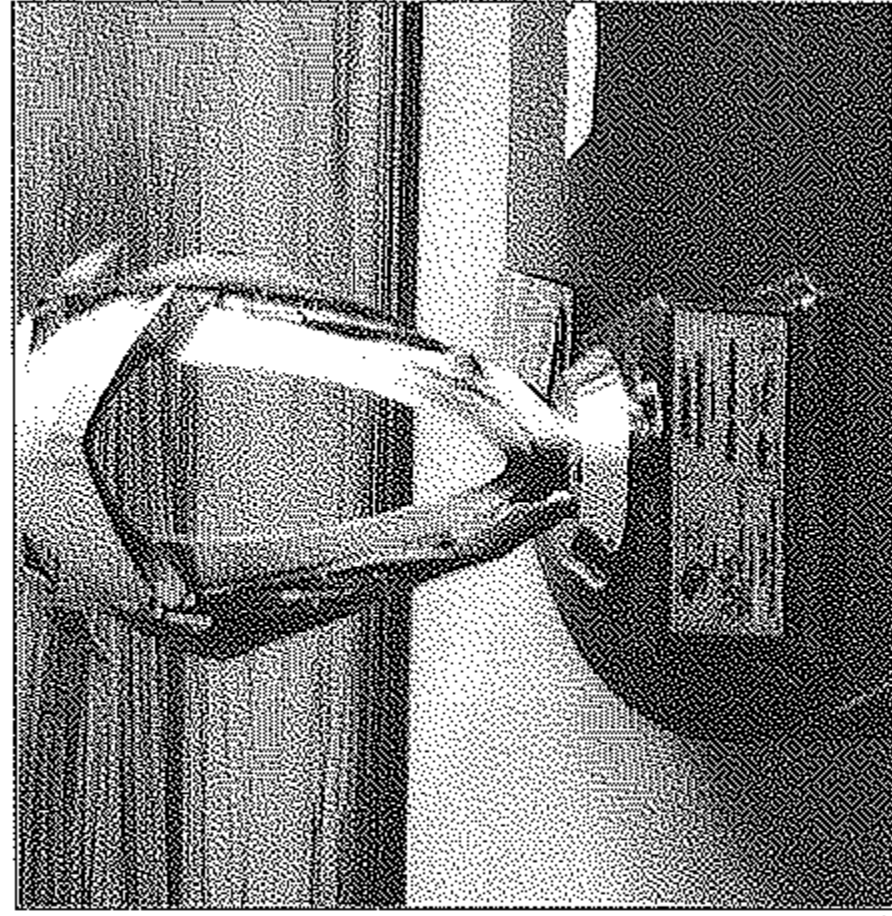
# CSR REWARDS AND RECOGNITION



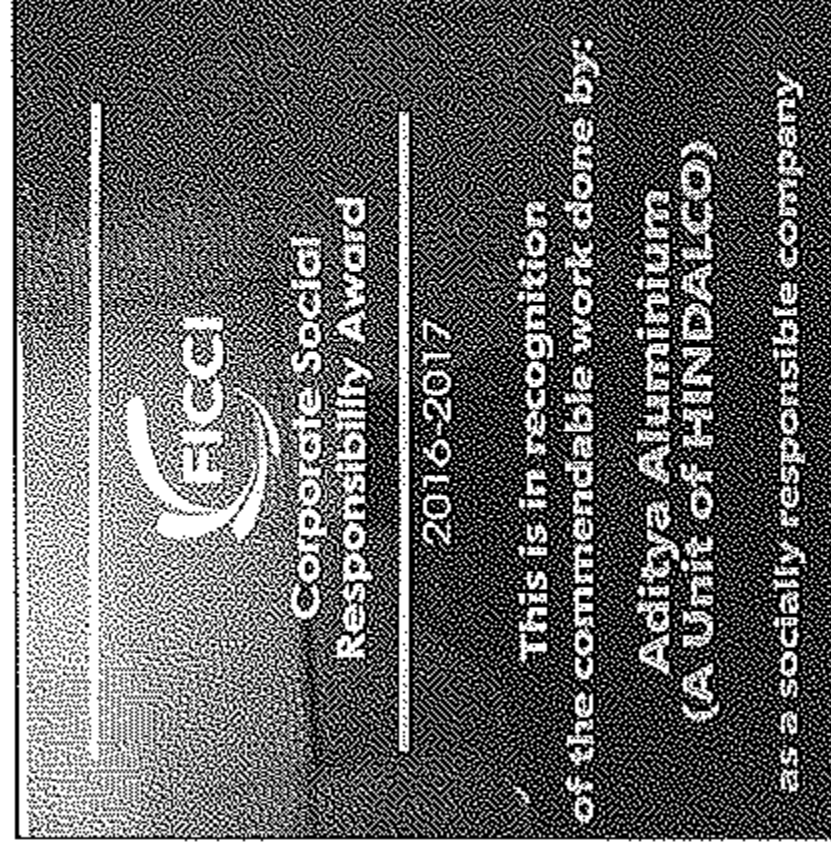
KALINGA CSR Award (IQEMS) – 20.05.17



INDIA CSR Award – 26.05.17

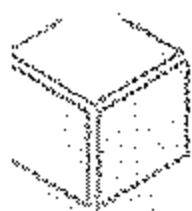


7th ASIA Best CSR Practices Award – 02.08.17



FICCI CSR Award – 31.11.17





Ref: Emulab/18/R-2313

Date: 30/04/18

## AMBIENT AIR QUALITY MONITORING REPORT

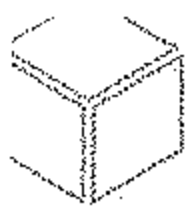
- Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
- Sampling Location : Monitoring Station No.- AAQMS-1 (Gumkarama)
- Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
- Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

| Date              | PARAMETERS                               |   |   |   |  |                            |   |   |  |                            |                            |                            |                           |
|-------------------|--|---|---|---|--|----------------------------|---|---|--|----------------------------|----------------------------|----------------------------|---------------------------|
|                   | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> )   | O <sub>3</sub><br>(µg/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | BaP<br>(ng/m <sup>3</sup> )                                | Ni<br>(ng/m <sup>3</sup> ) | Pb<br>(µg/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | F<br>(µg/m <sup>3</sup> ) |
| 04.11.2017        | 66.3                                     | 24.49                                     | 7.6                                     | 14.3                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 08.11.2017        | 59.4                                     | 28.3                                      | 8.1                                     | 15.4                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.11.2017        | 65.4                                     | 31.7                                      | 7.6                                     | 16.7                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 15.11.2017        | 67.3                                     | 31.4                                      | 8.1                                     | 18.9                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.11.2017        | 62.5                                     | 36.2                                      | 7.6                                     | 17.5                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 22.11.2017        | 57.6                                     | 33.7                                      | 8.3                                     | 17.7                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.11.2017        | 69.4                                     | 33.1                                      | 9.2                                     | 18.1                                      | <4.0                                   | 0.33                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 29.11.2017        | 68.5                                     | 31.8                                      | 8.6                                     | 18.2                                      | <4.0                                   | 0.32                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.12.2017        | 67.3                                     | 33.2                                      | 8.7                                     | 17.9                                      | <4.0                                   | 0.38                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.12.2017        | 69.1                                     | 36.8                                      | 8.9                                     | 18.2                                      | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 09.12.2017        | 68.4                                     | 34.1                                      | 10.4                                    | 17.6                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.12.2017        | 66.4                                     | 34.5                                      | 9.2                                     | 17.3                                      | <4.0                                   | 0.47                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 16.12.2017        | 74.3                                     | 37.9                                      | 8.3                                     | 18.1                                      | <4.0                                   | 0.37                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.12.2017        | 68.9                                     | 33.1                                      | 9.1                                     | 19.2                                      | <4.0                                   | 0.51                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 23.12.2017        | 69.7                                     | 37.5                                      | 8.4                                     | 18.7                                      | <4.0                                   | 0.49                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.12.2017        | 71.3                                     | 42.4                                      | 9.1                                     | 18.6                                      | <4.0                                   | 0.45                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 30.12.2017        | 70.4                                     | 41.3                                      | 10.2                                    | 19.4                                      | <4.0                                   | 0.43                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 31.12.2017        | 69.4                                     | 43.9                                      | 8.4                                     | 20.1                                      | <4.0                                   | 0.46                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 04.01.2018        | 68.7                                     | 34.3                                      | 9.3                                     | 21.4                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 07.01.2018        | 73.7                                     | 42.4                                      | 9.1                                     | 19.7                                      | <4.0                                   | 0.44                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 10.01.2018        | 71.1                                     | 46.3                                      | 8.7                                     | 19.4                                      | <4.0                                   | 0.37                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 14.01.2018        | 68.2                                     | 41.5                                      | 9.3                                     | 19.8                                      | <4.0                                   | 0.39                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 17.01.2018        | 60.1                                     | 49.4                                      | 9.1                                     | 18.7                                      | <4.0                                   | 0.43                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 21.01.2018        | 62.1                                     | 37.5                                      | 10.2                                    | 19.7                                      | <4.0                                   | 0.47                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 24.01.2018        | 65.4                                     | 43.9                                      | 8.6                                     | 21.3                                      | <4.0                                   | 0.52                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 28.01.2018        | 63.8                                     | 42.1                                      | 9.1                                     | 19.8                                      | <4.0                                   | 0.48                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| NAAQ Standard     | 100                                      | 60  | 80                                      | 80  | 100                                    | 4                          | 400                                     | 05  | 01   | 20                         | 1.0                        | 06                         | ...                       |
| Quarterly Average | 67.31                                    | 37.03                                     | 8.82                                    | 18.53                                     | <4.0                                   | 0.40                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| Testing method    | Gravimetric                              | Gravimetric                               | Improved West and Gaeke method          | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method                        | NDIR Spectroscopy          | Indo phenol blue method                 | Absorption & Desorption followed by GC analysis       | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling  | AAS method after sampling  | AAS method after sampling  | Zirconium SPADNS Method   |

DL Values: SO<sub>2</sub><4 µg/m<sup>3</sup>, NO<sub>x</sub><9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As<0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, F<0.01 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>



For Visiontek Consultancy Services Pvt. Ltd.



Ref: Env/lab/18/R-2314


Date: 30/04/18

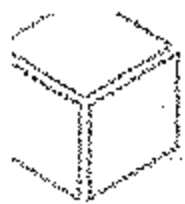
## AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling Location : Monitoring Station No.- AAQMS-2 (Ghichamura)
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

| Date              | PARAMETERS                               |   |   |   |  |                            |   |   |  |                            |                            |                            |                           |
|-------------------|--|---|---|---|--|----------------------------|---|---|--|----------------------------|----------------------------|----------------------------|---------------------------|
|                   | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> )   | O <sub>3</sub><br>(µg/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | BaP<br>(ng/m <sup>3</sup> )                                | Ni<br>(ng/m <sup>3</sup> ) | Pb<br>(µg/m <sup>3</sup> ) | As<br>(µg/m <sup>3</sup> ) | F<br>(µg/m <sup>3</sup> ) |
| 04.11.2017        | 43.4                                     | 26.7                                      | <4.0                                    | 10.4                                      | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 08.11.2017        | 49.7                                     | 26.5                                      | <4.0                                    | 9.8                                       | <4.0                                   | 0.22                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.11.2017        | 52.4                                     | 23.4                                      | 4.9                                     | 11.6                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 15.11.2017        | 67.8                                     | 29.4                                      | 8.4                                     | 16.4                                      | <4.0                                   | 0.16                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.11.2017        | 48.9                                     | 21.2                                      | 8.7                                     | 16.4                                      | <4.0                                   | 0.18                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 22.11.2017        | 53.7                                     | 25.4                                      | 7.6                                     | 15.3                                      | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.11.2017        | 59.4                                     | 26.1                                      | 6.7                                     | 14.3                                      | <4.0                                   | 0.20                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 29.11.2017        | 61.8                                     | 30.2                                      | 11.4                                    | 16.4                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.12.2017        | 66.7                                     | 34.1                                      | 10.4                                    | 13.4                                      | <4.0                                   | 0.24                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.12.2017        | 62.4                                     | 29.8                                      | 7.6                                     | 10.8                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 09.12.2017        | 61.5                                     | 28.7                                      | 8.1                                     | 11.4                                      | <4.0                                   | 0.24                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.12.2017        | 68.4                                     | 37.1                                      | 7.6                                     | 10.6                                      | <4.0                                   | 0.24                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 16.12.2017        | 68.4                                     | 33.1                                      | 7.9                                     | 10.8                                      | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.12.2017        | 67.3                                     | 34.1                                      | 8.1                                     | 9.6                                       | <4.0                                   | 0.14                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 23.12.2017        | 63.4                                     | 31.3                                      | 8.3                                     | 10.1                                      | <4.0                                   | 0.18                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.12.2017        | 69.6                                     | 31.2                                      | 7.4                                     | 11.1                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 30.12.2017        | 72.2                                     | 35.7                                      | 8.2                                     | 10.1                                      | <4.0                                   | 0.22                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 31.12.2017        | 73.2                                     | 39.8                                      | 8.4                                     | 10.2                                      | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 04.01.2018        | 71.3                                     | 39.6                                      | 7.6                                     | 10.1                                      | <4.0                                   | 0.18                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 07.01.2018        | 67.8                                     | 34.6                                      | 9.1                                     | 10.9                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 10.01.2018        | 64.2                                     | 34.8                                      | 8.4                                     | 16.4                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 14.01.2018        | 73.6                                     | 43.2                                      | 7.6                                     | 18.4                                      | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 17.01.2018        | 77.4                                     | 41.3                                      | 8.4                                     | 14.6                                      | <4.0                                   | 0.24                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 21.01.2018        | 76.3                                     | 43.1                                      | 7.9                                     | 17.3                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 24.01.2018        | 73.5                                     | 39.1                                      | 8.3                                     | 17.6                                      | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 28.01.2018        | 69.4                                     | 37.4                                      | 6.7                                     | 18.4                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| NAAQ Standard     | 100                                      | 60  | 80                                      | 80  | 100                                    | 4                          | 400                                     | 05  | 01   | 20                         | 1.0                        | 06                         | --                        |
| Quarterly Average | 64.76                                    | 33.07                                     | 8.07                                    | 13.37                                     | <4.0                                   | 0.22                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| Testing method    | Gravimetric                              | Gravimetric                               | Improved West and Gaeke method          | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method                        | NDIR Spectroscopy          | Indo phenol blue method                 | Absorption & Desorption followed by GC analysis       | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling  | AAS method after sampling  | AAS method after sampling  | Zirconium SPADNS Method   |

IDL Values: SO<sub>2</sub><4 µg/m<sup>3</sup>, NO<sub>x</sub><9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As<0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, F<0.01 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>

  
 For Visiontek Consultancy Services Pvt. Ltd.



Ref: Enwlab/18/R-2315

Date: 30/04/18

## AMBIENT AIR QUALITY MONITORING REPORT

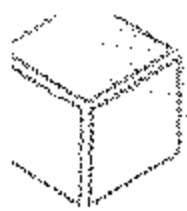
1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling Location : Monitoring Station No.- AAQMS-3 (Tileimal)
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

| Date              | PARAMETERS                               |   |   |   |  |                            |   |   |  |                            |                            |                            |                           |
|-------------------|--|---|---|---|--|----------------------------|---|---|--|----------------------------|----------------------------|----------------------------|---------------------------|
|                   | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> )   | O <sub>3</sub><br>(µg/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | BaP<br>(ng/m <sup>3</sup> )                                | Ni<br>(ng/m <sup>3</sup> ) | Pb<br>(µg/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | F<br>(µg/m <sup>3</sup> ) |
| 01.11.2017        | 42.8                                     | 24.5                                      | <4.0                                    | 9.6                                       | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.11.2017        | 46.4                                     | 22.6                                      | 7.6                                     | 10.4                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 08.11.2017        | 44.8                                     | 24.3                                      | 8.9                                     | 10.6                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.11.2017        | 43.2                                     | 21.4                                      | <4.0                                    | 9.8                                       | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 15.11.2017        | 41.9                                     | 25.6                                      | <4.0                                    | 9.6                                       | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.11.2017        | 46.2                                     | 23.4                                      | 6.9                                     | 10.3                                      | <4.0                                   | 0.25                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 22.11.2017        | 51.2                                     | 27.6                                      | 4.7                                     | 10.6                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.11.2017        | 59.4                                     | 31.2                                      | <4.0                                    | 9.6                                       | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 29.11.2017        | 57.4                                     | 27.4                                      | 5.6                                     | 10.5                                      | <4.0                                   | 0.24                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.12.2017        | 52.3                                     | 36.3                                      | 6.1                                     | 12.3                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.12.2017        | 53.4                                     | 31.2                                      | 7.3                                     | 11.2                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 09.12.2017        | 49.8                                     | 26.4                                      | <4.0                                    | 9.7                                       | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.12.2017        | 54.6                                     | 31.4                                      | 8.2                                     | 10.6                                      | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 16.12.2017        | 63.2                                     | 33.9                                      | 9.3                                     | 10.5                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.12.2017        | 67.8                                     | 37.1                                      | <4.0                                    | 10.7                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 23.12.2017        | 72.4                                     | 39.4                                      | <4.0                                    | 9.5                                       | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.12.2017        | 63.4                                     | 31.7                                      | <4.0                                    | 9.7                                       | <4.0                                   | 0.28                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 30.12.2017        | 66.4                                     | 36.3                                      | 7.8                                     | 10.8                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.01.2018        | 46.4                                     | 31.3                                      | <4.0                                    | 11.4                                      | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.01.2018        | 53.1                                     | 29.2                                      | 5.6                                     | 13.6                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 10.01.2018        | 55.6                                     | 31.4                                      | 4.9                                     | 16.4                                      | <4.0                                   | 0.24                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 14.01.2018        | 59.2                                     | 33.6                                      | <4.0                                    | 15.1                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 17.01.2018        | 58.4                                     | 29.4                                      | 7.9                                     | 13.4                                      | <4.0                                   | 0.33                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 21.01.2018        | 51.3                                     | 31.2                                      | <4.0                                    | 14.3                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 24.01.2018        | 55.3                                     | 28.2                                      | 8.1                                     | 15.2                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 28.01.2018        | 56.7                                     | 23.6                                      | 7.9                                     | 11.6                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| NAAQ Standard     | 100                                      | 60  | 80                                      | 80  | 100                                    | 4                          | 400                                     | 05  | 01   | 20                         | 1.0                        | 06                         | --                        |
| Quarterly Average | 54.33                                    | 29.60                                     | 7.12                                    | 11.42                                     | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| Testing method    | Gravimetric                              | Gravimetric                               | Improved West and Gaeke method          | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method                        | NDIR Spectroscopy          | Indo phenol blue method                 | Absorption & Desorption followed by GC analysis       | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling  | AAS method after sampling  | AAS method after sampling  | Zirconium SPADNS Method   |

IDL Values: SO<sub>2</sub><4 µg/m<sup>3</sup>, NO<sub>x</sub><9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As<0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, F<0.01 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>



For Visiontek Consultancy Services Pvt. Ltd.



Ref: Enn/lab/18/R-2316

Date: 30/04/18

## AMBIENT AIR QUALITY MONITORING REPORT

- Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
- Sampling Location : Monitoring Station No.- AAQMS-4 (Bomalo)
- Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
- Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

| Date              | PARAMETERS                               |   |   |   |  |                            |   |   |  |                            |                            |                            |                           |
|-------------------|--|---|---|---|--|----------------------------|---|---|--|----------------------------|----------------------------|----------------------------|---------------------------|
|                   | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> )   | O <sub>3</sub><br>(µg/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | BaP<br>(ng/m <sup>3</sup> )                                | Ni<br>(ng/m <sup>3</sup> ) | Pb<br>(µg/m <sup>3</sup> ) | As<br>(µg/m <sup>3</sup> ) | F<br>(µg/m <sup>3</sup> ) |
| 01.11.2017        | 51.2                                     | 29.3                                      | 9.4                                     | 17.3                                      | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.11.2017        | 57.3                                     | 31.1                                      | 9.3                                     | 19.2                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 08.11.2017        | 55.6                                     | 33.2                                      | 10.2                                    | 21.3                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.11.2017        | 54.3                                     | 32.4                                      | 9.7                                     | 12.9                                      | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 15.11.2017        | 61.2                                     | 26.4                                      | 10.4                                    | 14.3                                      | <4.0                                   | 0.30                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.11.2017        | 53.6                                     | 21.8                                      | 11.3                                    | 16.4                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 22.11.2017        | 57.6                                     | 22.5                                      | 10.2                                    | 15.3                                      | <4.0                                   | 0.33                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.11.2017        | 56.4                                     | 23.6                                      | 11.4                                    | 17.4                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 29.11.2017        | 54.6                                     | 22.1                                      | 12.2                                    | 16.3                                      | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.12.2017        | 59.1                                     | 23.4                                      | 9.4                                     | 14.2                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.12.2017        | 58.6                                     | 24.8                                      | 10.3                                    | 17.6                                      | <4.0                                   | 0.37                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 09.12.2017        | 66.3                                     | 36.1                                      | 9.7                                     | 19.2                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.12.2017        | 67.1                                     | 33.6                                      | 10.4                                    | 18.4                                      | <4.0                                   | 0.33                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 16.12.2017        | 76.3                                     | 41.2                                      | 11.3                                    | 15.2                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.12.2017        | 73.2                                     | 34.2                                      | 12.7                                    | 16.4                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 23.12.2017        | 75.4                                     | 33.7                                      | 11.6                                    | 17.3                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.12.2017        | 69.8                                     | 31.6                                      | 10.3                                    | 15.3                                      | <4.0                                   | 0.28                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 30.12.2017        | 71.3                                     | 39.4                                      | 11.5                                    | 16.4                                      | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.01.2018        | 61.2                                     | 31.2                                      | 7.6                                     | 19.1                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.01.2018        | 66.3                                     | 29.6                                      | 9.6                                     | 17.2                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 10.01.2018        | 58.5                                     | 34.6                                      | 8.6                                     | 18.4                                      | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 14.01.2018        | 59.7                                     | 36.1                                      | 7.4                                     | 18.6                                      | <4.0                                   | 0.33                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 17.01.2018        | 68.7                                     | 33.1                                      | 6.7                                     | 15.7                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 21.01.2018        | 67.3                                     | 34.2                                      | 7.5                                     | 16.4                                      | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 24.01.2018        | 64.5                                     | 29.6                                      | 7.6                                     | 17.2                                      | <4.0                                   | 0.28                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 28.01.2018        | 66.9                                     | 25.7                                      | 10.4                                    | 13.6                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| NAAQ Standard     | 100                                      | 60  | 80                                      | 80  | 100                                    | 4                          | 400                                     | 05  | 01   | 20                         | 1.0                        | 06                         | ..                        |
| Quarterly Average | 62.77                                    | 30.56                                     | 9.87                                    | 16.79                                     | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| Testing method    | Gravimetric                              | Gravimetric                               | Improved West and Gaeke method          | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method                        | NDIR Spectroscopy          | Indo phenol blue method                 | Absorption & Desorption followed by GC analysis       | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling  | AAS method after sampling  | AAS method after sampling  | Zirconium SPADNS Method   |

IDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub>< 4 µg/m<sup>3</sup>, NH<sub>3</sub>< 20 µg/m<sup>3</sup>, Ni< 0.01 ng/m<sup>3</sup>, As< 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub>< 0.001 µg/m<sup>3</sup>, BaP< 0.002 ng/m<sup>3</sup>, Pb< 0.001 µg/m<sup>3</sup>, F< 0.01 µg/m<sup>3</sup>, CO< 0.1 mg/m<sup>3</sup>

For Visiontek Consultancy Services Pvt. Ltd.



Ref: Envtlab/18/R-2317

Date: 30/04/18

## AMBIENT AIR QUALITY MONITORING REPORT

- Name of Industry : M/s Hindaleo Industries Ltd (Unit- Aditya Aluminium); Lapanga
- Sampling Location : Monitoring Station No.- AAQMS-5 (Kapulas)
- Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
- Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

| Date              | PARAMETERS                               |   |   |   |  |                            |   |   |  |                            |                            |                            |                           |
|-------------------|--|---|---|---|--|----------------------------|---|---|--|----------------------------|----------------------------|----------------------------|---------------------------|
|                   | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> )   | O <sub>3</sub><br>(µg/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | BaP<br>(ng/m <sup>3</sup> )                                | Ni<br>(ng/m <sup>3</sup> ) | Pb<br>(µg/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | F<br>(µg/m <sup>3</sup> ) |
| 04.11.2017        | 58.9                                     | 28.6                                      | 5.8                                     | 16.4                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 08.11.2017        | 57.4                                     | 26.9                                      | 5.6                                     | 17.8                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.11.2017        | 59.3                                     | 27.2                                      | 6.1                                     | 14.1                                      | <4.0                                   | 0.28                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 15.11.2017        | 61.2                                     | 26.5                                      | 5.4                                     | 13.2                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.11.2017        | 59.4                                     | 30.2                                      | 5.8                                     | 19.4                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 22.11.2017        | 61.7                                     | 30.6                                      | 6.1                                     | 20.1                                      | <4.0                                   | 0.28                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.11.2017        | 63.4                                     | 31.2                                      | 7.6                                     | 16.3                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 29.11.2017        | 62.7                                     | 30.2                                      | 6.2                                     | 17.1                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.12.2017        | 58.2                                     | 31.2                                      | 7.6                                     | 18.5                                      | <4.0                                   | 0.38                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.12.2017        | 63.9                                     | 31.2                                      | 6.5                                     | 16.9                                      | <4.0                                   | 0.33                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 09.12.2017        | 66.7                                     | 30.1                                      | 7.4                                     | 18.6                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.12.2017        | 69.2                                     | 28.8                                      | 7.2                                     | 17.8                                      | <4.0                                   | 0.38                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 16.12.2017        | 67.8                                     | 27.5                                      | 6.4                                     | 18.9                                      | <4.0                                   | 0.30                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.12.2017        | 59.2                                     | 29.6                                      | 8.1                                     | 19.7                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 23.12.2017        | 60.8                                     | 30.4                                      | 7.3                                     | 14.4                                      | <4.0                                   | 0.41                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.12.2017        | 67.3                                     | 32.6                                      | 6.7                                     | 17.8                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 30.12.2017        | 66.1                                     | 31.2                                      | 5.9                                     | 16.2                                      | <4.0                                   | 0.35                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.01.2018        | 59.1                                     | 22.7                                      | 5.8                                     | 16.7                                      | <4.0                                   | 0.22                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.01.2018        | 67.7                                     | 23.6                                      | 5.9                                     | 12.9                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 10.01.2018        | 72.5                                     | 28.1                                      | 6.3                                     | 13.8                                      | <4.0                                   | 0.28                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 14.01.2018        | 67.4                                     | 27.3                                      | 6.9                                     | 14.1                                      | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 17.01.2018        | 59.1                                     | 29.1                                      | 7.2                                     | 17.6                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 21.01.2018        | 68.2                                     | 27.9                                      | 8.7                                     | 13.2                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 24.01.2018        | 66.1                                     | 26.2                                      | 9.4                                     | 14.6                                      | <4.0                                   | 0.28                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 28.01.2018        | 63.4                                     | 26.5                                      | 10.8                                    | 17.4                                      | <4.0                                   | 0.22                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 31.01.2018        | 65.4                                     | 34.6                                      | 12.1                                    | 19.1                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| NAAQ Standard     | 100                                      | 60  | 80                                      | 80  | 100                                    | 4                          | 400                                     | 05  | 01   | 20                         | 1.0                        | 06                         | --                        |
| Quarterly Average | 63.54                                    | 28.85                                     | 7.11                                    | 16.64                                     | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| Testing method    | Gravimetric                              | Gravimetric                               | Improved West and Gaeke method          | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method                        | NDIR Spectroscopy          | Indo phenol blue method                 | Absorption & Desorption followed by GC analysis       | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling  | AAS method after sampling  | AAS method after sampling  | Zirconium SPADNS Method   |

DL Values: SO<sub>2</sub><4 µg/m<sup>3</sup>, NO<sub>x</sub><9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As<0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, F<0.01 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>



For Visiontek Consultancy Services Pvt. Ltd.



Ref: Enmlab/18/R-2318

Date: 30/04/18

## AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling Location : Monitoring Station No.- AAQMS-6 (Phulchanghal)
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

| Date              | PARAMETERS                               |   |   |   |  |                            |   |   |  |                            |                            |                            |                           |
|-------------------|--|---|---|---|--|----------------------------|---|---|--|----------------------------|----------------------------|----------------------------|---------------------------|
|                   | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> )   | O <sub>3</sub><br>(µg/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | BaP<br>(ng/m <sup>3</sup> )                                | Ni<br>(ng/m <sup>3</sup> ) | Pb<br>(µg/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | F<br>(µg/m <sup>3</sup> ) |
| 04.11.2017        | 33.7                                     | 27.2                                      | 5.4                                     | 10.1                                      | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 08.11.2017        | 52.4                                     | 25.4                                      | 6.6                                     | 10.5                                      | <4.0                                   | 0.17                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.11.2017        | 53.6                                     | 27.9                                      | 7.8                                     | 13.2                                      | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 15.11.2017        | 49.5                                     | 24.2                                      | 6.5                                     | 16.6                                      | <4.0                                   | 0.16                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.11.2017        | 46.8                                     | 23.4                                      | 7.3                                     | 15.8                                      | <4.0                                   | 0.17                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 22.11.2017        | 51.7                                     | 25.5                                      | 8.6                                     | 11.4                                      | <4.0                                   | 0.25                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.11.2017        | 53.4                                     | 25.9                                      | 7.4                                     | 12.3                                      | <4.0                                   | 0.16                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 29.11.2017        | 50.2                                     | 24.3                                      | 6.7                                     | 14.8                                      | <4.0                                   | 0.18                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.12.2017        | 54.6                                     | 26.2                                      | 7.9                                     | 15.1                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.12.2017        | 61.6                                     | 29.2                                      | 8.8                                     | 14.4                                      | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 09.12.2017        | 61.3                                     | 32.1                                      | 6.1                                     | 13.8                                      | <4.0                                   | 0.25                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.12.2017        | 67.5                                     | 36.1                                      | 7.6                                     | 14.9                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 16.12.2017        | 65.8                                     | 32.6                                      | 9.8                                     | 13.8                                      | <4.0                                   | 0.36                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.12.2017        | 61.4                                     | 31.7                                      | 8.6                                     | 16.5                                      | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 23.12.2017        | 66.3                                     | 34.3                                      | 9.7                                     | 15.2                                      | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.12.2017        | 67.4                                     | 39.8                                      | 7.5                                     | 19.3                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 30.12.2017        | 71.3                                     | 28.2                                      | 9.3                                     | 15.9                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.01.2018        | 61.3                                     | 32.1                                      | 6.1                                     | 13.8                                      | <4.0                                   | 0.32                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.01.2018        | 67.5                                     | 36.1                                      | 7.6                                     | 14.9                                      | <4.0                                   | 0.33                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 10.01.2018        | 65.8                                     | 32.6                                      | 9.8                                     | 13.8                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 14.01.2018        | 61.4                                     | 31.7                                      | 8.6                                     | 16.5                                      | <4.0                                   | 0.34                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 17.01.2018        | 66.3                                     | 34.3                                      | 9.7                                     | 15.2                                      | <4.0                                   | 0.37                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 21.01.2018        | 67.4                                     | 39.8                                      | 7.5                                     | 19.3                                      | <4.0                                   | 0.28                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 24.01.2018        | 71.3                                     | 28.2                                      | 9.3                                     | 15.9                                      | <4.0                                   | 0.27                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 28.01.2018        | 59.8                                     | 26.5                                      | 11.6                                    | 14.7                                      | <4.0                                   | 0.29                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 31.01.2018        | 63.5                                     | 29.2                                      | 10.4                                    | 16.1                                      | <4.0                                   | 0.31                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| NAAQ Standard     | 100                                      | 60  | 80                                      | 80  | 100                                    | 4                          | 400                                     | 05  | 01   | 20                         | 1.0                        | 06                         | --                        |
| Quarterly Average | 60.49                                    | 30.17                                     | 8.16                                    | 14.76                                     | <4.0                                   | 0.26                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| Testing method    | Gravimetric                              | Gravimetric                               | Improve d West and Gaeke method         | Modified Jacob & Hoelheiser (Na-Arsenite) | Chemical Method                        | NDIR Spectroscopy          | Indo phenol blue method                 | Absorption & Desorption followed by GC analysis       | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling  | AAS method after sampling  | AAS method after sampling  | Zirconium SPADNS Method   |

IDL Values: SO<sub>2</sub><4 µg/m<sup>3</sup>, NO<sub>x</sub><9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As<0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, F<0.01 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>



For Visiontek Consultancy Services Pvt. Ltd.





Ref: Env/ab/18/R-2319

Date: 30/04/18


## AMBIENT AIR QUALITY MONITORING REPORT

- Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
- Sampling Location : Monitoring Station No.- AAQMS-7 (Khadiapali)
- Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
- Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

| Date              | PARAMETERS                               |   |   |   |  |                            |   |   |  |                            |                            |                            |                           |
|-------------------|--|---|---|---|--|----------------------------|---|---|--|----------------------------|----------------------------|----------------------------|---------------------------|
|                   | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> )   | O <sub>3</sub><br>(µg/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | BaP<br>(ng/m <sup>3</sup> )                                | Ni<br>(ng/m <sup>3</sup> ) | Pb<br>(µg/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | F<br>(µg/m <sup>3</sup> ) |
| 03.11.2017        | 51.7                                     | 29.9                                      | 5.1                                     | 10.2                                      | <4.0                                   | 0.11                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 08.11.2017        | 53.3                                     | 27.4                                      | 6.3                                     | 10.7                                      | <4.0                                   | 0.12                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.11.2017        | 56.7                                     | 29.6                                      | 7.9                                     | 12.1                                      | <4.0                                   | 0.11                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 15.11.2017        | 66.9                                     | 30.3                                      | 6.5                                     | 15.6                                      | <4.0                                   | 0.14                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.11.2017        | 59.8                                     | 27.3                                      | 7.3                                     | 14.8                                      | <4.0                                   | 0.12                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 22.11.2017        | 59.3                                     | 27.3                                      | 8.6                                     | 16.4                                      | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.11.2017        | 61.2                                     | 29.4                                      | 7.4                                     | 17.3                                      | <4.0                                   | 0.13                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 29.11.2017        | 62.7                                     | 30  | 9.7                                     | 11.8                                      | <4.0                                   | 0.14                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.12.2017        | 63.6                                     | 28.4                                      | 5.9                                     | 16.1                                      | <4.0                                   | 0.13                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.12.2017        | 63.7                                     | 31.0                                      | 7.8                                     | 14.4                                      | <4.0                                   | 0.16                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 09.12.2017        | 66.3                                     | 31.7                                      | 6.1                                     | 13.8                                      | <4.0                                   | 0.15                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 12.12.2017        | 71.7                                     | 27.8                                      | 5.6                                     | 14.9                                      | <4.0                                   | 0.18                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 16.12.2017        | 67.6                                     | 27.3                                      | 8.8                                     | 13.8                                      | <4.0                                   | 0.19                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 19.12.2017        | 68.8                                     | 29.5                                      | 7.6                                     | 13.5                                      | <4.0                                   | 0.14                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 23.12.2017        | 69.9                                     | 37.9                                      | 8.7                                     | 14.2                                      | <4.0                                   | 0.12                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 26.12.2017        | 68.9                                     | 36.6                                      | 7.5                                     | 12.3                                      | <4.0                                   | 0.17                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 30.12.2017        | 70.6                                     | 30.4                                      | 8.3                                     | 15.8                                      | <4.0                                   | 0.16                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 02.01.2018        | 72.6                                     | 34.7                                      | 5.1                                     | 12.7                                      | <4.0                                   | 0.14                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 05.01.2018        | 69.2                                     | 36.3                                      | 7.6                                     | 14.9                                      | <4.0                                   | 0.15                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 10.01.2018        | 70.3                                     | 39.6                                      | 6.8                                     | 12.8                                      | <4.0                                   | 0.17                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 14.01.2018        | 65.5                                     | 37.8                                      | 7.5                                     | 14.3                                      | <4.0                                   | 0.16                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 17.01.2018        | 57.7                                     | 36.7                                      | 9.1                                     | 15.1                                      | <4.0                                   | 0.13                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 21.01.2018        | 59.7                                     | 35.8                                      | 7.3                                     | 19.1                                      | <4.0                                   | 0.13                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 24.01.2018        | 63.3                                     | 36.4                                      | 9.6                                     | 15.4                                      | <4.0                                   | 0.23                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 28.01.2018        | 62.8                                     | 36.4                                      | 10.1                                    | 14.5                                      | <4.0                                   | 0.15                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| 31.01.2018        | 60.6                                     | 34.9                                      | 10.3                                    | 16.2                                      | <4.0                                   | 0.21                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| NAAQ Standard     | 100                                      | 60  | 80                                      | 80  | 100                                    | 4                          | 400                                     | 05  | 01   | 20                         | 1.0                        | 06                         | --                        |
| Quarterly Average | 64.02                                    | 32.3                                      | 7.63                                    | 14.33                                     | <4.0                                   | 0.15                       | <20.0                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                     |
| Testing method    | Gravimetric                              | Gravimetric                               | Improved West and Gaeke method          | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method                        | NDIR Spectroscopy          | Indo phenol blue method                 | Absorption & Desorption followed by GC analysis       | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling  | AAS method after sampling  | AAS method after sampling  | Zirconium SPADNS Method   |

3DL Values: SO<sub>2</sub><4 µg/m<sup>3</sup>, NO<sub>x</sub><9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, NH<sub>3</sub><20 µg/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, As<0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, F<0.01 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>

For Visiontek Consultancy Services Pvt. Ltd.





Ref: Enulab/18/R-2320

Date: 30/04/18

## AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Sampling Location : Monitoring Station No.- AAQMS-8 (Thelkolai)
3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative

| Date              | PARAMETERS                               |   |   |   |  |                            |   |   |  |                            |                            |                            |                            |
|-------------------|--|---|---|---|--|----------------------------|---|---|--|----------------------------|----------------------------|----------------------------|----------------------------|
|                   | PM <sub>10</sub><br>(µg/m <sup>3</sup> ) | PM <sub>2.5</sub><br>(µg/m <sup>3</sup> ) | SO <sub>2</sub><br>(µg/m <sup>3</sup> ) | NO <sub>x</sub><br>(µg/m <sup>3</sup> )   | O <sub>3</sub><br>(µg/m <sup>3</sup> ) | CO<br>(mg/m <sup>3</sup> ) | NH <sub>3</sub><br>(µg/m <sup>3</sup> ) | C <sub>6</sub> H <sub>6</sub><br>(µg/m <sup>3</sup> ) | BaP<br>(ng/m <sup>3</sup> )                                | Ni<br>(µg/m <sup>3</sup> ) | Pb<br>(µg/m <sup>3</sup> ) | As<br>(ng/m <sup>3</sup> ) | F<br>(µg/m <sup>3</sup> )  |
| 03.11.2017        | 53.6                                     | 38.1                                      | 5.8                                     | 15.1                                      | 4.8                                    | 0.43                       | 25.2                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 08.11.2017        | 49.5                                     | 34.8                                      | 6.2                                     | 19.2                                      | 4.1                                    | 0.45                       | 23.8                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 12.11.2017        | 56.1                                     | 37.4                                      | 5.5                                     | 18.9                                      | 4.6                                    | 0.44                       | 28.6                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 15.11.2017        | 63.6                                     | 31.4                                      | 6.9                                     | 24.6                                      | 6.1                                    | 0.39                       | 23.4                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 19.11.2017        | 59.7                                     | 30.5                                      | 7.4                                     | 21.1                                      | 7.2                                    | 0.37                       | 27.2                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 22.11.2017        | 63.2                                     | 32.8                                      | 6.6                                     | 17.8                                      | 5.2                                    | 0.45                       | 29.5                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 26.11.2017        | 58.9                                     | 30.4                                      | 4.5                                     | 12.4                                      | 5.1                                    | 0.42                       | 26.6                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 29.11.2017        | 63.3                                     | 31.8                                      | 7.7                                     | 15.7                                      | 7.8                                    | 0.26                       | 27.1                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 02.12.2017        | 63.2                                     | 32.4                                      | 6.5                                     | 17.8                                      | 7.7                                    | 0.31                       | 24.4                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 05.12.2017        | 66.4                                     | 31.9                                      | 7.1                                     | 14.4                                      | 8.6                                    | 0.29                       | 29.2                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 09.12.2017        | 62.2                                     | 30.5                                      | 6.8                                     | 16.1                                      | 6.4                                    | 0.29                       | 22.8                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 12.12.2017        | 62.5                                     | 33.8                                      | 6.2                                     | 19.6                                      | 5.8                                    | 0.32                       | 26.4                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 16.12.2017        | 63.2                                     | 36.2                                      | 5.6                                     | 21.8                                      | 6.2                                    | 0.39                       | 26.1                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 19.12.2017        | 60.9                                     | 30.4                                      | 5.9                                     | 17.2                                      | 7.6                                    | 0.29                       | 29.2                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 23.12.2017        | 68.4                                     | 35.2                                      | 6.3                                     | 13.9                                      | 9.2                                    | 0.30                       | 27.6                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 26.12.2017        | 69.2                                     | 35.7                                      | 8.7                                     | 16.6                                      | 7.4                                    | 0.29                       | 28.8                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 30.12.2017        | 63.6                                     | 32.1                                      | 6.4                                     | 15.4                                      | 9.8                                    | 0.31                       | 26.4                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 02.01.2018        | 65.8                                     | 31.8                                      | 11.3                                    | 15.6                                      | 8.1                                    | 0.32                       | 23.6                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 05.01.2018        | 66.4                                     | 36.6                                      | 12.9                                    | 17.4                                      | 10.7                                   | 0.3                        | 27.2                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 10.01.2018        | 68.7                                     | 36.4                                      | 10.2                                    | 16.1                                      | 7.4                                    | 0.32                       | 29.8                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 14.01.2018        | 71.8                                     | 36.8                                      | 7.5                                     | 16.4                                      | 9.5                                    | 0.36                       | 28.4                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 17.01.2018        | 64.2                                     | 35.3                                      | 9.7                                     | 19.5                                      | 10.8                                   | 0.38                       | 27.5                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 21.01.2018        | 63.7                                     | 31.4                                      | 8.5                                     | 18.8                                      | 11.6                                   | 0.32                       | 30.5                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 24.01.2018        | 67.9                                     | 39.7                                      | 7.8                                     | 15.7                                      | 9.7                                    | 0.36                       | 34.2                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 28.01.2018        | 65.4                                     | 36.2                                      | 10.1                                    | 17.1                                      | 8.6                                    | 0.39                       | 32.6                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| 31.01.2018        | 69.6                                     | 34.6                                      | 9.4                                     | 16.3                                      | 8.7                                    | 0.34                       | 30.8                                    | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| NAAQ Standard     | 100                                      | 60  | 80                                      | 80  | 100                                    | 4                          | 400                                     | 05  | 01   | 20                         | 1.0                        | 06                         | --                         |
| Quarterly Average | 63.18                                    | 33.89                                     | 7.42                                    | 17.38                                     | 7.56                                   | 0.35                       | 27.23                                   | <0.001  | <0.002   | <0.01                      | <0.001                     | <0.001                     | <0.01                      |
| Testing method    | Gravimetric                              | Gravimetric                               | Improved West and Gacke method          | Modified Jacob & Hochheiser (Na-Arsenite) | Chemical Method                        | NDIR Spectroscopy          | Indo phenol blue method                 | Absorption & Desorption followed by GC analysis       | Solvent extraction followed by Gas Chromatography analysis | AAS method after sampling  | AAS method after sampling  | AAS method after sampling  | Zirconium or SPADNS Method |

IDL Values: SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>, O<sub>3</sub> < 4 µg/m<sup>3</sup>, NH<sub>3</sub> < 20 µg/m<sup>3</sup>, Ni < 0.01 ng/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub> < 0.001 µg/m<sup>3</sup>, BaP < 0.002 ng/m<sup>3</sup>, Pb < 0.001 µg/m<sup>3</sup>, F < 0.01 µg/m<sup>3</sup>, CO < 0.1 mg/m<sup>3</sup>

For Visiontek Consultancy Services Pvt. Ltd.





Ref: Envtlab/18/R-2311

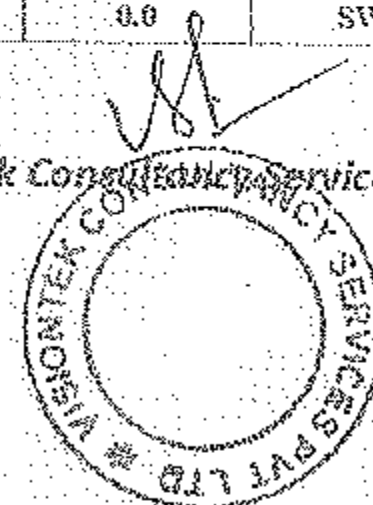
Date: 30/04/18

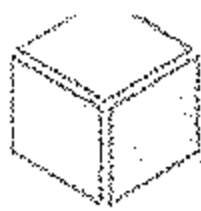
## METEOROLOGICAL DATA FOR OCTOBER-2017

1. Name of Industry: M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga .
2. Sampling Location: Near Raw Water Reservoir
3. Sample collected by: VCSPL representative in presence of Aditya Aluminium representative.

| Date       | Temperature(°C) |      | Relative Humidity (%) |      | Wind Speed m/sec |     | Wind      | Rain fall |
|------------|-----------------|------|-----------------------|------|------------------|-----|-----------|-----------|
|            | Max             | Min  | Max                   | Min  | Max              | Min | Direction | (mm)      |
| 01-10-2017 | 30.4            | 21.2 | 92.0                  | 61.0 | 19.8             | 0.0 | SE        | 15.6      |
| 02-10-2017 | 31.5            | 22.2 | 96.0                  | 53.7 | 8.2              | 0.0 | NE        | 5.1       |
| 03-10-2017 | 32.4            | 23.4 | 98.0                  | 51.3 | 3.0              | 0.0 | NE        | 0.0       |
| 04-10-2017 | 33.6            | 21.9 | 90.8                  | 48.4 | 7.5              | 0.0 | NNE       | 2.9       |
| 05-10-2017 | 32.1            | 23.5 | 97.7                  | 44.0 | 12.7             | 0.0 | E         | 0.6       |
| 06-10-2017 | 31.8            | 22.1 | 94.5                  | 51.0 | 7.9              | 0.0 | ENE       | 0.0       |
| 07-10-2017 | 32.7            | 23.7 | 96.0                  | 50.7 | 10.6             | 0.0 | NE        | 0.0       |
| 08-10-2017 | 26.5            | 21.7 | 94.3                  | 56.4 | 11.0             | 0.0 | NW        | 0.0       |
| 09-10-2017 | 30.8            | 10.1 | 91.0                  | 42.0 | 9.0              | 0.0 | N         | 11.4      |
| 10-10-2017 | 31.2            | 21.8 | 89.9                  | 43.6 | 11.8             | 0.0 | NWN       | 0.2       |
| 11-10-2017 | 30.5            | 20.2 | 91.7                  | 50.8 | 11.0             | 0.0 | NE        | 0.0       |
| 12-10-2017 | 31.7            | 22.8 | 94.7                  | 55.0 | 8.6              | 0.0 | NNE       | 0.0       |
| 13-10-2017 | 31.8            | 23.9 | 93.7                  | 50.3 | 7.8              | 0.0 | E         | 0.2       |
| 14-10-2017 | 32.8            | 24.0 | 96.0                  | 48.0 | 2.4              | 0.0 | W         | 0.0       |
| 15-10-2017 | 33.9            | 21.0 | 96.0                  | 23.7 | 3.7              | 0.0 | NE        | 0.0       |
| 16-10-2017 | 34.3            | 20.0 | 94.0                  | 18.0 | 7.6              | 0.0 | NW        | 0.0       |
| 17-10-2017 | 33.0            | 20.4 | 93.8                  | 23.7 | 10.8             | 0.0 | SW        | 0.0       |
| 18-10-2017 | 31.6            | 19.6 | 91.8                  | 32.4 | 7.8              | 0.0 | SE        | 0.0       |
| 19-10-2017 | 30.2            | 21.0 | 90.0                  | 48.0 | 14.8             | 0.0 | NE        | 0.0       |
| 20-10-2017 | 29.5            | 21.5 | 94.0                  | 42.6 | 24.7             | 0.0 | NE        | 0.0       |
| 21-10-2017 | 31.2            | 18.2 | 83.0                  | 46.0 | 11.0             | 0.0 | NE        | 0.0       |
| 22-10-2017 | 30.6            | 21.9 | 98.0                  | 42.0 | 18.4             | 0.0 | NNE       | 0.0       |
| 23-10-2017 | 32.8            | 19.8 | 97.0                  | 48.0 | 15.0             | 0.0 | NNE       | 0.0       |
| 24-10-2017 | 33.2            | 20.2 | 83.0                  | 43.0 | 10.0             | 0.0 | N         | 6.9       |
| 25-10-2017 | 39.5            | 19.0 | 85.0                  | 46.0 | 8.0              | 0.0 | N         | 0.0       |
| 26-10-2017 | 38.2            | 19.6 | 95.0                  | 44.0 | 7.9              | 0.0 | SE        | 0.0       |
| 27-10-2017 | 32.5            | 21.2 | 85.0                  | 46.0 | 7.0              | 0.0 | NE        | 0.0       |
| 28-10-2017 | 37.5            | 21.0 | 74.0                  | 42.0 | 8.0              | 0.0 | W         | 0.0       |
| 29-10-2017 | 36.7            | 19.5 | 97.0                  | 52.0 | 11.0             | 0.0 | NNE       | 0.0       |
| 30-10-2017 | 33.4            | 20.5 | 90.0                  | 41.0 | 12.5             | 0.0 | W         | 0.0       |
| 31-10-2017 | 31.1            | 21.8 | 93.0                  | 42.7 | 15.7             | 0.0 | SW        | 0.0       |

For Visiontek Consultancy Services Pvt. Ltd.





Ref: Envtlab/18/R-2312

## METEOROLOGICAL DATA FOR JANUARY-2018

Date: 30/04/18

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga .
2. Sampling Location : Near Raw Water Reservoir.
3. Sample collected by : VCSPL representative in presence of Aditya Aluminium representative.

| Date       | Temperature(°C) |      | Relative Humidity (%) |      | Wind Speed m/sec |     | Wind Direction | Rain fall (mm) |
|------------|-----------------|------|-----------------------|------|------------------|-----|----------------|----------------|
|            | Max             | Min  | Max                   | Min  | Max              | Min |                |                |
| 01-01-2018 | 27.4            | 10.5 | 95.0                  | 22.0 | 8.0              | 0.0 | SE             | 0.0            |
| 02-01-2018 | 28.5            | 11.2 | 72.0                  | 21.0 | 12.0             | 0.0 | NE             | 0.0            |
| 03-01-2018 | 28.6            | 11.4 | 79.0                  | 26.0 | 11.7             | 0.0 | NE             | 0.0            |
| 04-01-2018 | 28.6            | 10.9 | 92.0                  | 21.0 | 12.2             | 0.0 | NNE            | 0.0            |
| 05-01-2018 | 28.1            | 9.5  | 76.0                  | 20.0 | 10.9             | 0.0 | E              | 0.0            |
| 06-01-2018 | 27.1            | 9.1  | 93.0                  | 22.0 | 8.5              | 0.0 | ESE            | 0.0            |
| 07-01-2018 | 27.1            | 8.7  | 92.0                  | 19.0 | 7.6              | 0.0 | NE             | 0.0            |
| 08-01-2018 | 26.5            | 9.2  | 84.0                  | 17.0 | 14.6             | 0.0 | SW             | 0.0            |
| 09-01-2018 | 25.8            | 10.1 | 72.0                  | 26.0 | 15.8             | 0.0 | N              | 0.0            |
| 10-01-2018 | 26.2            | 9.8  | 76.0                  | 24.0 | 19.6             | 0.0 | NWN            | 0.0            |
| 11-01-2018 | 25.5            | 8.2  | 78.0                  | 27.0 | 10.8             | 0.0 | NE             | 0.0            |
| 12-01-2018 | 25.7            | 7.8  | 74.0                  | 25.0 | 9.6              | 0.0 | NNE            | 0.0            |
| 13-01-2018 | 26.0            | 7.9  | 80.0                  | 23.0 | 11.3             | 0.0 | E              | 0.0            |
| 14-01-2018 | 25.0            | 7.0  | 96.0                  | 25.0 | 12.4             | 0.0 | W              | 0.0            |
| 15-01-2018 | 24.9            | 7.0  | 91.0                  | 21.0 | 7.7              | 0.0 | NE             | 0.0            |
| 16-01-2018 | 24.3            | 7.0  | 88.0                  | 19.0 | 9.6              | 0.0 | NW             | 0.0            |
| 17-01-2018 | 24.0            | 8.0  | 79.0                  | 20.0 | 7.8              | 0.0 | SW             | 0.0            |
| 18-01-2018 | 25.6            | 8.0  | 92.0                  | 22.0 | 11.6             | 0.0 | SE             | 0.0            |
| 19-01-2018 | 27.2            | 8.0  | 89.0                  | 24.0 | 12.8             | 0.0 | NE             | 0.0            |
| 20-01-2018 | 27.5            | 8.5  | 95.0                  | 23.0 | 10.8             | 0.0 | NE             | 0.0            |
| 21-01-2018 | 28.2            | 8.2  | 75.0                  | 21.0 | 13.6             | 0.0 | NE             | 0.0            |
| 22-01-2018 | 28.6            | 7.9  | 85.0                  | 19.0 | 11.8             | 0.0 | NNE            | 0.0            |
| 23-01-2018 | 28.6            | 8.0  | 72.0                  | 18.0 | 14.8             | 0.0 | NNE            | 0.0            |
| 24-01-2018 | 29.2            | 5.2  | 73.0                  | 21.0 | 13.8             | 0.0 | N              | 0.0            |
| 25-01-2018 | 29.5            | 9.0  | 85.0                  | 27.0 | 17.8             | 0.0 | N              | 0.0            |
| 26-01-2018 | 28.2            | 9.6  | 88.0                  | 24.0 | 18.8             | 0.0 | SE             | 0.0            |
| 27-01-2018 | 26.5            | 10.2 | 81.0                  | 26.0 | 20.7             | 0.0 | NE             | 0.0            |
| 28-01-2018 | 27.5            | 10.0 | 93.0                  | 28.0 | 10.8             | 0.0 | W              | 0.0            |
| 29-01-2018 | 26.7            | 10.5 | 97.0                  | 23.0 | 13.8             | 0.0 | NNE            | 0.0            |
| 30-01-2018 | 27.4            | 9.5  | 90.0                  | 22.0 | 14.8             | 0.0 | W              | 0.0            |
| 31-01-2018 | 28.1            | 10.8 | 93.0                  | 24.0 | 17.9             | 0.0 | SW             | 0.0            |

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Ref: Enr/lab/18/R-2321

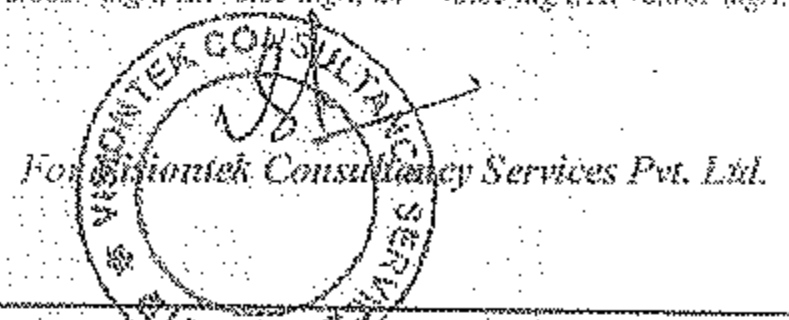
Date: 30/04/17

## SURFACE WATER QUALITY ANALYSIS REPORT

- Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
- Sampling location : SW-1: Hirakud Reservoir; SW-2: Lapanga Pond;  
SW-3: Matwadinadi -U/S; SW-4: Bamloi Pond;  
SW-5: Bhedan river.
- Date of sampling : 07.12.2017
- Date of analysis : 08.12.2017 to 14.12.2017
- Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

| Sl. No | Parameter  | Testing Methods                           | Unit       | Standards as per IS:2296:1992 Class - 'C' | Analysis Results |        |        |        |        |
|--------|--|---|------------|---|------------------|--------|--------|--------|--------|
|        |  |   |            |   | SW-1             | SW-2   | SW-3   | SW-4   | SW-5   |
| 1      | pH Value   | APHA 4500H <sup>+</sup> B                 | --         | 6.0-9.0                                   | 7.2              | 7.4    | 7.3    | 7.6    | 7.4    |
| 2      | Colour   | APHA 2120 B, C                            | Hazen      | 300                                       | CL               | CL     | CL     | CL     | CL     |
| 3      | Taste  | APHA 2160 C                               | --         | --  | AL               | AL     | AL     | AL     | AL     |
| 4      | Odour  | APHA 2150 B                               | --         | --  | U/O              | U/O    | U/O    | U/O    | U/O    |
| 5      | Conductivity   | APHA 2510 B                               | µs/cm      | --  | 96.4             | 97.9   | 86.6   | 94.6   | 89.1   |
| 6      | Turbidity  | APHA 2130 B                               | NTU        | --  | 3.4              | 3.9    | 4.1    | 4.6    | 3.1    |
| 7      | Total Dissolved Solids                                   | APHA 2540 C                               | mg/l       | 1500                                      | 125.0            | 136.0  | 126.0  | 124.0  | 134.0  |
| 8      | Total Hardness (as CaCO <sub>3</sub> )                   | APHA 2340 C                               | mg/l       | --  | 57.0             | 49.0   | 53.0   | 62.0   | 44.0   |
| 9      | Total Alkalinity   | APHA 2320 B                               | mg/l       | --  | 51.0             | 49.0   | 47.0   | 51.0   | 45.0   |
| 10     | Calcium (as Ca)  | APHA 3500Ca B                             | mg/l       | --  | 12.4             | 14.3   | 13.6   | 17.6   | 12.8   |
| 11     | Magnesium (as Mg)  | APHA 3500Mg B                             | mg/l       | --  | 6.3              | 4.8    | 7.3    | 6.9    | 4.4    |
| 12     | Residual free Chlorine                                   | APHA 4500Cl <sub>2</sub> B                | mg/l       | --  | ND               | ND     | ND     | ND     | ND     |
| 13     | Boron (as B)   | APHA 4500B B                              | mg/l       | --  | <0.01            | <0.01  | <0.01  | <0.01  | <0.01  |
| 14     | Chloride (as Cl)   | APHA 4500Cl <sup>-</sup> B                | mg/l       | 600                                       | 19               | 23     | 18     | 22     | 23     |
| 15     | Sulphate (as SO <sub>4</sub> )                           | APHA 4500 SO <sub>4</sub> <sup>2-</sup> E | mg/l       | 400                                       | 10.3             | 8.9    | 9.3    | 8.7    | 8.2    |
| 16     | Fluoride (as F)  | APHA 4500F <sup>-</sup> C                 | mg/l       | 1.5                                       | 0.11             | 0.21   | 0.19   | 0.18   | 0.27   |
| 17     | Nitrate (as NO <sub>3</sub> )                            | APHA 4500 NO <sub>3</sub> <sup>-</sup> E  | mg/l       | 50  | 1.4              | 1.7    | 1.5    | 1.6    | 1.7    |
| 18     | Sodium as Na   | APHA 3500-Na                              | mg/l       | --  | 12.8             | 11.4   | 10.7   | 11.9   | 12.3   |
| 19     | Potassium as K   | APHA 3500-K                               | mg/l       | --  | 0.92             | 0.87   | 1.01   | 0.93   | 0.86   |
| 20     | Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) | APHA 5530 B,D                             | mg/l       | 0.005                                     | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 21     | Cyanide (as CN)  | APHA 4500 CN <sup>-</sup> C,D             | mg/l       | 0.05                                      | ND               | ND     | ND     | ND     | ND     |
| 22     | Anionic Detergents (as MBAS)                             | APHA 5540 C                               | mg/l       | 1.0                                       | <0.2             | <0.2   | <0.2   | <0.2   | <0.2   |
| 23     | Cadmium (as Cd)  | APHA 3111 B,C                             | mg/l       | 0.01                                      | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 24     | Arsenic (as As)  | APHA 3114 B                               | mg/l       | 0.2                                       | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 25     | Copper (as Cu)   | APHA 3111 B,C                             | mg/l       | 1.5                                       | <0.05            | <0.05  | <0.05  | <0.05  | <0.05  |
| 26     | Lead (as Pb)   | APHA 3111 B,C                             | mg/l       | 0.1                                       | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 27     | Manganese (as Mn)  | APHA 3500Mn B                             | mg/l       | --  | <0.005           | <0.005 | <0.005 | <0.005 | <0.005 |
| 28     | Iron (as Fe)   | APHA 3500Fe B                             | mg/l       | 0.5                                       | 0.21             | 0.25   | 0.26   | 0.24   | 0.23   |
| 29     | Chromium (as Cr <sup>6+</sup> )                          | APHA 3500Cr B                             | mg/l       | 0.05                                      | <0.05            | <0.05  | <0.05  | <0.05  | <0.05  |
| 30     | Selenium (as Se)   | APHA 3114 B                               | mg/l       | 0.05                                      | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 31     | Zinc (as Zn)   | APHA 3111 B,C                             | mg/l       | 15  | <0.05            | <0.05  | <0.05  | <0.05  | <0.05  |
| 32     | Aluminium as( Al)  | APHA 3500Al B                             | mg/l       | --  | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 33     | Mercury (as Hg)  | APHA 3500 Hg                              | mg/l       | --  | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 34     | Mineral Oil  | APHA 5220 B                               | mg/l       | --  | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 35     | Pesticides   | APHA 6630 B,C                             | mg/l       | --  | Absent           | Absent | Absent | Absent | Absent |
| 36     | E.Coli   | APHA 9221-F                               | MPN/100 ml | --  | Absent           | Absent | Absent | Absent | Absent |
| 37     | Total Coliforms  | APHA 9221-B                               | MPN/100 ml | 5000                                      | 430.0            | 570.0  | 610.0  | 460.0  | 490.0  |

Note: CL: Colourless, AL: Agreeable, U/O: Unobjectionable, ND: Not Detected, BDL (Below Detectable Limits) Values: Cr<sup>6+</sup><0.05 mg/l, Mn<0.005 mg/l, C<sub>6</sub>H<sub>5</sub>OH<0.001 mg/l, Hg<0.001 mg/l, Cd<0.001 mg/l, Se<0.001 mg/l, As<0.001 mg/l, Pb<0.001 mg/l, Zn<0.05 mg/l, Cr<sup>6+</sup><0.05 mg/l, Al<0.001 mg/l, B<0.01 mg/l.





Ref: Emulab/18/R-2322

Date: 30/04/18

## SURFACE WATER QUALITY ANALYSIS REPORT

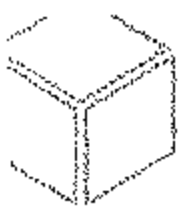
- Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
- Sampling location : SW-6: Bhedan river near Katikela; SW-7: Matwadinadi-D/S; SW-8: Hirakud reservoir near Gurupali village; SW-9: Salepali village; SW-10: Sanamal.
- Date of sampling : 07.12.2017
- Date of analysis : 08.12.2017 to 14.12.2017
- Sample collected by : VCSPL Representative in presence of Aditya Aluminium Representative

| Sl. No. | Parameter  | Testing Methods                           | Unit       | Standards as per IS-2296:1992 Class - 'C' | Analysis Results |        |        |        |        |
|---------|--|---|------------|---|------------------|--------|--------|--------|--------|
|         |  |   |            |   | SW-6             | SW-7   | SW-8   | SW-9   | SW-10  |
| 1       | pH Value   | APHA 4500H B                              | -          | 6.0-9.0                                   | 7.6              | 8.1    | 7.6    | 7.7    | 7.4    |
| 2       | Colour   | APHA 2130B, C                             | Hazen      | 300                                       | CL               | CL     | CL     | CL     | CL     |
| 3       | Taste  | APHA 2160 C                               | -          | --  | AL               | AL     | AL     | AL     | AL     |
| 4       | Odour  | APHA 2150 B                               | -          | --  | U/O              | U/O    | U/O    | U/O    | U/O    |
| 5       | Conductivity   | APHA 2510-B                               | µs/cm      | --  | 195.0            | 201.0  | 107.0  | 165.0  | 143.0  |
| 6       | Turbidity  | APHA 2130 B                               | NTU        | --  | 2.7              | 3.1    | 3.7    | 2.9    | 3.1    |
| 7       | Total Dissolved Solids                                   | APHA 2540 C                               | mg/l       | 1500                                      | 265.0            | 236.0  | 126.0  | 214.0  | 226.0  |
| 8       | Total Hardness (as CaCO <sub>3</sub> )                   | APHA 2340 C                               | mg/l       | --  | 76.0             | 63.0   | 78.0   | 62.0   | 86.0   |
| 9       | Total Alkalinity   | APHA 2320 B                               | mg/l       | --  | 52.0             | 58.0   | 43.0   | 47.0   | 51.0   |
| 10      | Calcium (as Ca)  | APHA 3500Ca B                             | mg/l       | --  | 36.0             | 37.0   | 25.0   | 21.5   | 23.7   |
| 11      | Magnesium (as Mg)  | APHA 3500Mg B                             | mg/l       | --  | 16.5             | 18.2   | 12.4   | 14.3   | 13.1   |
| 12      | Residual, free Chlorine                                  | APHA 4500Cl <sub>2</sub> B                | mg/l       | --  | ND               | ND     | ND     | ND     | ND     |
| 13      | Boron (as B)   | APHA 4500B, B                             | mg/l       | --  | <0.01            | <0.01  | <0.01  | <0.01  | <0.01  |
| 14      | Chloride (as Cl)   | APHA 4500Cl <sub>2</sub> B                | mg/l       | 600                                       | 22.0             | 25.2   | 27.0   | 21.0   | 23.0   |
| 15      | Sulphate (as SO <sub>4</sub> )                           | APHA 4500 SO <sub>4</sub> <sup>2-</sup> E | mg/l       | 400                                       | 9.1              | 11.2   | 12.1   | 14.1   | 9.3    |
| 16      | Fluoride (as F)  | APHA 4500F C                              | mg/l       | 1.5                                       | 0.21             | 0.23   | 0.19   | 0.27   | 0.24   |
| 17      | Nitrate (as NO <sub>3</sub> )                            | APHA 4500 NO <sub>3</sub> <sup>-</sup> E  | mg/l       | 50  | 2.6              | 2.9    | 2.7    | 3.4    | 2.6    |
| 18      | Sodium as Na   | APHA 3500-N                               | mg/l       | --  | 10.1             | 12.8   | 13.1   | 16.4   | 12.3   |
| 19      | Potassium as K   | APHA 3500-Ka                              | mg/l       | --  | 0.92             | 0.87   | 1.2    | 1.1    | 1.07   |
| 20      | Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH) | APHA 5530 B, D                            | mg/l       | 0.005                                     | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 21      | Cyanide (as CN <sup>-</sup> )                            | APHA 4500 CN C, D                         | mg/l       | 0.05                                      | ND               | ND     | ND     | ND     | ND     |
| 22      | Anionic Detergents (as MBAS)                             | APHA 5540 C                               | mg/l       | 1.0                                       | <0.2             | <0.2   | <0.2   | <0.2   | <0.2   |
| 23      | Cadmium (as Cd)  | APHA 3111 B, C                            | mg/l       | 0.01                                      | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 24      | Arsenic (as As)  | APHA 3114 B                               | mg/l       | 0.2                                       | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 25      | Copper (as Cu)   | APHA 3111 B, C                            | mg/l       | 1.5                                       | <0.05            | <0.05  | <0.05  | <0.05  | <0.05  |
| 26      | Lead (as Pb)   | APHA 3111 B, C                            | mg/l       | 0.1                                       | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 27      | Manganese (as Mn)  | APHA 3500Mn B                             | mg/l       | --  | <0.005           | <0.005 | <0.005 | <0.005 | <0.005 |
| 28      | Iron (as Fe)   | APHA 3500Fe, B                            | mg/l       | 6.5                                       | 0.24             | 0.30   | 0.20   | 0.2    | 0.21   |
| 29      | Chromium (as Cr <sup>6+</sup> )                          | APHA 3500Cr B                             | mg/l       | 0.05                                      | <0.05            | <0.05  | <0.05  | <0.05  | <0.05  |
| 30      | Selenium (as Se)   | APHA 3114 B                               | mg/l       | 0.05                                      | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 31      | Zinc (as Zn)   | APHA 3111 B, C                            | mg/l       | 15  | <0.05            | <0.05  | <0.05  | <0.05  | <0.05  |
| 32      | Aluminium (as Al)  | APHA 3500Al B                             | mg/l       | --  | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 33      | Mercury (as Hg)  | APHA 3500 Hg                              | mg/l       | --  | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 34      | Mineral Oil  | APHA 5720 B                               | mg/l       | --  | <0.001           | <0.001 | <0.001 | <0.001 | <0.001 |
| 35      | Pesticides   | APHA 6630 B, C                            | mg/l       | --  | Absent           | Absent | Absent | Absent | Absent |
| 36      | E.Coli   | APHA 9221-F                               | MPN/100 ml | --  | Absent           | Absent | Absent | Absent | Absent |
| 37      | Total Coliforms  | APHA 9221-B                               | MPN/100 ml | 5000                                      | 500.0            | 470.0  | 460.0  | 480.0  | 620.0  |

Note: CL: Colourless, AL: Agreeable, U/O: Unobjectionable, ND: Not Detected, BDL (Below Detectable Limits) Values: Cu<0.05 mg/l, Mn<0.005 mg/l, Cr<0.05 mg/l, Hg<0.001 mg/l, Cd<0.001 mg/l, Se<0.001 mg/l, As<0.001 mg/l, Pb<0.001 mg/l, Zn<0.05 mg/l, Al<0.001 mg/l, B<0.01 mg/l.



For Visiontek Consultancy Services Pvt. Ltd.



Ref: Envtab/18/R-2327

Date: 30/04/18

## SOIL QUALITY ANALYSIS REPORT

- Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
- Date of Sampling : 07.12.2017
- Sampling Location : S-1: Project Site; S-2: Thekoloji; S-3: Ghuchamura; S-4: Lapanga; S-5: Bamloi; S-6: Tileimat; S-7: Jangala; S-8: Gurupali; S-9: Gumkarama; S-10: Bhadarpali.
- Date of Analysis : 08.12.2017 to 14.12.2017
- Sample Collected By : VCSPL representative in Presence of Aditya Aluminium representative

| Sl.No. | Parameters                                     | S-1         | S-2        | S-3        | S-4         | S-5         | S-6        | S-7         | S-8         | S-9         | S-10       |
|--------|--|-------------|------------|------------|-------------|-------------|------------|-------------|-------------|-------------|------------|
| 1      | pH   | 5.5         | 5.8        | 6.8        | 6.2         | 5.4         | 5.9        | 6.1         | 5.8         | 6.4         | 6.7        |
| 2      | Conductivity                                   | 98.4        | 75.4       | 90.2       | 94.8        | 80.2        | 81.6       | 72.8        | 85.2        | 81.9        | 100.2      |
| 3      | Soil Texture                                   | Sandy Loamy | Clay Loamy | Clay Loamy | Sandy Loamy | Sandy Loamy | Clay Loamy | Sandy Loamy | Sandy Loamy | Sandy Loamy | Clay Loamy |
| 4      | Sand   | 25.4        | 30.5       | 20.8       | 38.5        | 32.8        | 40.9       | 38.2        | 29.4        | 40.1        | 37.4       |
| 5      | Silt   | 11.9        | 20.4       | 18.5       | 12.4        | 11.2        | 18.4       | 21.6        | 16.4        | 15.1        | 12.7       |
| 6      | Clay   | 40.1        | 45.2       | 50.8       | 48.2        | 41.7        | 42.6       | 38.9        | 49.7        | 45.2        | 42.8       |
| 7      | Bulk Density (gm/cc)                           | 1.30        | 1.16       | 1.20       | 1.24        | 1.18        | 1.25       | 1.12        | 1.17        | 1.30        | 1.27       |
| 8      | Exchangeable Calcium as Ca (%)                 | 31.5        | 34.5       | 31.7       | 32.7        | 37.2        | 35.6       | 38.4        | 37.5        | 33.9        | 37.1       |
| 9      | Exchangeable Magnesium as Mg (%)               | 40.1        | 50.1       | 42.6       | 55.8        | 54.6        | 58.4       | 56.2        | 60.1        | 61.4        | 45.7       |
| 10     | Available Sodium as Na (%)                     | 0.015       | 0.017      | 0.021      | 0.020       | 0.018       | 0.022      | 0.027       | 0.022       | 0.024       | 0.018      |
| 11     | Available Potassium as K (%)                   | 0.051       | 0.055      | 0.052      | 0.048       | 0.059       | 0.062      | 0.044       | 0.054       | 0.055       | 0.060      |
| 12     | Available phosphorous as P (%)                 | 0.011       | 0.014      | 0.020      | 0.018       | 0.016       | 0.011      | 0.014       | 0.018       | 0.019       | 0.021      |
| 13     | Available Nitrogen as N (%)                    | 0.11        | 0.15       | 0.17       | 0.12        | 0.14        | 0.20       | 0.18        | 0.20        | 0.16        | 0.15       |
| 14     | Organic Matter (%)                             | 3.2         | 2.4        | 2.8        | 2.5         | 4.1         | 3.4        | 5.1         | 3.2         | 3.1         | 2.4        |
| 15     | Organic Carbon (%)                             | 1.22        | 1.42       | 1.50       | 1.64        | 1.22        | 1.40       | 1.62        | 1.44        | 1.52        | 1.48       |
| 16     | Water soluble Chlorides as Cl (%)              | 0.24        | 0.28       | 0.31       | 0.34        | 0.26        | 0.21       | 0.32        | 0.40        | 0.27        | 0.29       |
| 17     | Water soluble Sulphates as SO <sub>4</sub> (%) | 0.12        | 0.14       | 0.20       | 0.18        | 0.17        | 0.15       | 0.11        | 0.14        | 0.18        | 0.20       |
| 18     | Sodium Absorption Ratio (%)                    | 0.124       | 0.120      | 0.140      | 0.135       | 0.127       | 0.102      | 0.112       | 0.142       | 0.134       | 0.120      |
| 19     | Aluminium as Al (%)                            | 0.00001     | 0.00004    | 0.00005    | 0.00006     | 0.00002     | 0.00004    | 0.00007     | 0.00008     | 0.00002     | 0.00007    |
| 20     | Total Iron as Fe (%)                           | 0.04        | 0.06       | 0.02       | 0.05        | 0.06        | 0.02       | 0.022       | 0.030       | 0.010       | 0.027      |
| 21     | Manganese as Mn (%)                            | 0.0050      | 0.0022     | 0.0027     | 0.0021      | 0.0055      | 0.0019     | 0.0012      | 0.0017      | 0.0024      | 0.0020     |
| 22     | Boron as B (%)                                 | 0.00010     | 0.00014    | 0.00018    | 0.00024     | 0.00031     | 0.00024    | 0.00028     | 0.00017     | 0.00014     | 0.00016    |
| 23     | Zinc as Zn (%)                                 | 0.00021     | 0.00015    | 0.00017    | 0.00019     | 0.00021     | 0.00027    | 0.00014     | 0.00019     | 0.00017     | 0.00011    |
| 24     | SiO <sub>2</sub> (%)                           | 6.11        | 5.24       | 5.64       | 5.11        | 5.42        | 5.11       | 6.42        | 5.38        | 5.82        | 4.98       |
| 25     | Fe <sub>2</sub> O <sub>3</sub> (%)             | 0.030       | 0.052      | 0.042      | 0.061       | 0.022       | 0.048      | 0.52        | 0.043       | 0.037       | 0.068      |
| 26     | CaO (%)  | 20.8        | 21.9       | 24.8       | 30.4        | 36.1        | 28.1       | 24.5        | 20.7        | 26.1        | 22.9       |
| 27     | Al <sub>2</sub> O <sub>3</sub> (%)             | 31.5        | 34.5       | 32.8       | 28.4        | 30.4        | 34.2       | 32.8        | 34.2        | 36.4        | 32.0       |
| 28     | Al <sub>2</sub> O <sub>3</sub> (%)             | 0.00008     | 0.00004    | 0.000012   | 0.0000421   | 0.000024    | 0.000041   | 0.000048    | 0.000022    | 0.000038    | 0.000034   |
| 29     | FeO (%)  | 0.074       | 0.0211     | 0.040      | 0.018       | 0.0240      | 0.0271     | 0.0245      | 0.0227      | 0.0231      | 0.0250     |
| 30     | Al <sub>2</sub> O <sub>3</sub> (%)             | 0.0054      | 0.0030     | 0.0012     | 0.0024      | 0.0057      | 0.0014     | 0.0017      | 0.0022      | 0.0018      | 0.0010     |
| 31     | K <sub>2</sub> O (%)                           | 0.0347      | 0.0324     | 0.0294     | 0.0320      | 0.0502      | 0.0411     | 0.0450      | 0.0511      | 0.0420      | 0.0518     |
| 32     | P <sub>2</sub> O <sub>5</sub> (%)              | 0.0070      | 0.0078     | 0.0106     | 0.0078      | 0.0068      | 0.0081     | 0.0091      | 0.0102      | 0.0054      | 0.0067     |
| 33     | Fluoride as F (%)                              | 0.0008      | ND         | ND         | 0.00012     | 0.00055     | 0.00062    | ND          | ND          | ND          | ND         |

ND: Not Detected.

For Visiontek Consultancy Services Pvt. Ltd.





Ref: Env/lab/18/R-2324

Date: 30/04/18

## NOISE MONITORING REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga
2. Monitored By : VCSPL representative in presence of Aditya Aluminium representative

### Daytime Noise monitoring results (Noise Level in dB (A) Dec-2017)

| TIME<br>(6.00AM to<br>10.00PM) | N1:Gumkarma<br>(07.12.2017) | N2:Ghichamura<br>(07.12.2017) | N3:Bomaloi<br>(07.12.2017) | N4:Tileimal<br>(07.12.2017) | N5:Thekoli<br>(07.12.2017) | N6:Lapanga<br>(07.12.2017) | N7:Lapanga<br>Railway Station<br>(07.12.2017) | N8:Jangala<br>(07.12.2017) |
|--------------------------------|-----------------------------|-------------------------------|----------------------------|-----------------------------|----------------------------|----------------------------|---|----------------------------|
| 06.00am                        | 42.1                        | 33.5                          | 39.5                       | 36.4                        | 62.4                       | 51.6                       | 53.2  | 33.2                       |
| 07.00am                        | 44.6                        | 33.2                          | 42.2                       | 40.2                        | 65.1                       | 49.8                       | 56.1  | 35.4                       |
| 08.00am                        | 50.1                        | 38.1                          | 45.1                       | 43.9                        | 66.1                       | 52.3                       | 61.3  | 37.9                       |
| 09.00am                        | 53.9                        | 40.4                          | 54.8                       | 46.4                        | 71.3                       | 58.1                       | 64.5  | 41.4                       |
| 10.00am                        | 60.1                        | 46.4                          | 57.1                       | 49.8                        | 69.5                       | 56.3                       | 63.8  | 42.1                       |
| 11.00am                        | 54.1                        | 49.2                          | 50.3                       | 41.5                        | 66.4                       | 55.6                       | 59.9  | 42.4                       |
| 12.00 noon                     | 47.2                        | 51.2                          | 49.1                       | 38.2                        | 68.5                       | 61.2                       | 55.9  | 39.8                       |
| 01.00pm                        | 41.9                        | 44.3                          | 42.5                       | 34.9                        | 63.4                       | 60.9                       | 59.3  | 43.1                       |
| 02.00pm                        | 42.4                        | 33.4                          | 44.8                       | 37.2                        | 66.1                       | 51.6                       | 57.8  | 44.2                       |
| 03.00pm                        | 51.7                        | 36.1                          | 46.2                       | 39.8                        | 59.2                       | 53.4                       | 59.1  | 40.1                       |
| 04.00pm                        | 62.9                        | 42.7                          | 51.9                       | 50.4                        | 62.1                       | 56.9                       | 61.2  | 36.9                       |
| 05.00pm                        | 70.1                        | 46.1                          | 52.3                       | 54.8                        | 66.7                       | 61.3                       | 66.4  | 39.3                       |
| 06.00pm                        | 61.3                        | 51.4                          | 58.1                       | 57.2                        | 70.1                       | 62.1                       | 62.3  | 48.6                       |
| 07.00pm                        | 60.7                        | 54.7                          | 53.5                       | 54.9                        | 64.3                       | 60.2                       | 64.1  | 47.2                       |
| 08.00pm                        | 57.9                        | 47.1                          | 54.1                       | 49.5                        | 61.3                       | 59.8                       | 61.8  | 39.2                       |
| 09.00pm                        | 53.4                        | 40.7                          | 46.3                       | 42.6                        | 60.9                       | 56.4                       | 59.8  | 41.9                       |
| Average                        | 53.4                        | 43.03                         | 49.24                      | 44.86                       | 65.21                      | 56.72                      | 60.41   | 40.79                      |
| Standard as per<br>CPCB        | 75                          |                               |                            |                             |                            |                            |   |                            |

### Night time Noise monitoring results (Noise Level in dB (A) Dec-2017)

| TIME<br>(10.00PM to<br>6.00AM) | N1:Gumkarma<br>(07.12.2017) | N2:Ghichamura<br>(07.12.2017) | N3:Bomaloi<br>(07.12.2017) | N4:Tileimal<br>(07.12.2017) | N5:Thekoli<br>(07.12.2017) | N6:Lapanga<br>(07.12.2017) | N7:Lapanga<br>Railway Station<br>(07.12.2017) | N8:Jangala<br>(07.12.2017) |
|--------------------------------|-----------------------------|-------------------------------|----------------------------|-----------------------------|----------------------------|----------------------------|---|----------------------------|
| 10.00pm                        | 42.1                        | 30.1                          | 33.1                       | 29.3                        | 56.5                       | 41.3                       | 52.3  | 26.1                       |
| 11.00pm                        | 35.7                        | 28.2                          | 32.3                       | 28.2                        | 52.3                       | 39.2                       | 48.4  | 24.2                       |
| 12.00 midnight                 | 34.3                        | 24.7                          | 28.1                       | 26.1                        | 46.7                       | 27.8                       | 42.1  | 22.1                       |
| 01.00am                        | 32.2                        | 22.1                          | 25.2                       | 23.1                        | 43.2                       | 25.4                       | 33.1  | 21.8                       |
| 02.00am                        | 34.2                        | 22.9                          | 22.7                       | 22.7                        | 41.3                       | 23.7                       | 31.5  | 20.2                       |
| 03.00am                        | 31.4                        | 21.4                          | 22.2                       | 21.1                        | 39.4                       | 24.9                       | 33.1  | 21.6                       |
| 04.00am                        | 35.3                        | 22.9                          | 24.5                       | 22.7                        | 41.7                       | 24.0                       | 32.9  | 22.7                       |
| 05.00am                        | 36.8                        | 23.6                          | 25.3                       | 23.4                        | 42.3                       | 27.1                       | 35.6  | 22.5                       |
| Average                        | 35.2                        | 24.4                          | 26.6                       | 24.5                        | 45.4                       | 29.2                       | 38.6  | 22.6                       |
| Standard as per<br>CPCB        | 70                          |                               |                            |                             |                            |                            |   |                            |

  
 For Visiontek Consultancy Services Pvt. Ltd.



Ref: Env/lab/18/R-2326

Date: 30/04/18

## GROUND WATER (LEVEL) QUALITY ANALYSIS REPORT

1. Name of Industry : M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.
2. Sampling location : GW-1; Near Ash Pond
3. Level Measured by : VCSPL Representative in presence of Aditya Aluminium Representative

| Sl. No | Date Of sampling | Name of Location | Unit    | Result |
|--------|------------------|------------------|---------|--------|
| 1      | 06.01.2018       | Near Ash Pond    | Mt./bgl | 5.93   |



For Visiontek Consultancy Services Private Limited