ADITYA BIRLA
HINDALCO

Letter No: AAP/E&S/EC/2021/688 Date: 28/05/2021

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

Sub: Submission of Six Monthly Compliance from Oct' 20 to Mar' 21.

Ref: Environmental Clearance Letter No: J-11011/136/2009-IA.I (I), dated 29/11/2012, J-11011/136/2009-IA.II (I), dated 14/06/2013, J-11011/136/2009-IA.II (I), dated 14/08/2018 & J-11011/136/2009-IA.I (I) dated 20/07/2020

Dear Sir,

As a part of the compliance to the Environmental Clearance accorded by MoEF&CC 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 Oct' 20 to Mar' 21.

Kindly acknowledge receipt of the reports.

Thanking You

Yours faithfully
For Aditya Aluminium

(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

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Tel: +91 22 6691 7000 | Fax: + 91 222 6691 7001
Corporate ID No.: L27020MH1958PLC011238

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 29th November 2012, EC amendment dated 14 June 2013,14 Aug 2018 & 20 July 2020 from MOEF&CC, GOI.

<table>
<tr><th>Sr. No.</th><th>Specific Conditions</th><th>Compliance</th></tr>
<tr><td>i)</td><td>The streams passing through the project site shall not be disturbed w.r.t their quantity and quality of flow</td><td>The streams passing through the project site is not being disturbed.</td></tr>
<tr><td>ii)</td><td>Alumina shall be obtained from those refineries, which have been accorded environmental clearance by the Ministry of Environment and Forests.</td><td>Alumina is being obtained from refineries which have been accorded environmental clearance. At Present, the Alumina is being obtained from Utkal Alumina International Limited (UAIL), Rayagada Distt. and it has been accorded environmental clearance from MoEFCC.
We have kept an option of importing Alumina in case of any shortage in supply from the above source.</td></tr>
<tr><td>iii)</td><td>The gaseous emissions (PM, SO_2, NOx, PAH, HC, VOCs and Fluoride) from various process units shall confirm 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.

The particulate emissions from the bake oven plant shall not exceed 50 mg/Nm^3.</td><td>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.

a) Smelter GTC 1 & 2- 2 Nos.
b) Smelter FTC 1 & 2 - 2 Nos.
c) CPP Unit 1 to 6 - 6 Nos.

Particulate matter emission from the bake oven does not exceed the prescribed limit of 50 mg/Nm3. The summarized monitoring report w.r.t. particulate matter emission from Oct’ 20 to March’ 21 in Anode baking Furnace stacks of stated below

<table>
<tr><td rowspan="2">Stack attached to</td><td colspan="3">PM Emission (mg/Nm3)</td></tr>
<tr><td>(Min)</td><td>(Max)</td><td>(Avg)</td></tr>
<tr><td>FTC # 1</td><td>5.8</td><td>9.8</td><td>8.35</td></tr>
<tr><td>FTC # 2</td><td>10.3</td><td>31.25</td><td>20.11</td></tr>
</table>

The monitoring report of Fume treatment Plant</td></tr>
</table>

<table>
<tr><td></td><td></td><td>stacks is attached as Annexure-1.</td></tr>
<tr><td>iv)</td><td>Particulate fluoride emissions should not be more than 0.65 mg/Nm3 and fugitive particulate fluoride emissions from pot room should not be more than 1.85 mg/Nm^3.</td><td>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 summarized report from Oct’ 20 to March’ 21 is stated below:

<table><tr><th rowspan="2">Stack attached to</th><th colspan="3">Particulte Fluoride Emission (mg/Nm3)</th></tr><tr><td>(Min)</td><td>(Max)</td><td>(Avg)</td></tr><tr><td>GTC # 1</td><td>0.12</td><td>0.15</td><td>0.13</td></tr><tr><td>GTC # 2</td><td>0.12</td><td>0.15</td><td>0.14</td></tr></table>
The average fugitive particulate fluoride emission from pot rooms during Oct’ 20 to March’ 21 is 0.08 kg/ton of metal produced.

The monitoring reports of Gas Treatment Centre stacks is attached as Annexure-2.</td></tr>
<tr><td>v)</td><td>The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) should not exceed 2 mg/Nm^3. The data on PAH should be monitored quarterly and report submitted regularly to the Ministry/Regional Office at Bhubaneswar and SPCB.</td><td>The poly aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) are being monitored on quarterly basis and found within the standard. (Ref: Annexure 1).</td></tr>
<tr><td>vi)</td><td>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.

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.

Further dry scrubbing system to control the emissions from the pot lines should be provided.</td><td>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 handing, ash handling plant in captive power plant is installed to control fugitive dust emissions.

Online Roof Top Monitoring analyzer installed for Fugitive fluoride (HF) monitoring in potrooms, the concentartion of hydrogen fluoride varies between 0.11 mg/m3 to 0.64 mg/m3 and average is 0.26 mg/m3 during Oct’ 20 to March’ 21. The daily average emission report during these period is attached as Annexure-3.
Forage fluoride analysis around the smelter is being carriedout on quarterly basis and the</td></tr>
</table>

<table>
<tr><td></td><td></td><td>concentration of the forage fluoride (analysed in March 2021) are listed below:

<table>
<tr><th>Location</th><th>Species</th><th>Fluoride (in ppm)</th></tr>
<tr><td>Bomaloi</td><td>Brinjal Leaf,
Curry Tree leaf</td><td>1.32</td></tr>
<tr><td>Gurupali</td><td>Neem Tree, Duba Grass</td><td>1.26</td></tr>
<tr><td>Plant Site</td><td>Karanja Tree, Duba Grass</td><td>1.84</td></tr>
<tr><td>Thelkolai</td><td>Duba Grass, Jammu Tree</td><td>1.34</td></tr>
<tr><td>Gumukarma</td><td>Bamboo Tree, Duba Grass</td><td>1.48</td></tr>
<tr><td>Ghichamura</td><td>Badhial Tree, Duba Grass</td><td>0.90</td></tr>
<tr><td>Tileimal</td><td>Bela tree, Duba Tree</td><td>1.10</td></tr>
<tr><td>Lapanga</td><td>Neem tree</td><td>1.56</td></tr>
<tr><td>Jangala</td><td>Bamboo Tree, Tomato Leaf</td><td>1.28</td></tr>
<tr><td>Bhadrapali</td><td>Duba Grass,Tomato Leaf</td><td>1.32</td></tr>
</table>

Dry scrubbing system is being provided as gas treatment centre (GTC) to each of the pots in the pot room to control fugitive emission.</td></tr>
<tr><td>vii)</td><td>Electrostatic Precipitators (ESP) will be provided to Captive Power Plant (CPP) to control particulate emissions below 50 mg/Nm3.

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.

The emissions shall conform to the standards prescribed by the Ministry CPCB/SPCB whichever is more stringent.</td><td>Electrostatic Precipitators (ESP) of adequate efficiency is installed in Captive Power Plant (CPP) to restrict particulate emissions within 50 mg/Nm^3.

Two nos. of Gas Treatment Centre (GTC) provided and connected to each 180 pots. Besides, Bag filters installed in all the material handling & transfer points in Smelter. Fume treatment centre (FTC) provided to each Anode Baking Furnaces to treat the tar fumes, dust, gaseous and particulate fluorides generated during Anode Baking.

The standards prescribed by the Ministry/ CPCB/ SPCB is being adhered.

The results of the stack emission from the CPP units from Oct’ 20 to March’ 21 is stated below:

<table>
<tr><td rowspan="2">CPP Stack</td><td colspan="3">PM Emission (mg/Nm3)</td></tr>
<tr><td>(Min)</td><td>(Max)</td><td>(Avg)</td></tr>
<tr><td>CPP 1</td><td>38.7</td><td>44.1</td><td>42.03</td></tr>
<tr><td>CPP 2</td><td>39.2</td><td>45.3</td><td>43.07</td></tr>
<tr><td>CPP 3</td><td>37.2</td><td>46.8</td><td>42.09</td></tr>
<tr><td>CPP 4</td><td>42.4</td><td>43.8</td><td>44.10</td></tr>
<tr><td>CPP 5</td><td>41.2</td><td>47.6</td><td>43.84</td></tr>
<tr><td>CPP 6</td><td>38.7</td><td>45.2</td><td>40.47</td></tr>
</table></td></tr>
<tr><td>viii)</td><td>Provision for installation of FGD shall be provided</td><td>Provisional Space has been kept for installation of</td></tr>
</table>

	for future use.	FGD and will be utilized for the proposed FGD near to the Power plant. CTE for the Semi dry FGD project has been issued on 18/12/2020. The construction of FGD project is under progress in Unit # 6 of the existing 6x150 MW CPP.
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 continuous online monitoring equipment's for SO_2, NO_x, and PM_{10}.	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. Continuous emission monitoring system (CEMS) installed for monitoring of SO_2, NOx, and PM in all the stacks of CPP and the velocity of the exit flue gas is being maintained above 22 m/s.
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 4th year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	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, used in own fly ash brick units and utilizing for development of low lying areas with ash inside the Plant premises with the prior approval of SPCB, Odisha. The low-lying areas is being filled-up with Ash as per the Guideline for Reclamation Low Lying Areas and Abandoned Quarries with Ash of SPCB, Odisha. The efforrts being made for achiving target ash utilization as stated below: ➢ Increase supply to Cement Plants like M/s Ultratech, Jharsuguda unit; M/s ACC, Bargarh Unit; M/s OCL, Rajgangpur Unit ➢ Use in own ash brick unit installed inside the plant & increased supply to the local brick manufacturing Units ➢ Low lying area development, ash dyke raising and road making inside and outside the plant premises ➢ A dedicated team is working to explore more areas of Ash utilization like Road making, Abandoned mines/quarry filling, infrastructure projects etc.

<table>
<tr><td></td><td></td><td>Started Fly ash dispatched thorugh BOXN Wagon in Rakes to various cement manufacturing units and resulted increase in ash utilization.

The Status of ash utilization from Oct’ 20 to March’ 21 is stated below:

<table><tr><td>Oct’ 20 to March’ 21</td><td>Quantity in MT</td></tr><tr><td>Total ash generated</td><td>737446.71</td></tr><tr><td>Total Ash Utilised</td><td>803536.5</td></tr><tr><td>Utilization (%)</td><td>109.21 %</td></tr></table>
Details of the ash utilization from Oct’ 20 to March’ 21 is attached as annexure- 4.

Due to Covid-19 Lockdown, the ash dispatch to cement plants, ash brick manufacturers etc has been impacted, therefore we are not able achive the target ash utilization for FY 20-21.</td></tr>
<tr><td>xii)</td><td>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.</td><td>Fly ash & 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 dischatged to the Ash pond through High Concentration Slurry Dsipsoal (HCSD) system, which is the most environment friendly conveying system at present. Monitoring of Mercury and other heavy metals (Ag, Hg, Cr, Pb etc) is being done for the fly ash and bottom ash. The analysis report is enclosed as Annexure-5.

The ash filling in the low lying area inside the plant premises is being carriedout in line with the guideline for disposal/utilization of fly ash for reclamation of Low Lying Areas and in stowing of Abandoned mines/Quarries. (Ref: CPCB guideline published in March 2019).</td></tr>
<tr><td>xiii)</td><td>Fluoride (as F) consumption shall be less than 10 kg/ton of Aluminium produced as specified by the CREP.</td><td>The specific fluoride (as F) consumption for the period Oct’ 20 to March’ 21 is 7.98 kg/ton of Aluminium produced.</td></tr>
<tr><td>xiv)</td><td>Anode butts generated from the pots shall be cleaned and recycled to the Anode Plant.

The spent pot lining generated from the smelter shall be properly treated in spent pot lining treatment plant to remove fluoride and cyanide</td><td>Anode butts generated from the pots is being cleaned and recycled completely for making green anode in green anode plant.

The Carbon part of SPL is being supplied to M/s Green Energy Limited, Sambalpur for reprocessing/detoxification and in this way the</td></tr>
</table>

	and disposed-off in secured landfill. 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). The dross shall be recycled in the cast house. STP sludge shall be utilized as manure for greenbelt development. All the used oil and batteries shall be sold to the authorized recyclers/ re-processors.	carbon part is completely recycled. M/s Ramky Enviro Pvt. Ltd has established the facility for detoxification and disposal as per the protocol given by CPCB in its CHW-TSDF at kanchichuhan, Dist- Jajpur site. M/s Ramky has started lifting the refractory part of SPL for the trial run permission given by OSPCB. Around 8442 MT SPL Refractory part and 225 MT Carbon part is in stock till end of March 2021 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users. We are awaiting for OSPCB Consent/ Permission to M/S Ramky Enviro Pvt Ltd. For regular lifting of SPL Refractory materials to their CHW-TSDF. Besides, we are also exploring the option for co-processing of SPL in cement plants. 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. The dross recycling is being done in the inhouse dross processing unit and the residue generated is sent to Actual Users/CHW-TSDF for recycling/disposal. STP is in operation at township & Plant area separately, the sludge generated is being used for gardening/greenbelt development. The used oil and batteries are being sold/supplied to authorized recyclers/reprocessors only.
xv)	As proposed, spent pot lining waste shall also be provided to cement and steel industries for further utilization.	The Carbon part of SPL is being supplied to the OSPCB authorized recycler M/s Green Energy Resources, Sambalpur. In the absence of CPCB protocol for pre processing of SPL Refractory parts, we are exploring the option for co-processing of SPL in cement plants.
xvi)	Ash pond shall be lined with HDP/LDPE lining or any other suitable impermeable media such that	The ash disposal area has been studied and Designed by the Experts of NIT-Rourkela. The

	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.	ash pond and water decantation system is constructed in line with the design & drawings provided by NIT-Rourkela. The ash pond is provided with HDPE liner and adequate safety measures have been taken to minimize the risk to the ash dyke. The ash disposal through HCSD system to the ash pond started from January 2017. The decanted water from the ash pond is being completely recycled and reused for ash disposal.
xvii)	Cycle of concentration (CoC) of 5.0 shall be adopted.	We are maintaing the average CoC of cooling tower above 5.
xviii)	Regular monitoring of ground water shall be carried out by establishing a network of existing wells and constructing new piezometers. 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.	Regular monitoring of ground water is being carriedout through establishing a network of existing wells and constructing two nos new piezometer wells near ash pond areas and the analysis report is enclosed as Annexure-6. Monitoring of heavy metals (Hg, Cr, As, Pb) around the Ash pond area is being carried and record maintained. Please refer annexure-5 for the analysis report.
xix)	Regular ground water monitoring shall be carried out by installing peizometers 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.	Secured landfill (SLF) has not yet been established inside the plant. Therefore, ground water quality monitoring shall be carried out after establishment of the SLF.
xx)	Total water requirement for the expansion from Hirakud Reservoir shall not exceed 5,200 m3/hr and prior permission for the existing and proposed expansion shall be obtained from the concerned department before commissioning of the plant. 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. Domestic effluent shall be treated in sewage treatment plant (STP) and treated domestic waste water will be used for greenbelt	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. The Effluent from the cooling towers and de-mineralization plant is being treated in Double Stage RO based effluent treatment plant and is being reused/reutilized in the process of CPP. Separate Sewage Treatment Plant (STP) is installed @ capacity 25 m^3/hr for Smelter & Captive Power Plant, STP of 300 KLD capacity is installed at Township area and the treated water being used for greenbelt development.

	development.	
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^3/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 an area of 941 acres inside the plant, ash pond area and township areas. Around 5,76,500 saplings planted till March 2021.
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 harvesting scheme has been submitted to CGWA for approval vide our letter no. AA/E&F/EC/2016/131, dated 09/04/2016.
xxv)	Rehabilitation and Resettlement Action Plan as prepared and submitted to the State Govt. shall be implemented as per the R & R Policy of the State Government. All the recommendations mentioned in the R&R Plan shall be strictly followed including suitable employment and other facilities to all the oustees.	Rehabilitation and Resettlement Action Plan is being implemented as per the R & R policy, 2006 of the State Govt. All the recommendations mentioned in the R&R plan are being followed/complied.
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 Annexure-7.
xxvii)	The company shall adopt well laid down 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.	The company has adopted a well laid down Corporate Environment Policy. The Enviornment policy has been revised and approved by the Board in 30 June 2020. The copy of the revised environment policy is attached as annexure-8.
xxviii)	All the commitments made to the public during public hearing /public consultation meeting held on 2nd 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 2nd march 2012 is being complied. (Status of implementation is enclosed as annexure-9).

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 Enterpise Social Commitment (ESC) till March 2021 is Rs 52.54 Crores. The details of the expenditure made under Enterpise Social Commitment (ESC) till March 2021 is attached as annexure-10.
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.	The construction activities are completed after the plant is installed & commissioned. However, in case of any construction & maintainance activities from time to time we are providing all necessary infrastructure and facilities to the workers as per rules & guidelines.
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 is already submitted to MoEF. The organizational structure of Corporate Sustainability cell is being revised and the modified one will be submitted after the formal structure is published by Hindalco Management.
	GENERAL CONDITIONS	
i)	The project authorities must strictly adhere to the stipulations made by the OSPCB and the State Government.	We have been following the stipulations made by OSPCB and the State Government. The compliance to CTO conditions is being submitted to OSPCB as per requirement.
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 19th 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	Installation of four (04) CAAQMStations completed and commissioned. Data connectivity established with the servers of

	ground level concentration of SPM, SO_2 and NO_x 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.	OSPCB and CPCB. Installation of the continuous stack emission monitoring system in all the major stacks completed. All the CAAQMS & CEMS synchronized with the webserver of the SPCB & CPCB. Six-monthly compliance along with the monitoring data is being submitted to the concerned authorities regularly.
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).	The overall noise levels in and around the plant area is within the prescribed standards and it is being made possible by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The overall noise level is within the standard, regular monitoring is being done. All necessary PPEs are provided to the workers and engineers working in the factory.
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 and safeguards recommended in the EIA report. Further the company must undertake socio-economic development activities in the surrounding villages like community development progammes, drinking water supply and health care etc.	We have noted and accepted all the conditions and will comply in a time bound manner. The economic development activities are going on regularly as a part of our corporate social responsibility. A team of personnel 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 Annexure-11.
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	Requisite fund was allocated and has been spent towards capital cost and recurring cost/annum is also allotted & spent for environment pollution control measures & environmental management in each year.

	purpose.	
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 1stJune and 1stDec respectively with a copy to CPCB & OSPCB and the same is being uploaded into the Company website. (http://www.hindalco.com/sustainability/regulatory-compliances). 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 respective Zonal Offices of CPCB and the SPCB. The Regional office of this Ministry at Bhubaneswar. CPCB/SPCB shall monitor the stipulated conditions.	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. The monitoring data in respect of AAQ, water, soil, noise etc is enclosed as Annexure-12.
xiii)	The environmental statement for each financial year ending 31st 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 31st 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	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 SPCB and may also be seen at website of the Ministry of Environment & Forest at http/www.envfor.nic.in. 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.	"The Samaja" on 05-12-2012, within seven days of receiving the clearance letter. 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 of the Project is completed on 17th September 2012 and Construction activities for Phase-I completed and in operating 360 pots out of 360 pots in Smleter and 6 units (6x150 MW) in CPP.
Sr. No.	**EC Amendmnet Additional Conditions**	**Compliance Status**
i)	The project proponent shall develop in-house facilities for treatment of Spent Pot Lining (SPL) generated in the Aluminium smelter. Meanwhile, Refractory part may be sent to CHWTSDF as per the provisions of Hazardous and Other Waste Amendment Rules, 2016.	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. The SPL refractory part generated is being stored inside the covered shed in line with the Rule-8 of HW (H,M & TM) Rules, 2016 for disposal to CHW-TSDF. M/s Ramky Enviro Pvt. Ltd has established the facility for detoxification and disposal as per the protocol given by CPCB in its CHW-TSDF at kanchichuhan, Dist- Jajpur site. M/s Ramky has started lifting the refractory part of SPL for the trial run given by OSPCB. Around 8442 MT SPL Refractory part and 225 MT Carbon part is in stock till end of March 2021 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users. We are awaiting for OSPCB Consent/ Permission to M/S Ramky Enviro Pvt Ltd. For regular lifting of SPL Refractory materials to their CHW-TSDF. Besides, we are also exploring the option for co-processing of SPL in cement plants.
ii)	The PP shall ensure 100% utilization of Fly ash generated.	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,

<table>
<tr><td></td><td></td><td>using in own fly ash brick units and utilizing for development of low lying areas inside the Plant premises with the prior approval of SPCB, Odisha. The low-lying areas is being filled-up with Ash as per the Guideline for Reclamation Low Lying Areas and Abandoned Quarries with Ash of SPCB, Odisha. Besides, we are also exploring other modes/areas for more ash utilization. Please refer to Annexure-4 for ash utilization from Oct’ 20 to March’ 21.

Started Fly ash dispatched thorugh BOXN Wagon in Rakes to various cement manufacturing units and resulted increase in ash utilization.

The Status of ash utilization from Oct’ 20 to March’ 21 is stated below:

<table>
<tr><td>Oct’ 20 to March’ 21</td><td>Quantity in MT</td></tr>
<tr><td>Total ash generated</td><td>737446.71</td></tr>
<tr><td>Total Ash Utilised</td><td>803536.5</td></tr>
<tr><td>Utilization (%)</td><td>109.21 %</td></tr>
</table>

Due to Covid-19 Lockdown, the ash dispatch to cement plants, ash brick manufacturers etc has been impacted, therefore we are not able achive the target ash utilization in the FY 20-21.</td></tr>
<tr><td>iii)</td><td>All the measures proposed during the presentation and application shall be implemented.</td><td>We have noted and will be implemented.</td></tr>
<tr><td>iv)</td><td>Sale of baked anodes; sale of bath material; and sale of molten metal is permitted following the provisions of Hazardous and Other Waste Management Rules, 2016, applicable if any.</td><td>We have noted and accepted.</td></tr>
<tr><td>v)</td><td>The project proponent shall develop in-house facilities for treatment of SPL in 2 to 3 years.</td><td>Carbon part is being suppied to M/s Green Energy Resureces for detoxification and reuse as carbon fuel. Refractory part started dispatching to CHW-TSDF of M/s Ramky at Jajpur, Odisha for detoxification and disposal in the CHW-TSDF.

We are in the process of exploring suitable technology for treatment and areas of utilization(co-processing in cement plants).</td></tr>
<tr><td>vi)</td><td>All the conditions prescribed in the environmental clearance letter No.J-11011/136/2009-IA-II(I) dated 29.11.2012 shall be</td><td>It is being Complied.</td></tr>
</table>

	strictly complied with.	
vii)	The Project Proponent shall take fresh environment clearance in case of any change in the scope of the project.	There is no change in the scope of the project.

Encl: As above

(Authorised 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) Envt. /Forest Clearance Nos.	i. Env Clearance vide letter No: J-11011/136/2009-IA-I(I), Dated 29/11/2012, amendment dated 14 June 2013, 14 Aug 2018 & 20 July 2020 ii. Forest Clearance vide letter No: 8-27/2009-FC, 10.02.2011
2	Location/ Block/ Sub-Divn./ Dist/ State	Aditya Aluminium (A Div. of Hindalco Industries Limited) At/Po- Lapanga, Dist- Sambalpur Pin - 768 212, Odisha6
3	Address for communication	Aditya Aluminium (A Div. of Hindalco Industries Limited) At/Po- Lapanga, Dist- Sambalpur 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 asfollows- Terminalia arjuna; Pongamia pinnata; Gmelina arboria; Anthocephallus cadamba; Dalbergia latifolia; Azadiracta indica;Albizzia Lebbeck; Delonix regia; Ailanthus exelsa, Casseasiamea; Cassia fistula, Butea monosperma, Madhuca indica etc
5	a) Species: (trees/shrubs/grasses/climbers)	Terminalia arjuna; Pongamia pinnata; Gmelina arboria; Anthocephallus cadamba; Dalbergia latifolia; Azadiracta indica; Albizzia Lebbeck; Delonix regia; Ailanthus exelsa, Casseasiamea; Cassia fistula, etc Butea monosperma, Madhuca indica etc trees species available.
	b) Major prevalent species of each type:	AnthocephallusCadambaTerminalia arjuna, Peltoferrumferrugenium, Gmelina arboria, AlberziaLebbeck, Delonix regiaetc are the prevalent species found. Butea monosperma, Madhuca indica etc
6	Land coverage by the project:	1347.35 Ha
	a. Name and number of tree/species felled	2002 no's 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	941 acres covered under greenbelt Oct 2020.
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

Greenbelt	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 941 acres of land has been covered under greenbelt and the remaining area will be completed by next year.				

b) Plantation details (category wise &methodology used)

Year of plantation	**Species Planted**	**Spacing**	**Height attained**	**Total area covered**	**Area still available**
2010-11 & 2011-12	Terminalia arjuna; Pongamia pinnata; Gmelina arboria; Anthocephallus cadamba; Dalbergia latifolia; Azadiracta indica; Albizzia Lebbeck; Delonix regia; Ailanthus exelsa,Cassea siamea; Cassia fistula, etc	2*2	32'-36'	14.7 Ha	Plantation is being done in phased manner.
2012-13		3*3	25'-27'	38.2 Ha	
2013-14		3*3	22'-25'	11.2 Ha	
2014-15		3*3	20'-22'	16.8 Ha	
2015-16		4*4	18'-20'	24.36 Ha	
2016-17		2*2	15'-18'	20.0 Ha	
2017-18		2*2	13'-16'	46.8 Ha	
2018-19		2*2	10'-12'	45.0 Ha	
2019-20		2*2	7'- 9'	82.96 Ha	
2020-21		2*2	3'-4'	80.94 Ha	
Total				381 Ha or 941 Acres	

c) Survival of Plantation:

Total Plantation (No.)	5,76,500
Survival (No.)	5,18,850
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	2010-11	81,62,000	81,62,000.00	245.00
2	2011-12			
3	2012-13	46,21,600	46,21,600.00	121.00
4	2013-14	13,62,500	13,62,500.00	121.00
5	2014-15	18,53,000	18,53,000.00	115.00
6	2015-16	18,65,000	18,65,000	109.00
7	2016-17	49,00,000	49,00,000	100.00
8	2017-18	68,00,000	68,00,000	71.00
9	2018-19	70,00,000	70,00,000	77.00
10	2019-20	70,00,000	72,00,000	84.00
11	2020-21	75,00,00	75,00,000	70.00

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

Forest officials from Divisional Forest Office, Sambalpur and Forest Renge Office, Rengali arevisiting to our location at periodic intervals and giving their technical guidance from time to time. Joint Director/Director of Regional Office of MoEF&CC, Bhubaneswar also visit our plant site periodically.

12. Remarks/ any other information :

Indigenous species have been planted as per the Guideline of CPCB.

(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

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 and 2013, 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 : 63
   b) Employment given so far : 60

6. Rehabilitation & Resettlement details: Total Displaced Persons Numbers – 430

a	No. of families rehabilitated				
i	Name of the Site	Aditya Aluminium			
ii	Families rehabilitated	SC	ST	OTH	Total
		08	368	18	394
b	Families yet to be rehabilitated				
i	Name of the Site(s)	Aditya Aluminium			
ii	No. of families (Total - 430)	SC	ST	OTH	Total
		00	22	14	36

7. Any other information : NIL

(Authorised Signatory)

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001: 2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 4751 **Date : 02.11.2020**

STACK EMISSION MONITORING REPORT FOR OCTOBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 28.10.2020
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 : 29.10.2020 to 31.10.2020

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	93.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	11.2
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	107052.8
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	743.3
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	9.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	288.3
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	63.8
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.15
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.43
Total Fluoride as F	mg/Nm3	Calculation	-	0.58
Tar Fumes	mg/Nm3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	µg/Nm3	Gas Chromatography	-	ND

Note: ND: Not Detected

Prepared By

Reviewed By

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001: 2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 4752 **Date : 02.11.2020**

STACK EMISSION MONITORING REPORT FOR OCTOBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 28.10.2020
3. Sampling Location : **ST-8: Stack attached to ABF-2 - 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 : 29.10.2020 to 31.10.2020

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard(OSPCB)**	**Analysis Results**
				ST-8
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	92.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	10.4
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	61491.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	742.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	22.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	247.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	65.5
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.17
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.43
Total Fluoride as F	mg/Nm^3	Calculation	-	0.60
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

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ISO 9001: 2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 6261 **Date : 01.12.2020**

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.11.2020
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 : 21.11.2020 to 24.11.2020

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	95.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	10.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	103307.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	743.6
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	8.3
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	263.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	71.5
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.15
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.41
Total Fluoride as F	mg/Nm3	Calculation	-	0.56
Tar Fumes	mg/Nm3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	µg/Nm3	Gas Chromatography	-	ND

Note: ND: Not Detected.

Prepared By

Reviewed By

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001: 2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 6262 **Date : 01.12.2020**

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.11.2020
3. Sampling Location : **ST-8: Stack attached to ABF-2 - 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 : 21.11.2020 to 24.11.2020

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard(OSPCB)	Analysis Results
				ST-8
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	95.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	11.3
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	66792.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	741.9
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	14.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	242.2
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	74.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.16
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.56
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

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Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001:2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 6728 **Date : 01.01.2021**

STACK EMISSION MONITORING REPORT FOR DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 21.12.2020
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 22.12.2020 TO 24.12.2020

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	90.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	13.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	125064.2
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	743.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	7.7
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	276.3
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	77.2
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.34
Total Fluoride as F	mg/Nm3	Calculation	-	0.45
Tar Fumes	mg/Nm3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	µg/Nm3	Gas Chromatography	-	ND

Note: ND: Not Detected

Prepared By Reviewed By

Visiontek Consultancy Services Pvt. Ltd.

(An Enviro Engineering Consulting Cell)

ISO 9001:2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 6729 **Date : 01.01.2021**

STACK EMISSION MONITORING REPORT FOR DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 21.12.2020
3. Sampling Location : **ST-8: Stack attached to ABF-2 - FTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 22.12.2020 TO 24.12.2020

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard(OSPCB)**	**Analysis Results**
				ST-8
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	92.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	11.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	66205.6
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	741.4
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	31.3
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	253.9
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	72.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.17
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.38
Total Fluoride as F	mg/Nm^3	Calculation	-	0.55
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

Prepared By Reviewed By

Ref : Envlab/20/R- 7423 **Date : 29.01.2021**

STACK EMISSION MONITORING REPORT FOR JANUARY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.01.2021
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.01.2021 TO 23.01.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	102.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	12.7
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	118326.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	741.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	5.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	293.5
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	84.7
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.39
Total Fluoride as F	mg/Nm3	Calculation	-	0.51
Tar Fumes	mg/Nm3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	µg/Nm3	Gas Chromatography	-	ND

Note: ND: Not Detected

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Ref : Envlab/20/R- 7424 **Date : 29.01.2021**

STACK EMISSION MONITORING REPORT FOR JANUARY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.01.2021
3. Sampling Location : **ST-8: Stack attached to ABF-2 - FTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.01.2021 TO 23.01.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	93.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	11.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	62685.2
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	741.1
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	10.3
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	266.2
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	79.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.43
Total Fluoride as F	mg/Nm^3	Calculation	-	0.46
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	µg/Nm^3	Gas Chromatography	-	ND

Note: ND: Not Detected.

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Ref : Envlab/20/R- 8402 **Date : 01.03.2021**

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.02.2021
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.02.2021 TO 27.02.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	11.6
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	109868.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	741.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	8.7
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	297.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	88.3
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm3	Calculation	-	0.52
Tar Fumes	mg/Nm3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	µg/Nm3	Gas Chromatography	-	ND

Note: ND: Not Detected

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Ref : Envlab/20/R- 8403 **Date : 01.03.2021**

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.02.2021
3. Sampling Location : **ST-8: Stack attached to ABF-2 - FTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.02.2021 TO 27.02.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Methodology	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-8
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	87.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	11.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	67281.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	740.1
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	21.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	278.1
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	83.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.16
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride as F	mg/Nm^3	Calculation	-	0.60
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	µg/Nm^3	Gas Chromatography	-	ND

Note: ND: Not Detected.

Reviewed By

Approved By

Ref : Envlab/20/R- 9129 **Date :01.04.2021**

STACK EMISSION MONITORING REPORT FOR MARCH-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.03.2021
3. Sampling Location : **ST-7: Stack attached to ABF-1 - FTC-1**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.03.2021 to 26.03.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	2.06 Meter
Height of Sampling Point	40 Meter
Capacity	504 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-7
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	12.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	117924.4
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	742.4
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	9.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	284.7
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	81.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride as F	mg/Nm^3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0015
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected

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Ref : Envlab/20/R- 9130 **Date : 01.04.2021**

STACK EMISSION MONITORING REPORT FOR MARCH-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.03.2021
3. Sampling Location : **ST-8: Stack attached to ABF-2 - FTC-2**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.03.2021 to 26.03.2021

Stack Description	
Stack Height	70 Meter
Stack Diameter	1.6 Meter
Height of Sampling Point	40 Meter
Capacity	336 Anode/Day
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Methodology**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-8
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	92.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	10.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	58637.6
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	741.3
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	20.4
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	263.8
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	85.1
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride as F	mg/Nm^3	Calculation	-	0.57
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0008
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatography	-	ND
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	ND

Note: ND: Not Detected.

Reviewed By

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Ref : Envlab/20/R- 4749 **Date : 02.11.2020**

STACK EMISSION MONITORING REPORT FOR OCTOBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 28.10.2020
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 : 29.10.2020 to 31.10.2020

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 Nos.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	UOM	Protocol	Permissible Limit	Results
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	105.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.3
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2007395.9
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	738.4
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	3.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	84.7
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	63.9
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.44
Total Fluoride	mg/Nm^3	Calculation	-	0.58

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ISO 9001: 2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 4750 **Date : 02.11.2020**

STACK EMISSION MONITORING REPORT FOR OCTOBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 27.10.2020
3. Sampling Location : **ST-10: Stack attached to GTC-2 (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 : 28.10.2020 to 31.10.2020

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 Nos.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	108.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	7.9
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1885630.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	738.4
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	3.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	84.8
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	52.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride	mg/Nm^3	Calculation	-	0.57

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Visiontek Consultancy Services Pvt. Ltd.

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ISO 9001: 2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 6263 **Date : 01.12.2020**

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.11.2020
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 : 21.11.2020 to 24.11.2020

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	UOM	Protocol	Permissible Limit	Results
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	106.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2058255.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	738.7
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	3.4
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	81.7
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	60.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.45
Total Fluoride	mg/Nm^3	Calculation	-	0.60

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ISO 9001: 2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 6264 **Date : 01.12.2020**

STACK EMISSION MONITORING REPORT FOR NOVEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.11.2020
3. Sampling Location : **ST-10: Stack attached to GTC-2 (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 : 20.11.2020 to 24.11.2020

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	109.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.5
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2018196.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	740.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	3.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	78.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	55.1
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.15
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride	mg/Nm^3	Calculation	-	0.59

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Reviewed By

Ref : Envlab/20/R- 6726 **Date : 01.01.2021**

STACK EMISSION MONITORING REPORT FOR DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.12.2020
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.12.2020 TO 25.12.2020

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 Nos.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	UOM	Protocol	Permissible Limit	Results
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	103.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.3
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1956383.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	738.0
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	2.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	88.5
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	62.1
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.43
Total Fluoride	mg/Nm^3	Calculation		0.56

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ISO 9001:2015
ISO 14001:2015
ISO 45001:2018 (OH&S)
ISO/IEC 17025:2005

Ref : Envlab/20/R- 6727 **Date : 01.01.2021**

STACK EMISSION MONITORING REPORT FOR DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 21.12.2020
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 22.12.2020 TO 25.12.2020

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 Nos.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	7.6
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1791173.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	738.9
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	6.0
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	74.1
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	58.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.14
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm^3	Calculation	-	0.55

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Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

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- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref : Envlab/20/R- 7421 **Date : 29.01.2021**

STACK EMISSION MONITORING REPORT FOR JANUARY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.01.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS I
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.01.2021 TO 22.01.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	UOM	Protocol	Permissible Limit	Results
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	7.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1820097.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	738.9
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	50	2.5
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	93.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	64.5
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.41
Total Fluoride	mg/Nm^3	Calculation	-	0.53

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Reviewed By

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Approved By

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Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

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- Renewable Energy
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- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref : Envlab/20/R- 7422 **Date : 29.01.2021**

STACK EMISSION MONITORING REPORT FOR JANUARY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.01.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.01.2021 TO 22.01.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Protocol	Emission Prescribe Standard (OSPCB)	Analysis Results ST-10
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.6
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2024756.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	741.3
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	50	3.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	82.5
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	61.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.44
Total Fluoride	mg/Nm^3	Calculation	-	0.57

VISIONTEK CONSULTANCY SERVICES PVT. LTD. Reviewed By

VISIONTEK CONSULTANCY SERVICES PVT. LTD. Approved By

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Ref : Envlab/20/R- 8400 **Date : 01.03.2021**

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.02.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.02.2021 TO 27.02.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	UOM	Protocol	Permissible Limit	Results
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	103.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.7
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2053856.2
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	740.7
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	2.06
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	96.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	66.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.43
Total Fluoride	mg/Nm^3	Calculation	-	0.55

Reviewed By

Approved By

Ref : Envlab/20/R- 8401 **Date : 01.03.2021**

STACK EMISSION MONITORING REPORT FOR FEBRUARY-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.02.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.02.2021 TO 23.02.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^0C	IS 11255: Part 3 :1985 (RA 2008)	-	103.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1898554.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	744.9
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	2.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	79.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	64.5
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.13
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.43
Total Fluoride	mg/Nm^3	Calculation	-	0.56

Reviewed By

Approved By

Ref : Envlab/20/R- 9127 **Date : 01.04.2021**

STACK EMISSION MONITORING REPORT FOR MARCH-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 18.03.2021
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 19.03.2021 to 23.03.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	Unit of Measurement	Protocol	Permissible Limit	Results
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	112.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	2065782.8
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	739.3
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	2.3
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C:2017	-	91.0
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	68.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode Method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode Method	-	0.41
Total Fluoride	mg/Nm^3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	**0.3**	0.053

Reviewed By

Approved By

Ref : Envlab/20/R- 9128 **Date : 01.04.2021**

STACK EMISSION MONITORING REPORT FOR MARCH-2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.03.2021
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Vayubodhan Stack Sampler VSS 1
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.03.2021 to 23.03.2021

Stack Description	
Stack Height	100 Meter
Stack Diameter	10.4 Meter
Height of Sampling Point	65 Meter
Number of Pot in operation	180 No.
Pollution Control Device Attached with the Stack	Bag Filter

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-10
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (RA 2008)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (RA 2008)	-	8.3
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (RA 2008)	-	1989224.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (RA 2008)	-	736.1
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (RA 2003)	**50**	2.9
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C :2017	-	83.2
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E :2017	-	66.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride	mg/Nm^3	Calculation	-	0.54
Specific Fluoride	Kg/T	Calculation	**0.3**	0.052

Reviewed By

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Annexure-3

POTROOM ONLINE FUGITIVE MONITORING(HF) REPORT October '20 TO March'21

Oct-20		Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesda	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Avg. in PPM
		01-10-20	02-10-20	03-10-20	04-10-20	05-10-20	06-10-20	07-10-20	08-10-20	09-10-20	10-10-20	11-10-20	12-10-20	13-10-20	14-10-20	15-10-20	16-10-20	17-10-20	18-10-20	19-10-20	20-10-20	21-10-20	22-10-20	23-10-20	24-10-20	25-10-20	26-10-20	27-10-20	28-10-20	29-10-20	30-10-20	31-10-20	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.029	0.053	0.113	0.014	0.026	0.039	0.041	0.009	0.006	0.007	0.228	0.461	0.581	0.446	0.554	0.509	0.622	0.485	0.675	0.589	0.55	0.591	0.272	0.361	0.45	0.434	0.424	0.44	0.381	0.251	0.386	0.323
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.482	0.432	0.479	0.585	0.506	0.538	0.527	0.496	0.514	0.447	0.551	0.551	0.524	0.561	0.509	0.602	0.449	0.533	0.498	0.607	0.54	0.586	0.489	0.584	0.487	0.556	0.455	0.554	0.44	0.49	0.455	0.517
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.742	0.212	0.289	0.483	0.691	0.414	0.548	0.421	0.485	0.508	0.487	0.39	0.464	0.501	0.552	0.506	0.462	0.486	0.413	0.419	0.458	0.339	0.454	0.411	0.505	0.396	0.544	0.372	0.567	0.341	0.577	0.466
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.056	0.12	0.133	0.007	0.119	0.091	0.153	0.123	0.193	0.091	0.223	0.192	0.164	0.097	0.144	0.142	0.162	0.243	0.199	0.229	0.126	0.144	0.124	0.093	0.117	0.151	0.103	0.063	0.097	0.079	0.08	0.131
																																Monthly Average(ppm)	0.359
																																Monthly Average (mg/M3)	0.299

Nov-20		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday		Avg. in PPM
		01-11-20	02-11-20	03-11-20	04-11-20	05-11-20	06-11-20	07-11-20	08-11-20	09-11-20	10-11-20	11-11-20	12-11-20	13-11-20	14-11-20	15-11-20	16-11-20	17-11-20	18-11-20	19-11-20	20-11-20	21-11-20	22-11-20	23-11-20	24-11-20	25-11-20	26-11-20	27-11-20	28-11-20	29-11-20	30-11-20		
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.386	0.447	0.37	0.256	0.294	0.302	0.376	0.311	0.343	0.224	0.271	0.376	0.277	0.344	0.306	0.431	0.373	0.446	0.399	0.315	0.314	0.341	0.346	0.317	0.333	0.367	0.3484	0.38	0.484	0.355		0.348
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.574	0.596	0.531	0.406	0.332	0.303	0.347	0.291	0.292	0.271	0.398	0.56	0.522	0.495	0.434	0.431	0.555	0.562	0.505	0.382	0.408	0.287	0.251	0.234	0.282	0.263	0.354	0.341	0.293	0.231		0.391
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.502	0.521	0.36	0.602	0.414	0.557	0.464	0.672	0.43	0.637	0.489	0.581	0.347	0.55	0.409	0.508	0.402	0.676	0.501	0.397	0.364	0.314	0.589	0.622	0.458	0.305	0.486	0.312	0.677	0.671		0.494
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.105	0.145	0.047	0.048	0.006	0.062	0.017	0	0	0.055	0.243	0.136	0.249	0.166	0.347	0.184	0.277	0.214	0.276	0.24	0.039	0.123	0.193	0.126	0.126	0.058	0	0.154	0.146	0.12		0.130
																																Monthly Average(ppm)	0.341
																																Monthly Average (mg/M3)	0.283

Dec-20		Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Avg. in PPM
		01-12-20	02-12-20	03-12-20	04-12-20	05-12-20	06-12-20	07-12-20	08-12-20	09-12-20	10-12-20	11-12-20	12-12-20	13-12-20	14-12-20	15-12-20	16-12-20	17-12-20	18-12-20	19-12-20	20-12-20	21-12-20	22-12-20	23-12-20	24-12-20	25-12-20	26-12-20	27-12-20	28-12-20	29-12-20	30-12-20	31-12-20	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.395	0.369	0.342	0.385	0.439	0.361	0.411	0.396	0.331	0.414	0.384	0.535	0.49	0.493	0.435	0.528	0.485	0.586	0.48	0.467	0.451	0.443	0.357	0.514	0.422	0.489	0.394	0.404	0.429	0.426	0.309	0.431
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.206	0.196	0.213	0.264	0.229	0.216	0.234	0.226	0.206	0.229	0.227	0.363	0.322	0.467	0.438	0.381	0.425	0.292	0.24	0.174	0.172	0.174	0.081	0.214	0.173	0.226	0.184	0.182	0.19	0.215	0.139	0.242
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.632	0.787	0.734	0.731	0.579	0.74	0.678	0.821	0.649	0.806	0.544	0.806	0.599	0.678	0.62	0.872	0.685	0.761	0.685	0.779	0.514	0.676	0.427	0.739	0.128	0.715	0.188	0.656	0.529	0.615	0.451	0.639
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.227	0.174	0.119	0.202	0.183	0.175	0.148	0.141	0.166	0.137	0.084	0.158	0.279	0.124	0.049	0.159	0.142	0.062	0.001	0.072	0	0	0	0.059	0.049	0.0603	0.042	0.076	0.111	0.072	0.0338	0.107
																																Monthly Average(ppm)	0.355
																																Monthly Average (mg/M3)	0.295

Jan-21		Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Avg. in PPM
		01-01-21	02-01-21	03-01-21	04-01-21	05-01-21	06-01-21	07-01-21	08-01-21	09-01-21	10-01-21	11-01-21	12-01-21	13-01-21	14-01-21	15-01-21	16-01-21	17-01-21	18-01-21	19-01-21	20-01-21	21-01-21	22-01-21	23-01-21	24-01-21	25-01-21	26-01-21	27-01-21	28-01-21	29-01-21	30-01-21	31-01-21	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.3	0.417	0.354	0.412	0.335	0.442	0.486	0.464	0.412	0.415	0.458	0.509	0.283	0.336	0.389	0.457	0.355	0.352	0.274	0.406	0.335	0.349	0.343	0.348	0.274	0.327	0.317	0.349	0.141	0.203	0.224	0.357
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.156	0.211	0.224	0.265	0.31	0.301	0.539	0.539	0.509	0.461	0.358	0.32	0.183	0.124	0.192	0.192	0.225	0.188	0.201	0.401	0.282	0.164	0.244	0.302	0.318	0.28	0.365	0.349	0.137	0.153	0.154	0.279
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.491	0.493	0.442	0.371	0.437	0.443	0.589	0.43	0.494	0.397	0.351	0.377	0.443	0.406	0.504	0.504	0.521	0.569	0.609	0.499	0.573	0.421	0.717	0.535	0.56	0.443	0.608	0.499	0.513	0.454	0.413	0.487
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.0947	0.0883	0.095	0.144	0.082	0.254	0.141	0.168	0.113	0.19	0.132	0.21	0.071	0.061	0.047	0.047	0.097	0.082	0.167	0.187	0.106	0.141	0.096	0.179	0.12	0.274	0.109	0.114	0	0.182	0.09	0.125
																																Monthly Average(ppm)	0.312
																																Monthly Average (mg/M3)	0.260

Feb-21		Monday	Tuesday	Wednesda	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday				Avg. in PPM
		01-02-21	02-02-21	03-02-21	04-02-21	05-02-21	06-02-21	07-02-21	08-02-21	09-02-21	10-02-21	11-02-21	12-02-21	13-02-21	14-02-21	15-02-21	16-02-21	17-02-21	18-02-21	19-02-21	20-02-21	21-02-21	22-02-21	23-02-21	24-02-21	25-02-21	26-02-21	27-02-21	28-02-21				
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.313	0.25	0.332	0.342	0.172	0.263	0.232	0.332	0.329	0.308	0.346	0.182	0.237	0.25	0.382	0.25	0.195	0.231	0.262	0.193	0.339	0.203	0.306	0.169	0.256	0.204	0.239	0.191				0.261
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.158	0.163	0.202	0.183	0.136	0.175	0.199	0.208	0.228	0.235	0.253	0.264	0.492	0.319	0.325	0.254	0.156	0.234	0.321	0.345	0.265	0.369	0.342	0.422	0.396	0.518	0.361	0.459				0.285
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.467	0.519	0.404	0.581	0.391	0.548	0.449	0.601	0.579	0.509	0.324	0.238	0.389	0.374	0.445	0.329	0.364	0.36	0.311	0.356	0.493	0.38	0.276	0.206	0.381	0.153	0.273	0.235				0.391
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.177	0.043	0.109	0.035	0.035	0.115	0.068	0.103	0.127	0.132	0.166	0.116	0.426	0.179	0.341	0.106	0	0.095	0.212	0.119	0.236	0.102	0.174	0.074	0.258	0.062	0.124	0.116				0.138
																																Monthly Average(ppm)	0.269
																																Monthly Average (mg/M3)	0.223

Mar-21		Monday	Tuesday	Wednesda	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Avg. in PPM
		01-03-21	02-03-21	03-03-21	04-03-21	05-03-21	06-03-21	07-03-21	08-03-21	09-03-21	10-03-21	11-03-21	12-03-21	13-03-21	14-03-21	15-03-21	16-03-21	17-03-21	18-03-21	19-03-21	20-03-21	21-03-21	22-03-21	23-03-21	24-03-21	25-03-21	26-03-21	27-03-21	28-03-21	29-03-21	30-03-21	31-03-21	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.293	0.237	0.191	0.222	0.145	0.174	0.167	0.196	0.246	0.211	0.237	0.198	0.162	0.164	0.061	0.188	0.299	0.152	0.102	0.103	0.257	0.173	0.215	0.115	0.202	0.31	0.244	0.183	0.222	0.132	0.205	0.194
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.398	0.425	0.27	0.348	0.303	0.409	0.278	0.261	0.249	0.332	0.234	0.353	0.167	0.338	0.188	0.347	0.297	0.304	0.21	0.289	0.324	0.371	0.299	0.337	0.439	0.506	0.334	0.325	0.408	0.339	0.341	0.323
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.246	0.207	0.235	0.274	0.241	0.232	0.241	0.146	0.307	0.216	0.193	0.185	0.158	0.175	0.079	0.114	0.205	0.111	0.116	0.259	0.381	0.259	0.406	0.371	0.333	0.399	0.266	0.446	0.385	0.294	0.313	0.251
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.229	0.124	0.166	0.072	0.162	0.135	0.085	0.078	0.158	0.131	0.066	0.187	0.266	0.092	0.082	0.13	0.099	0.135	0.079	0.18	0.158	0.114	0.192	0.139	0.149	0.175	0.154	0.138	0.189	0.095	0.214	0.141
																																Monthly Average(ppm)	0.227
																																Monthly Average (mg/M3)	0.189

ANNEXURE-4

NAME OF THE INDUSTRY:- ADITYA ALUMINIUM

STATUS OF UTILIZATION OF COAL ASH (FLY ASH AND BOTTOM ASH), From October 2020 - March 2021

Sl. No.	Month	Year	Coal Consumption (MT)	Power Installed Capacity (MW)	Power Generated (MW)	Qunatity 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/s UTCL, M/s ACC Ltd & M/s DBCL) in (MT)	Mine Void Filling (MT)	Utilization in Embankment / Dyke Raising (MT)	Road Making (MT)	Low Lying area filling/land development (MT)	Aggregates (MT)	Agriculture/Horticulture Sector (MT)	Sent to Ash Pond through HCSD & stock in Ash Silo	Ash Utilized from Previous Stock in Ash Pond (MT)	Ash Utilized from Current Month generation (MT) (Col. 20=Sum of col. 10 to 17)	Total Ash Utilized (MT) (Col. 21=Col. 19+ Col.20)	% of ash Utilization (Col. 22=Col. 21/ Col.8*100)	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	October	2020	333557.1	900	642.25	123879.0	6519.97	130398.97		6051.63	115995.64	0	0	0	5222.07	0	0	3129.63	1195.57	127269.3	128464.91	98.52	1195.57 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
2	November	2020	321048.3	900	643.75	116425.2	4851	121276.232		6896.36	109829.19	0	0	0	5016.69	0	0	-466.0	13525.3	121742.2	135267.5	111.54	13525.3 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
3	December	2020	333412.5	900	643.15	122610.6	5109	127719.64		5263.98	103285.06	0	0	0	6300.24	0	0	12870.4	17577.7	114849.3	132427.0	103.69	17577.7 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
4	January	2021	324566.9	900	642.53	115510.1	5813.6	121323.68		6858.95	102478.82	0	0	0	6180.38	0	0	5805.5	15502.3	115518.2	131020.4	107.99	15502.3 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
5	February	2021	294057.0	900	641.30	105277.4	5483.2	110760.64		6703.68	103793.51	0	0	1766.11	3174.89	0	0	-4677.6	14505.5	115438.2	129943.6	117.32	14505.5 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
6	March	2021	326685.3	900	640.04	119932.8	6034.75	125967.55		6201.02	116743.2	0	0	0	5287.68	0	0	-2264.4	18181.1	128231.9	146413.0	116.23	18181.1 MT pond ash has been supplied to Dalmia Cement, Rajgangpur.
	Total		1933327.0			703635.2	33811.5	737446.7		37975.6	652125.4	0.0	0.0	1766.1	31182.0	0.0	0.0	14397.7	80487.4	723049.1	803536.5	109	

Ref : Envlab/20/R- 9020 **Date : 06.01.2021**

FLY ASH ANALYSIS REPORT DECEMBER 2020

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 : 15.12.2020
4. Date of Analysis : 16.12.2020 TO 22.12.2020
5. Sample Collected By : VCSPL Representative

Sl. No.	Parameters	Unit	Analysis Results FA-01	Unit	Analysis Results FA-01
Chemical Analysis					
1	Na_2O	%	0.21	mg/kg	2100.0
2	MgO	%	0.92	mg/kg	9200.0
3	Al_2O_3	%	21.2	mg/kg	212000.0
4	SiO_2	%	50.8	mg/kg	508000.0
5	P_2O_5	%	0.024	mg/kg	240.0
6	SO_3	%	2.1	mg/kg	21000.0
7	K_2O	%	0.82	mg/kg	8200.0
8	CaO	%	4.2	mg/kg	42000.0
9	TiO_2	%	--	mg/kg	---
10	MnO	%	0.21	mg/kg	2100.0
11	Fe_2O_3	%	9.2	mg/kg	92000.0
Heavy Metals Analysis					
1	Mercury as Hg	%	<0.001	mg/kg	<0.001
2	Arsenic as As	%	<0.001	mg/kg	<0.001
3	Lead as Pb	%	0.014	mg/kg	142.0
4	Chromium as Cr	%	< 0.002	mg/kg	< 0.002
5	Vanadium as V	%	<0.001	mg/kg	<0.001
6	Iron as Fe	%	5.2	mg/kg	52000
7	Cobalt as Co	%	<0.001	mg/kg	<0.001
8	Copper as Cu	%	0.059	mg/kg	590.0
9	Nickel as Ni	%	0.089	mg/kg	890.0
10	Zinc as Zn	%	0.051	mg/kg	512.0
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	<0.001	mg/kg	<0.001

Prepare by: **Verified by:**

Ref : Envlab/20/R- 9021 **Date : 06.01.2021**

BOTTOM ASH ANALYSIS REPORT-DECEMBER 2020

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 : 15.12.2020
4. Date of Analysis : 16.12.2020 TO 22.12.2020
5. Sample Collected By : VCSPL Representative

Sl. No.	Parameters	Unit	Analysis Results BA-01	Unit	Analysis Results BA-01
Chemical Analysis					
1	Na_2O	%	0.28	mg/kg	2800
2	MgO	%	2.6	mg/kg	26000
3	Al_2O_3	%	28.1	mg/kg	281000
4	SiO_2	%	59.4	mg/kg	594000
5	P_2O_5	%	0.026	mg/kg	260
6	SO_3	%	1.21	mg/kg	121000
7	K_2O	%	0.96	mg/kg	9600
8	CaO	%	3.24	mg/kg	32400
9	TiO_2	%	--	mg/kg	--
10	MnO	%	0.29	mg/kg	2900
11	Fe_2O_3	%	6.8	mg/kg	68000
Heavy Metals Analysis					
1	Mercury as Hg	%	<0.001	mg/kg	<0.001
2	Arsenic as As	%	<0.001	mg/kg	<0.001
3	Lead as Pb	%	0.014	mg/kg	140
4	Chromium as Cr	%	< 0.002	mg/kg	< 0.002
5	Vanadium as V	%	<0.001	mg/kg	<0.001
6	Iron as Fe	%	6.8	mg/kg	68000
7	Cobalt as Co	%	<0.001	mg/kg	<0.001
8	Copper as Cu	%	0.026	mg/kg	260
9	Nickel as Ni	%	0.096	mg/kg	960
10	Zinc as Zn	%	0.068	mg/kg	680
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	<0.001	mg/kg	<0.001

Prepare by: **Verified by**

Mitra S. K. Private Limited

N-5/100, Ground Floor
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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/234
Date : 15.12.2020
Sample No. : MSKGL/ED/2020-21/11/00263
Sample Description : Ground Water
Sampling Location : Piezometric Borewell-1 (Near Ash Pond)
Date of Sampling : 27.11.2020

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement (Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^0C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.46
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	220.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	32.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	12.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.05)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	6.7
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	2.1
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	BDL(DL:1.0)
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	88.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.01)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.001)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	12.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	344
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	122.0

Report Prepared by: S. Kanungo

MITRA S.K. PRIVATE LIMITED

Mitra S. K. Private Limited
Authorized Signatory

Mitra S. K. Private Limited

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/235
Date : 15.12.2020
Sample No. : MSKGL/ED/2020-21/11/00264
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-2 (Near Proposed Ash Pond)
Date of Sampling : 27.11.2020

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^{0}C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.33
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	125.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	21.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	14.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.005)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	3.41
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	3.1
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	BDL(DL:1.0)
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	66.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	4.5
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	174
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	72.0

Report Prepared by: S. Kanungo

MITRA S.K. PRIVATE LIMITED

Mitra S. K. Private Limited

Authorized Signatory

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/236
Date : 15.12.2020
Sample No. : MSKGL/ED/2020-21/11/00265
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-3 (Near RR Colony)
Date of Sampling : 27.11.2020

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^0C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.1
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	0.86
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	168.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	24.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	36.0
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.005)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	7.8
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	2.5
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	3.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	92.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	6.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	283
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	46.0

Report Prepared by:

MITRA S.K. PRIVATE LIMITED

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/237
Date : 15.12.2020
Sample No. : MSKGL/ED/2020-21/11/00266
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-4 (Bomaloi Village)
Date of Sampling : 27.11.2020

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^{0}C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.26
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	180.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	21.62
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	38.79
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.05)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	4.88
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	2.7
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	2.38
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	74.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	7.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	270
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	82.0

Report Prepared by: S. Kanungo

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/403
Date : 08.03.2021
Sample No. : MSKGL/ED/2020-21/02/00375
Sample Description : Ground Water
Sampling Location : Piezometric Borewell-1 (Near Ash Pond)
Date of Sampling : 19.02.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement (Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^0C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.23
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	162.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	24.82
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	25.49
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.05)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	6.34
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	BDL(DL:1.0)
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	88.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.01)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.001)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	12.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	242.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	82.0

Report Prepared by.

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/404
Date : 08.03.2021
Sample No. : MSKGL/ED/2020-21/02/00376
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-2 (Near Proposed Ash Pond)
Date of Sampling : 19.02.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^0C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.18
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	138.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	20.8
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	15.3
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.005)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	4.4
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	BDL(DL:1.0)
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	70.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	8.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	204.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	80.0

Report Prepared by:

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/405
Date : 08.03.2021
Sample No. : MSKGL/ED/2020-21/02/00377
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-3 (Near RR Colony)
Date of Sampling : 19.02.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^0C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.06
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	162.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	23.2
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	18.46
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.005)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	5.86
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.4)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	2.6
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	82.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	9.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	241.4
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	74.0

Report Prepared by

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MSK TESTING • INSPECTION

TEST REPORT

Name & Address of the Customer :
HINDALCO INDUSTRIES LTD.
(Unit- Aditya Aluminium)
At/Po: Lapanga , Beside SH-10
Sambalpur , Odisha-768212

Report No. : BBS/406
Date : 08.03.2021
Sample No. : MSKGL/ED/2020-21/02/00377
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-4 (Bomaloi Village)
Date of Sampling : 19.02.2021

ANALYSIS RESULT

Organoleptic and Physical Parameters as per IS 10500 : 2012

Sl. No.	Test Parameters	Requirement Acceptable Limit	Permissible limit in the absence of alternate Source	Test Method / Specification	Result
1.	pH at 26^0C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.14
2.	Turbidity in mg/l	1	5	IS 3025 (Part 10)-1984 Rffm: 2012	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	154.0
4.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.01)
5.	Boron as B in mg/l	0.5	1.0	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.5)
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40)- 1991 Rffm: 2014	20.6
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	20.39
8.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
9.	Flouride as F in mg/l	1.0	1.5	IS 3025 (Part 60)- 2008 Rffm: 2013	BDL(DL:0.2)
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	BDL(DL:0.05)
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	4.94
12.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
13.	Nitrate as NO3 in mg/l	45	No Relaxation	IS 3025 (Part 34)-1988 Rffm: 2014	BDL(DL:0.04)
14.	Phenolic Compounds as C6H5OH in mg/l	0.001	0.002	IS 3025 (Part 43)- 1992; Rffm: 2014	BDL(DL:0.001)
15.	Selenium as Se in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
16.	Sulphate as SO4 in mg/l	200	400	IS 3025 (Part 24)- 1986 Rffm: 2014	4.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	72.0
18.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
19.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27)- 1986; Rffm:2003	BDL(DL:0.005)
20.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
21.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025(Part 48)-1994	BDL(DL:0.005)
22.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.001)
23.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.005)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	7.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	232.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	BDL(DL:0.5)
27.	Zinc as Zn in mg/l	5	15	IS 3025 (Part 2) 2004 RA 2014	BDL(DL:0.02)
28.	Total Alkalinity as CaCO3 in mg/l	200	600	IS 3025 (Part 23)- 1986 Rffm: 2009	82.0

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Annexure-07

Compliance Status from October 20 to March 21

COMPLIANCE TO CREP GUIDELINES FOR SMELTER

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 only.
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 & FTC below 0.8 kg/ton of aluminium metal produced. The average fluoride emission for the period Oct 20 to March 21 is 0.14 Kg/Ton
3	Fluoride consumption in the smelter should be limited to 10 kg/ton of aluminium produced	The specific fluoride (as F) consumption for the period Oct '20 to Mar'21 is 7.98 kg/ton of Aluminium produced.
4	The fluoride in forage should be limited to Average of 12 consecutive months - 40 ppm Average of 2 consecutive months - 60 ppm One month - 80 ppm Regular monitoring data to be submitted to SPCB and CPCB.	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 Carbon part of SPL is being supplied to M/s Green Energy Limited, Sambalpur for reprocessing/detoxification and in this way the carbon part is completely recycled.
6	The SPL should be disposed in secured landfill.	M/s Ramky Enviro Pvt. Ltd has established the facility for detoxification and disposal as per the protocol given by CPCB in its CHW-TSDF at kanchichuhan, Dist- Jajpur site. M/s Ramky has started lifting the refractory part of SPL for the trial run given by OSPCB. Quantity 8442 MT SPL Refractory is in stock till end of March 2021 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users.
7	Achieving particulate matter limit of 50 mg/Nm3 in anode baking furnace	It is being Complied with.

Annexure-07

Compliance Status from October 20 to March 21

COMPLIANCE TO CREP GUIDELINES FOR CPP

Sr. No.	Conditions	Compliance
1	Implementation of Environmental Standards (emission & effluent) in non- compliant* Power Plants (31 & 27) - Submission of action plan: June 30, 2003 - Placement of order for Pollution of control equipment: September, 2003 - 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/Nm3. The studies shall also suggest the road map to meet 100 mg/Nm3. The studies shall also suggest the road map to meet 100 mg/Nm3 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 after1.4.1.2003 shall meet the limit of 100 mg/Nm3 for particulate matter.	Complied. PM emission is well below stipulated limit of 50 mg/Nm3
4	Development of SO_2 & NO_X emission standards for coal based plants by December 2003. - New/ expansion power projects shall meet the limit of SO_2 & NO_X w.e.f. 1.1.2005. - Existing power plants shall meet the limit of SO2 & NOX w.e.f.1.1.2006.	Standard for SO_2 & NOx has been published by MOEF.
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_2 & NOx.
6	Development of guidelines/ standards for mercury and other toxic heavy metals emissions by December 2003.	Standard for Hg emission for captive power plant has been published by MOEF&CC. Monthly monitoring report is being submitted to SPCB.
7	Review of stack height requirement and guidelines for power plants based on micro meteorological data by June 2003	Guideline has been published for stack height by MOEFCC in this regard.
8	Implementation of use of beneficiated coal as per GOI Notification: Power plants will sign fuel supply agreement (FSA) to meet the requirement as per the matrix prepared by	Not Applicable

	CEA for compliance of the notification as short term measure. Options/mechanism for setting up of coal washeries as a long term measure * Coal India will up its own washery * Sate Electricity Board to set up its own washery * Coal India to ask private entrepreneurs to set up washeries for CIL and taking washing charges * 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 with.
11	Power Plants should provide dry fly ash free of cost to the users	Dry fly ash is being provided to the ash brick manufacturing units 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.	Complied
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 * Units will submit bank guarantee to respective SPCB	Noted

ADITYA BIRLA
HINDALCO

HINDALCO MANAGEMENT FRAMEWORK
excellence by design

ENVIRONMENT POLICY

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

To achieve this, we shall:

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

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

SATISH PAI
MANAGING DIRECTOR

Date : 30 June 2020

Annexure-09

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

Sl. No.	POINTS RAISED	COMPLIANCE STATUS
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 been providing opportunity for ITI studies in KIIT university. Students are trained 2 year ITI course at the cost of company CSR fund.
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 5,76,500 saplings inside the factory premises till March 2021 with an area of 941 acres. Also, the industry has started plantation in the vacant spaces of the surrounding R.R. Colony and have distributed saplings to the villagers in the plant surrounding villages.
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. 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 Gram Panchayat Sarpanch, villagers, opinion makers and well-wishers as per the CSR guideline.
6	The industry should make necessary arrangements for provision of drinking water in the affected area.	The industry has been supplying drinking water through tankers, into the project affected villages in coordination with RWSS, BDO and Sarpanch of every Gram Panchayats in peak summer.
7	The industry should make necessary arrangement to provide round the clock doctors for better medical service in the Lapanga area.	The industry has been very actively contributing the greater causes of Health provided 10 maternity beds and drinking water cooler facility to Rengali PHC, Conducted Pulse Polio facilitation in coordination with CHC Laida for children, Adolescent healthcare and Nutrition programs conducted in the villages. First Aid centre has facility to local areas for free

		treatment by reputed doctors is on. Provided free treatment facility to more than 3000 no's of local people with free treatment, medicine and consultation.
8	The Industry should make alternate arrangement to source water instead of deep bore wells in & around the project area.	The industry is getting water from the Hirakud Reservoir to meets the all the requirements of the Industry.
9	The industry should give financial support to grow small scale industries in the localities.	The industry is supporting farmers to grow the livelihood of the villagers as per their CSR policy. However, many training programs have been conducted for self-employment such as Vegetable farming, Phenol making, Hand wash making, Tailoring, avenue Plantation & various social/health awareness programs, saving programs, to the 102 nos of SHGs and 7 Farmers Group adopted by Industry.
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 constructed one football ground at Bomaloi. We conduct football tournaments at different villages every year as a part of promoting Rural sports. The football grounds are maintained every year by industry.
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. Physically challenged people are continuously supported by the company.

Annexure - 10

Expense incurred under Enterprise Social Commitment till Mar 2021:

Sl. Nos.	Description	Amount Spent (In Crores)	Remarks
1	G D Birla Medical Research and Education Foundation for School at Kurki	20.25	
2	Land taken on Lease from IDCO for School at Kurki	9.10	
3	Sponsorship of Kalinga Lancers in Indian Hockey league Fy15, Fy16 & Fy17	4.50	
4	CSR expenses in & around Aditya Aluminium including Hirakud areas in FY17	7.61	
5	Sponsorship for Asian Athletic Championship 2017	0.50	
6	CSR expenses in & around Aditya Aluminium including Hirakud areas during April 18 to March 19	4.65	
7	CSR expenses in & around Aditya Aluminium including Hirakud areas during April 2019 to March 2020	0.62	
8	CSR expenses in & around Aditya Aluminium including Hirakud areas during April 2020 to Mar 2021	5.31	
Total Expense		52.54	

Aditya Aluminium intends to continue with the following activities under Enterprise Social Commitment like:-

a) Infrastructure development in villages around the Project area.
b) Drinking Water supply facilities.
c) Green cover development in collaboration with State Govt. departments.
d) Football play ground or mini stadium in Bomaloi village, as stated in the minutes of Public consultation held before environmental clearance.
e) Free distribution of school books & bags to children.
f) Constructing Toilets for girls in schools/villages.
g) Scholarship to poor, talented students in the schools.
h) Subsidy for Ash supply (Rs 150/- per Tonne at present) to local Ash brick manufacturers, as per OSPCB/MOEF&CC Notifications.
i) Providing Ash brick manufacturing machines to unemployed youth in the villages and one time assistance to establish the Unit.
j) Contributing to the development of Railway infrastructures in consultation with the railway authorities (e.g., ROB).
k) Implementation of skill development programmes and providing necessary infrastructure to existing ITI, Polytechnic colleges.
l) Development of Schools in the State of Odisha.

The remaining 5% amount for Phase-1 capacity (i.e., Smelter of 0.38 MTPA and CPP of 900 MW) is proposed to be spent over a period of 39 years from the year 2017.


CSR

CSR VISION

"To actively contribute to the social and economic development of the underserved communities, lifting the burden of poverty, and helping bring in inclusive growth in sink with the UN Sustainable Development Goals. In so doing, build a better, sustainable way of life for the weaker sections of society and raise the country's Human Development Index".

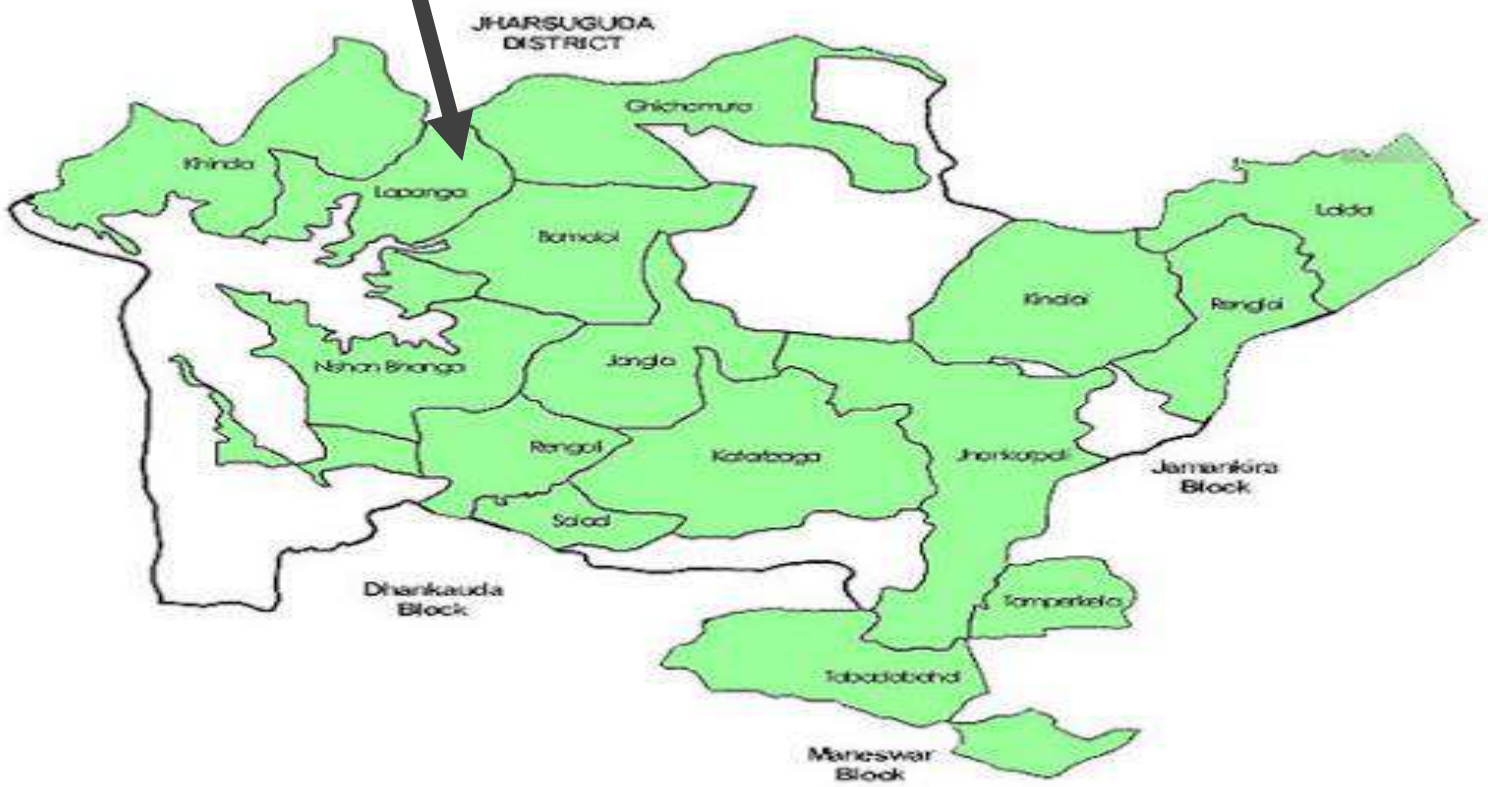
Mrs. Rajashree Birla

SUSTAINABILITY VISION

"The Aditya Birla Group endeavors to become the leading Indian conglomerate for sustainable business practices across its global operations,"

Mr. Kumar Mangalam Birla

OUR PRESENCE



Block : Rengāli
Geographical Location: Sambalpur, Orissa, India, Asia
Geographical Coordinates: 21° 38' 0" North, 84° 3' 0" East

Rengali Block	
No. of GPs	15
No. of Villages	69
Population	25000
No. of Core GPs	6
No. of Core Villages	12
Population of Core Villages	4800
No. of periphery villages	28
Population of Periphery villages	42940

OUR FOCUS AREAS

ADITYA BIRLA
HINDALCO

EDUCATION

ALIGNED WITH SDG 4

HEALTH AND SANITATION

ALIGNED WITH SDG 3 & 6

SUSTAINABLE LIVELIHOOD

ALIGNED WITH SDG 1, 2 & 7

INFRASTRUCTURE DEVELOPMENT

ALIGNED WITH SDG 9

SOCIAL ISSUES

ALIGNED WITH SDG 5 & 10

We comply to CSR Guideline of Companies Act 2013 Schedule VII Section 135

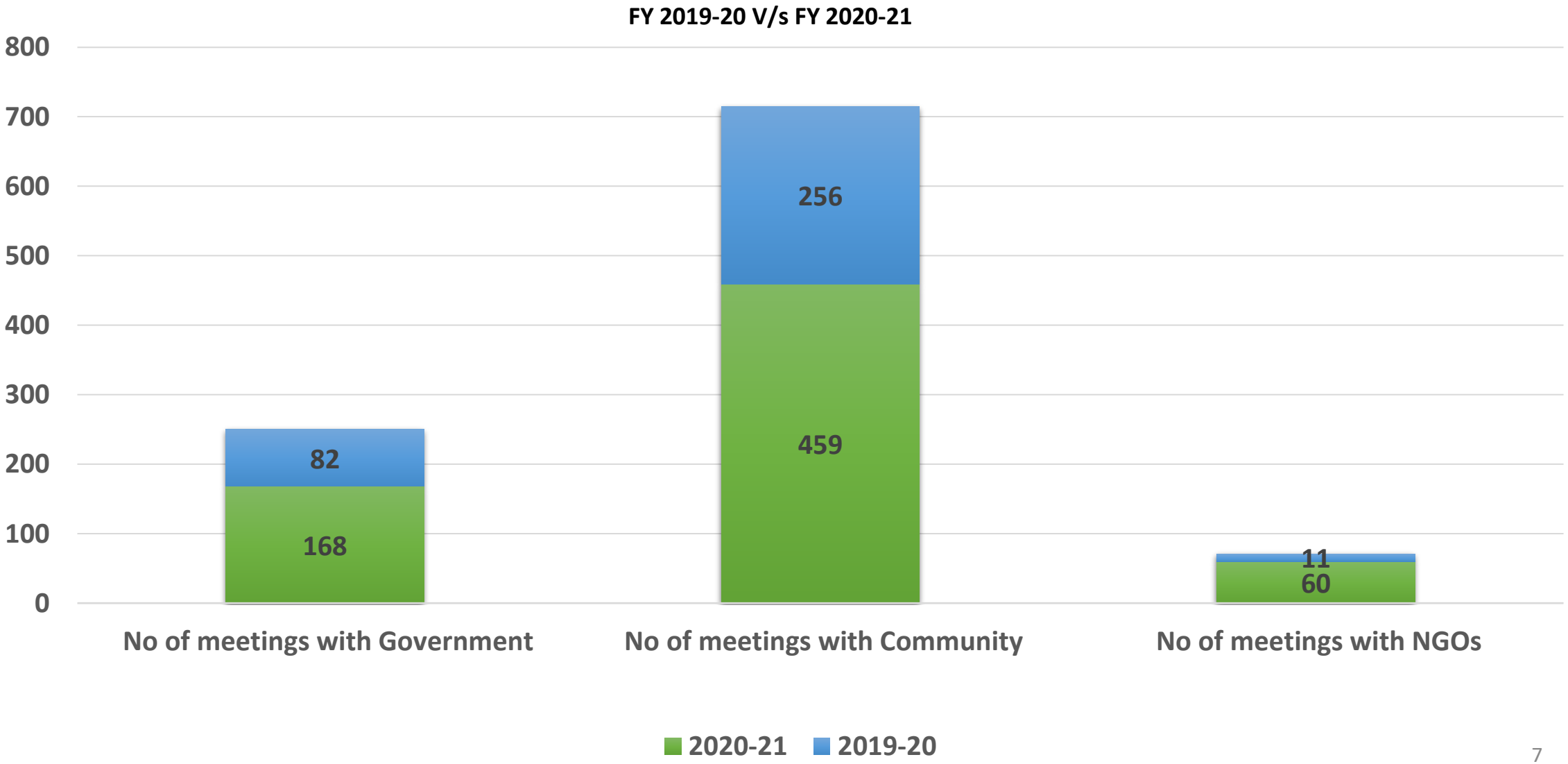
CSR Highlights

1. Women's Day celebrated with 450 women member of SHGs. Prior to IWD Women Sports organised in 9 clusters of 6 GPs on the eve of Women's Day 2021 to connect with more than 1100 women of the community who are members of Self Help Groups. This year CSR has achieved set target of 100 SHGs. 30 new SHGs has been adopted in FY 21. Capacity building training has been organised and 3 exposure visits conducted to build confidence and instill fresh perspective to income generation activities. Turmeric processing,detergent making, badi papad, paper plate making has been added as income generation activity besides exiting mushroom phenyl etc. The income of the SHGs has increased by 10% to 50% depending on individual IGAs. Mega event at Women's Day was epitome of the Aditya's outreach in 20 villages through SHGs.
2. Polio Immunization Camp organised along with health department covering more than 1700 children in 6 sub centres and 6893 in the block and 60 children from Township.
3. More than 6 Animal Vaccination Camp organised in 6 villages benefitting more than 500 cattle from 150 plus beneficiaries
4. AIDS Awareness cum Master Trainer Programme Organised for 104 Direct and Indirect Employees under Employee Led Model. More than 5 trainings organised to contractual labours and security guards by Master trainers
5. More than 5 exposure visits organized for SHG women, farmers and youths to different locations for enhancing acceptability of new practices, skill and starting new initiative. More than 500 men, women and youths benefitted and 300 created value from the visit

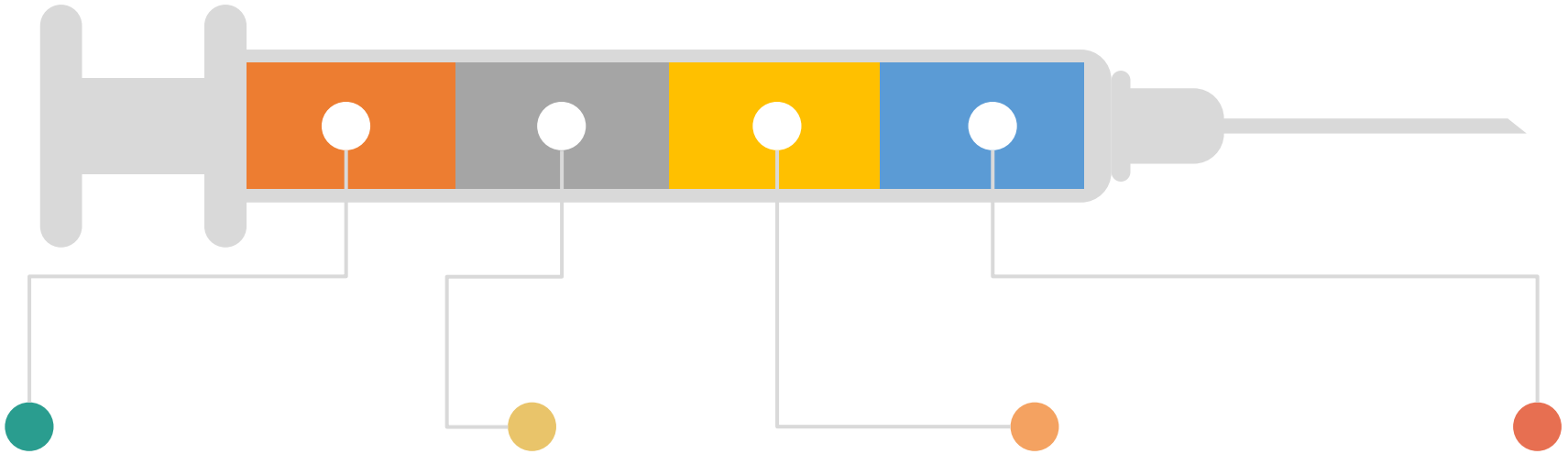
CSR Highlights continued….

6. Footfall at Vision Centre is more than 550 Till March'21. Free Cataract Operation Camps conducted for 200 old age people at Trilochan Netralaya referred from Vision Centre Rengali. AHSA ANM Training conducted for Blindness Free Sambalpur a district administration project. School Eye Screening Camps conducted for 17 schools benefitting 500 students who will appear in 2021 10th Board exam . Spectacles administered to 34 students
7. Under project Suposhan we collected baseline data for Anemia, IMR, MMR and conducted 4 adolescent health camps.
8. Achieved milestones in COVID scenario from more than 25000 mask that helped SHGs earn 1lakh when people were losing income opportunity and additional family income was boon to supply of soap, sanitizer, nutrition kit to community. We have conducted more than 100 awareness camps along with pamphlet, Mike announcement, skit to increase awareness in community. Worked very closely with government for managing Temporary Medical Centres for migrant labourers on daily basis to more than 1000 antigen and RTPCR for contractual workforce and family members. More than 100 trips of sanitization in villages, schools, TMCs, banks, panchayat office, government office, railway station etc. Daily monitoring and MIS generation for review from both districts. Vaccination of 100 plus employees through Trilochan Netralaya
9. RR Colony infrastructure work has been either started or completed from road to temple, community centre pond shopping complex house repair etc. 50 youths in eligible age has been identified for skill training Office Assistant, Tally Driving four wheelers, motor binding etc. 3youths from Ludhapalli has been placed, 3DPs who are eligible for direct employment has been provided job through Apprenticeship.
10. Blood Donation Camp Conducted and 30 units of blood collected in association with Blood Bank Odisha State AIDS Control Society
11. CSR has received 2 awards for women empowerment India CSR award and for Excellence in Covid management Fame Excellence Award. One appreciation from block administration for COVID management contribution.

Stakeholder Engagement



AAYUSH – Healthcare For All



Aditya First AID

- ❑ 1772 patient footfall
- ❑ 36 villages covered
- ❑ 877 tests conducted
- ❑ 6 camps in RR Colony

WASH

- ❑ Drinking water to 15000 people with 60 trips per day
- ❑ Global Hand Washing Day
- ❑ 2 Sanitation Drives
- ❑ World Toilet Day

COMMUNITY OUTREACH

- ❑ World Health Day
- ❑ Polio Immunization
- ❑ Deworming Day

AWARENESS CAMPS

- ❑ 4 MDD Camps
- ❑ 1457 LLIN Distributed
- ❑ AIDS Awareness Camps

SUPOSHAN: Eating Right

2021 2022 2023

PARTNER SHIP

IMPACT 4 NUTRITION

ADITYA BIRLA HINDALCO

6 beneficiaries

6X6X6 strategy

6 interventions

6 institutional mechanisms

Awareness Camps

- Behavioral Change Communication
- Awareness on Healthy lifestyle – diet exercise yoga, breastfeeding
- Healthy cooking Demonstration
- Distribution of IEC material

Health Camp

- Anemia Check up
- Anti-natal post natal check up
- General check up
- Adolescent Health Care Camps

Supplementary Nutrition

- Nutrition kit
- Iron Folic Vitamin Tablets
- Deworming
- Mo Bagicha

✓ Baseline Survey Completed
✓ 4 Adolescent Health Camps
✓ Events- Breast Feeding Week, Nutrition week, World Food Day
✓ NRC Visit
✓ Behavioral Change Communication Camps

Institutional Involvement

AWC
ANM
ASHA
NRC
Wats app communication

VISION CENTRE

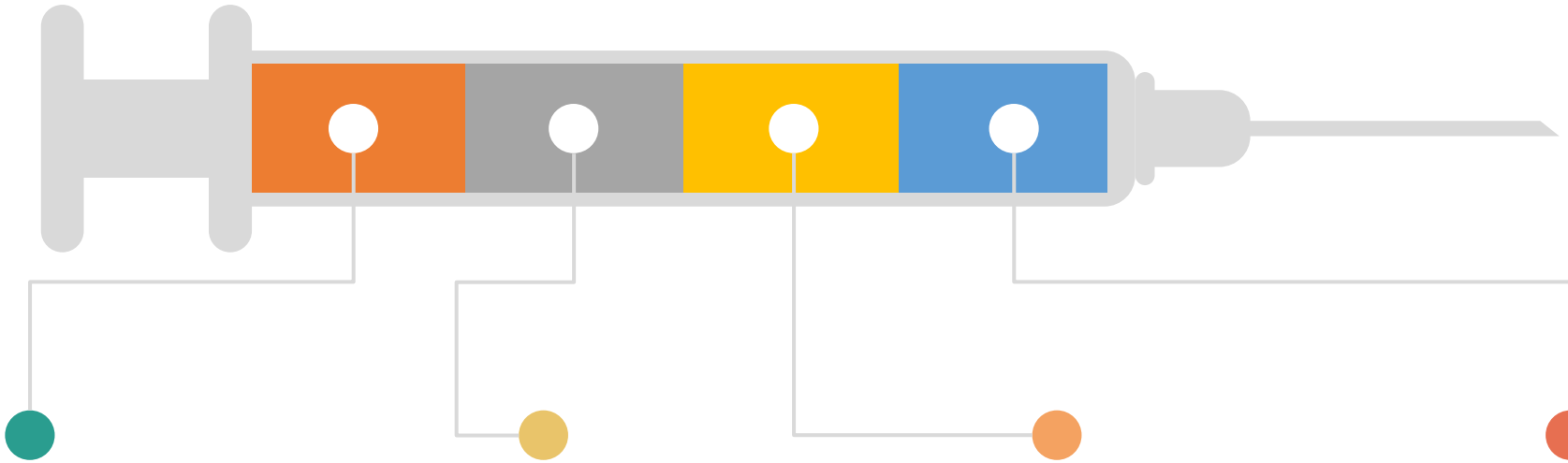
3 YEARS FROM FY 2020 - FY 2023

ADITYA BIRLA HINDALCO

PARTNER SHIP

Vision Foundation

32.00 Lakhs



MOU SIGNED

Inaugurated State of Art IT enabled modern primary eye care centre at Rengali

SERVICES

Consultancy Spectacle and medicine at the same place
229 patients availed service in Dec

OUTREACH

- Free school Eye Health Camps to be started
- Free cataract surgery
- 57 cataract surgery covering 32 villages done in Dec

ACKNOWLEDGEMENT

Coffee Table book on Success Stories every year
Annual Report
Regular Patient feedback

SAKSHAM: Women Power

THERE IS NO FORCE MORE POWERFUL THAN A WOMAN DETERMINED TO RISE

5 YEARS FROM FY 2020 - FY 2025

100.00 Lakhs

120 SHG meetings conducted for 80 groups.

PMJJY, PMJSY, Sukanya, Job Card,

Book Keeping , Banking, Leadership, Public Speaking.

Loan Mela, Mudra Loan, OLM

Odisha Livelihood Mission, Financial Institution, RIC, SBIRSET

Training conducted on Mixture, Badi, Detergent , Turmeric processing

9 new SHGs adopted
Target for the year is 29

SWAWLAMBH: Self-Reliant GEN X

5.00 Lakhs




Goal FY 20-22
100 Youths To Be Trained

PARTNER SHIP

Trilochan Netralaya, Aditya Birla Skill School, Odisha Skill Development Authority, RIC, SBIRSET

Counselling

54 youths counselled:
32 for Ophthalmologist Paramedical
22 for Tally and Office Assistant

Exposure Visit

Visit to Trilochan Netralaya
Visit to Aditya Birla Skill Centre

Training

4 girls underwent Ophthalmologist Paramedical training
15 youths undergoing tally and office assistant training

Placement

3 Girls placed in Trilochan Netralaya

SAMRIDHI : Promising Prosperity

Mini Vegetable Kit

350 farmers benefitted from 4 GPs in convergence with Horticulture dept

Mango Orchard Development

1 Orchard for a BPL farmer In Convergence with Forest Department.

WATERSHED FEASIBILITY STUDY

Conducted by ASA in 20 villages.

FARMER CAPACITY BUILDING

30 Farmers participated.

FARMER'S EXPOSURE VISIT

A Farmer's Group comprising of 20 members visited FPOs in Bargarh.

SADHYA : Disability to Equality

DISABILITY IS THE INABILITY TO SEE ABILITY

831 Disabled People in 16 GPs of Rengali Block

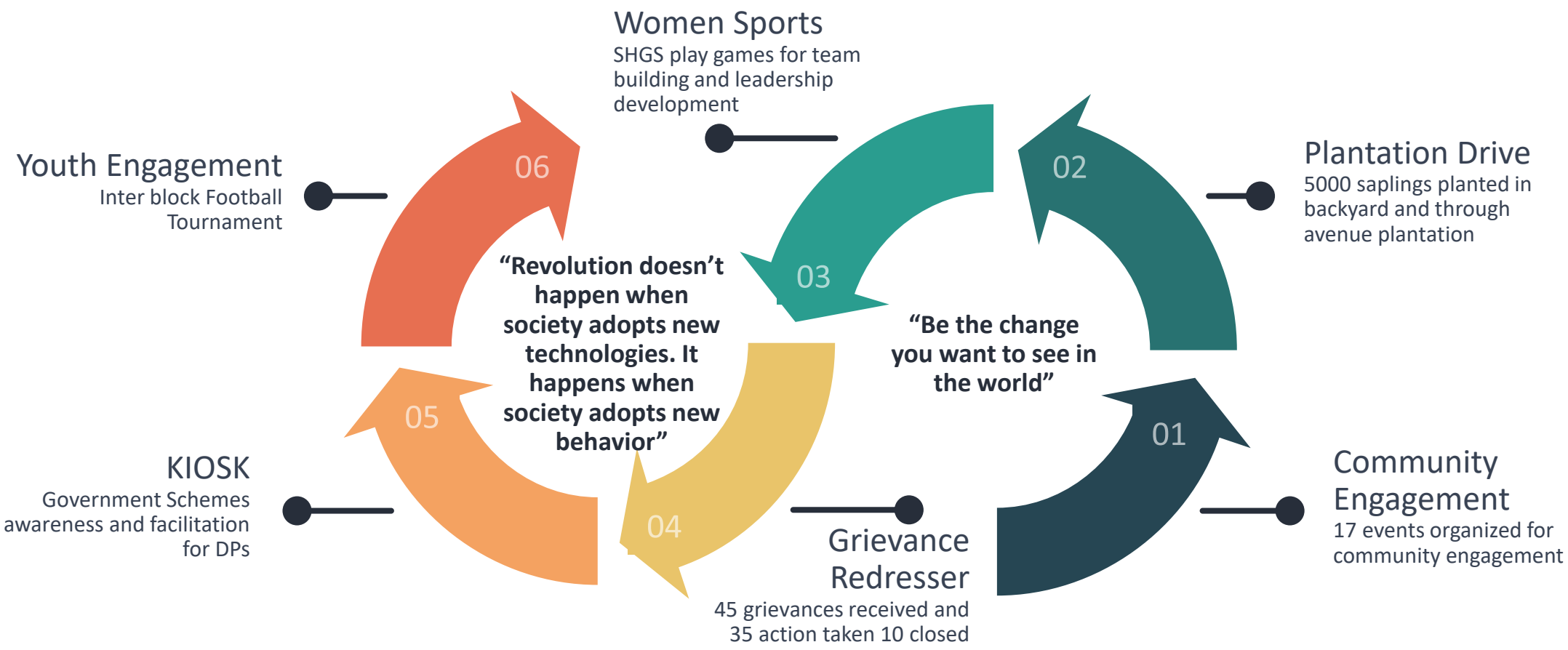
World Disability Day Observed: Self-Reliant Differently abled felicitated

16 Camps organized in GPs by Government to facilitate Disabled people

UNNATI : Building Lifestyle

- 7 Ponds renovated
- 2 ponds constructed in RR Colony
- 56 Solar Lights installed
- 1 Parking Place constructed
- 1 Market Complex
- Stage Constructed at Orampada
- 3 Roads constructed at Lapanga, RR Pondoloi, Gate 3 to Rohidaspada
- 72 house roof repaired in Pondoloi

PARIVARTAN : Transforming Community



Ms. Rajashree Sahu belongs to Dhorropani village & is
Employed at Trilochan Netralaya as Community Outreach Manager after 3 months Opthamalogist Paramedical Training. Self is a Sickling patient. Now she earns Rs.8000pm & is only earning member of the family

Sanjivani Producer Group has become a profit making turmeric processing unit and is about to expand into other spices especially chilli. The group earned more than rupees 9000/- in profit. The President of the group Mrs. Pankajini Dhurua shared her plan to buy a processing machine and expand her IGA as she will receive 2.5 lakhs from OLM fund for Producer Group.

Mushroom sells like hot cake and Leena Luhar has become a role model. She started with straw mushroom in 2019 and plunged into oyster in 2020. She now understands the potential of this IGA and is expanding number of beds with every season. She earned more than INR 20,000 from 3 cycle of crop.

ADITYA BIRLA
HINDALCO

Narendra Modi rightly Said " we need to give importance to skill to end unemployment". Practicing this in reality, 3 women from Maa Laxmi and Maa Ramchandi SHG have partnered to open a tailoring shop at Lapanga. They are earning a livelihood through skill they have honed after Aditya Aluminum provided them tailoring training program. They have orders worth ₹ 20,000/- in first month that will keep them busy for 3 months of festive and marriage season & orders are pouring in constantly. They have applied for 1 lakh Mudra loan to furnish the set up which is evidence of business being good.

CSR KPIs FY 2020-21

PARAMETER	UNIT	TARGET	TILL DATE	Variance	REMARKS / ACTIONS TAKEN
No of community interactions (meetings) held	Nos	1000	550	450	Due to COVID could not interact with stakeholders in CSR initiatives
No of beneficiaries for program organized by CSR	Nos	42940	199893	156953	
CSR Expenses Budget Vs Actual	Rs Lacs	350	380.98	194.19	
No of company employee Volunteers participated	Nos	100	5	95	Less Volunteering opportunity due to COVID
Suggestions received from society	Nos	NA	43	0	
No of meetings held with society representatives	Nos	120	365	245	

National Nutrition Week observation

- With the motive to intensify awareness on the importance of nutrition for health, an annual nutrition event is observed in the country from 1 to 7 September every year. It puts emphasis on educating people in all states across India regarding the importance and necessity of good nutrition in diets.

- This time the theme "**EAT *RIGHT, BITE by BITE*"** focuses on the main source of nutrition which should be chosen wisely and requires you to explore the nutritious food options which are provided by mother nature.

World Breast Feeding Week

- World Breast Feeding Week is an Annual Celebration from 1st to 7th August in all over the world with the goal to promote Exclusive breast feeding for the first 6 months followed by complimentary foods for life which yields many health benefits, providing critical nutrients, protection from deadly diseases such as pneumonia and fostering growth and development.

- The theme of current year is ***"Support breast feeding for a Healthier planet".***

WORLD HUNGER DAY-ADITYA SUPOSHAN ABHIYAN

Nutrition Support for Pregnant & Lactating Women

- Poshan Abhiyaan , which launched in march 2018, is aimed at improving the nutritional outcomes for children, adolescents, pregnant women an d lactating mothers, by leveraging technology through a targeted approach and convergence.
- In order to support this mission, an initiative titled “IMPAct4Nutrition” has been convened and launched by Tata Trusts, UNICEF, Sight and Life, CSRBOX, CII, We Can and NASSCOM Foundation. women.
- The program also focussed on safe practices for pregnant women in face of COVID Pandemic.
- The programme was attended by 21 pregnant women who were provided with a nutrition kit consisting of Horlicks, Jaggery, Rice, Da l and Dates. Total 50 pregnant women will be reached from Bomoloi GP through nutrition kit and monitored till safe delivery of the child.

PROJECT PARIVARTAN-SOCIAL CHANGE

- KIOSKS organized in villages for Govt Schemes
- Schemes introduced PMJBY-25
- PMJJY-25
- Sukanya Yojana-01(SBI)
- PMSBY-10(BOB)
- PMJJY-109(BOB)
- PENSION-24

HIGHLIGHTS

- COVID – Zero Deaths in the villages, 24000+ mask distributed, 100+awareness camps, Temporary Medical Centres supported, facilitated 1000+ test at Government centre
- Launch of Vision Centre Project in Rengali to provide affordable Eye Health Care
- Launch Project Swawlambh for providing skill training to youths in the vicinity villages
- 22 new Self Help Groups formed; 277 women involved in Income Generation Activity
- Skill Training to 20 youths and Placement to 7 youths till date
- 15 events for Stakeholder Engagement including Women's Day with 500 SHG women and District level Government representatives
- More than 50 times print and online media presence at State and Local News

PLAN FY 2021-22

- ❑ Start Integrated Health Program including Mobile Medical Van and upgrade health infrastructure
- ❑ Bring 100 acres of unirrigated land under irrigation through Check Dams and Irrigation Channel
- ❑ Skill Training to 500 Youths and 100% placement / engagement/ self employment opportunity
- ❑ Involve 70% women from 100 Self Help Group in Income Generation Activity

AWARDS AND RECOGNITIONS : FY20- 21

- **ADITYA ALUMINIUM**
  - **Fame Excellence Platinum Award 2020** for Excellence in Best Practices to Fight Against COVID 19
  - **India CSR Award** under the category of Women Empowerment for Project SAKSHAM
  - **Appreciation Letter** from Block Administration for COVID

OFFICE OF THE PANCHAYAT SAMITI, RENGALI

Letter No. 1340 /Dt. 18/09/2020

To

Mr. Kailash Pandey, Unit Head,
Aditya Aluminium , Lapanga,
Sambalpur

I would like to express my sincere admiration for the effort put by your company for the containment of the spread of COVID-19. Starting from creating awareness among the public, distribution of mask, soap, sanitizing public places, distribution of mattress and personal hygienic kits at the TMC your entire management team have worked immensely.

We appreciate your hard work done in last six months to fight against the Pandemic.

Thanking You

18/09/2020
Block Development Officer
Rengali

ADITYA BIRLA
HINDALCO

thank you

Report No : ENVLAB/20/R-8888 Date 06.01.2021

AMBIENT AIR QUALITY MONITORING REPORT OCTOBER 2020 TO DECEMBER 2020

1.Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**

2. Sampling Location : **Monitoring Station No.- AAQMS-1 :Gumkarma**

3. Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler

4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.10.2020	47.2	24.6	15.2	17.3	< 4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.10.2020	50.6	28.8	14.4	16.9	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.10.2020	51.1	29.3	15	19.6	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.10.2020	48.9	25.1	15.2	17.4	4.8	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.10.2020	44.1	25.3	14.9	18.3	5.3	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.10.2020	49.8	28.6	15.7	19.6	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.10.2020	51.5	30.1	16.1	20.9	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.10.2020	49.1	29.8	15.5	19.2	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.11.2020	52.8	28.6	14.9	18.5	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2020	57.6	30.3	16.4	19.1	<4.0	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2020	63.3	34.4	14.9	17.8	<4.0.	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2020	68.4	25.7	15.3	18.1	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2020	67.6	37.6	14.8	20.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2020	70.9	41.5	15.4	19.5	4.6	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2020	64.4	38.8	16.6	17.8	6.1	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2020	59.2	36.7	16.1	19.6	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2020	54.4	30.8	15.2	19	<4	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2020	57.2	33.1	16.1	19.1	<4	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2020	64.1	38.6	15.8	19.8	<4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2020	61.2	36.4	16.3	19.5	<4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2020	58.8	35.1	15.9	18.4	<4.0	0.37	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2020	55.9	32.5	16.3	17.6	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2020	51.2	32.1	16.1	21.1	5.2	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2020	52.7	34.6	15.4	20.4	6.3	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2020	49.6	29.8	15.6	20.8	4.7	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2020	47.2	32.4	14.8	21.9	4.2	0.35	<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**	**--**
Average	**55.7**	**32.0**	**15.5**	**19.2**	**5.2**	**0.35**	**<20.0**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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**

BDL Values:SO_2< 4 µg/m^3, NO_X< 9 µg/m^3,O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3 ,CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Report No : ENVLAB/20/R-8889 Date 06.01.2021

AMBIENT AIR QUALITY MONITORING REPORT OCTOBER 2020 TO DECEMBER 2020

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.10.2020	43.6	24.4	8.9	13.4	<4.0	0.18	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.10.2020	40.8	24.5	10.2	13.6	<4.0	0.19	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.10.2020	41.6	25	10.6	13.8	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.10.2020	43.8	25.1	11.2	14.2	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.10.2020	42.2	25.3	9.4	14.6	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.10.2020	45.6	27.1	10.7	15.4	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.10.2020	43.2	25.9	11.6	14.2	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.10.2020	46.8	26.3	12.8	15.2	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.11.2020	49.4	27.4	11.9	16.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2020	52.6	28.6	11.2	16.8	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2020	58.8	28.7	10.6	15.9	<4.0	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2020	56.2	28.9	9.4	14.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2020	63.6	29.2	11.5	15.4	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2020	61.3	27.2	12.6	15.2	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2020	65.4	26.3	11.8	13.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2020	60.4	26.3	12.9	14.8	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2020	54.2	28.6	12.6	15.3	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2020	50.1	24.4	10.3	14.6	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2020	55.2	26.5	13.8	13.9	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2020	51.6	26.8	12.6	14.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2020	48.8	26.3	11.2	15.6	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2020	45.2	25.9	10.6	14.4	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2020	44.2	26.5	12.8	15.8	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2020	41.1	26.5	13.4	16.6	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2020	43.2	25.9	12.2	14.2	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2020	42.6	26.2	11.1	15.5	<4.0	0.28	<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**	--
Average	**49.7**	**26.5**	**11.5**	**14.9**	**<4**	**0.25**	**<20**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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**

BDL Values:SO_2< 4 µg/m^3, NO_X< 9 µg/m^3,O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3 ,CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Report No : ENVLAB/20/R-8890 Date 06.01.2021

AMBIENT AIR QUALITY MONITORING REPORT OCTOBER 2020 TO DECEMBER 2020

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.10.2020	45.6	26.2	11.8	15.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.10.2020	46.8	26.9	11.6	15.6	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.10.2020	47.2	26.5	13.2	16.2	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.10.2020	45.6	26.8	12.4	17.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.10.2020	45.8	27.5	11.4	15.8	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.10.2020	48.6	27.4	10.2	16.2	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.10.2020	47.2	27.1	12.6	16.2	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.10.2020	46.9	26.9	11.2	17.6	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.11.2020	48.6	26.8	13.6	16.8	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2020	52.2	25.9	14.8	16.2	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2020	54.8	26.3	12.2	17.6	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2020	57.6	26.8	14.6	16.8	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2020	56.2	26.5	16.2	18.2	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2020	59.8	26.9	14.1	17.8	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2020	63.6	27.4	13.4	17.2	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2020	67.2	27.1	13.6	16.4	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2020	58.8	27.2	13.4	17.7	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2020	53.9	26.2	12.2	15.8	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2020	51.6	27.5	12.2	18.2	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2020	52.6	26.8	13.6	17.8	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2020	48.8	26.9	14.4	16.1	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2020	46.6	26.2	12.2	15.2	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2020	43.2	25.9	11.4	16.4	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2020	41.8	26.3	11.8	17.6	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2020	42.2	26.5	13.1	16.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2020	45.6	26.2	10.8	15.8	<4.0	0.18	<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**	**--**
Average	**50.7**	**26.7**	**12.8**	**16.8**	**<4**	**0.29**	**<20**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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**

BDL Values:SO_2< 4 µg/m^3, NO_X< 9 µg/m^3,O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3 ,CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
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- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Report No : ENVLAB/20/R-8891 Date 06.01.2021

AMBIENT AIR QUALITY MONITORING REPORT OCTOBER 2020 TO DECEMBER 2020

1.Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**

2.Sampling Location : **Monitoring Station No.- AAQMS-4 :Bomaloi**

3.Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler

4.Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
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12.10.2020	49.8	31.1	19.8	22.2	4.9	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.10.2020	51.2	31.3	19.2	23.8	5.6	0.42	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.10.2020	48.9	31.7	17.6	24.9	6.4	0.44	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.10.2020	53.6	32.2	19.1	25.6	5.2	0.45	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.10.2020	52.8	32.3	18.4	24.8	5.1	0.46	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.10.2020	54.2	33.1	18.5	25.2	<4.0	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.11.2020	57.1	33.4	17.2	25.6	<4.0	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2020	59.2	33.7	17.8	27.8	5.1	0.41	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2020	63.8	33.5	19.6	26.6	5.2	0.46	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2020	67.6	32.8	18.2	26.8	5.5	0.43	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2020	71.2	32.5	17.6	25.6	<4.0	0.44	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2020	76.8	32.9	18.8	29.8	<4.0	0.45	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2020	69.6	32.2	17.2	27.3	4.8	0.43	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2020	65.8	32.3	16.4	25.9	6.6	0.44	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2020	63.5	31.4	17.3	25.9	5.4	0.41	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2020	64.4	32.9	19.7	24.7	5	0.44	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2020	61.2	32.5	18.6	25.1	5.6	0.42	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2020	66.2	33.1	19.2	24.4	4.2	0.41	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2020	62.6	34.0	20.4	23.2	4.4	0.39	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2020	56.8	34.1	19.5	24.8	<4.0	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2020	50.6	30.4	18.1	25.6	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2020	51.8	30.5	18.4	25.2	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2020	48.4	30.8	18.2	25.6	<4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2020	46.6	31	17.1	23.8	<4.0	0.34	<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**	**--**
Average	**57.9**	**32.2**	**18.4**	**25.3**	**5.2**	**0.40**	**<20**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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**

BDL Values: SO_2< 4 µg/m^3, NO_X< 9 µg/m^3, O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3, CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Report No : ENVLAB/20/R-8892 Date 06.01.2021

AMBIENT AIR QUALITY MONITORING REPORT OCTOBER 2020 TO DECEMBER 2020

1.Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**

2.Sampling Location : **Monitoring Station No.- AAQMS-5 :Kapilas**

3.Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler

4.Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.10.2020	48.8	26.3	14.6	20.2	4.4	<0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.10.2020	49.6	27.8	14.4	20.8	4.3	<0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.10.2020	52.2	29.1	14.8	21.4	4.4	<0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.10.2020	50.6	28.4	15.2	21.6	< 4.0	<0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.10.2020	54.8	29.5	15.6	22.8	< 4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.10.2020	52.2	28.7	15.8	23.6	< 4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.10.2020	50.6	26.8	15.2	23.4	< 4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.10.2020	54.4	28.5	16.1	22.8	< 4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.11.2020	58.8	31.0	16.6	22.6	< 4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2020	57.6	31.6	16.8	22.2	< 4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2020	63.6	32.4	16.6	23.4	< 4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2020	56.8	32.5	16.2	23.8	< 4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2020	59.6	35.2	15.6	24.6	< 4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2020	64.9	38.3	15.4	24.2	< 4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2020	67.2	42.9	15.2	25.5	< 4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2020	61.8	40.5	15.2	25.6	< 4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2020	57.2	36.5	15.8	23.4	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.02.2021	53.1	34.6	15.1	23.8	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2020	56.6	41.4	15.1	25.8	< 4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2020	53.0	35.2	15.4	24.2	< 4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2020	50.2	31.1	15.6	24.6	< 4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2020	52.7	33.1	15.2	24.8	< 4.0	<0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2020	47.6	29.8	15.8	24.4	< 4.0	<0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2020	50.8	27.9	15.2	24.6	< 4.0	<0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2020	45.9	27.3	14.8	24.8	< 4.0	<0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2020	43.4	27.2	15.2	24.2	< 4.0	<0.3	<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**	**--**
Average	**54.4**	**32.1**	**15.5**	**23.6**	**4.4**	**0.29**	**<20**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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**

BDL Values:SO_2< 4 µg/m^3, NO_X< 9 µg/m^3,O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3
CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Report No : ENVLAB/20/R-8893 Date 06.01.2021

AMBIENT AIR QUALITY MONITORING REPORT OCTOBER 2020 TO DECEMBER 2020

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

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.10.2020	46.8	27.5	16.8	21.6	<4.0	0.21	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.10.2020	48.2	27.7	17.4	22.4	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.10.2020	46.6	25.9	17.6	23.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.10.2020	50.4	28.8	18.2	23.8	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.10.2020	48.8	27.2	18.8	23.6	4.3	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.10.2020	45.6	25.2	18.9	24.8	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.10.2020	50.8	27.3	18.4	25.2	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.10.2020	52.2	30.5	17.6	25.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.11.2020	54.6	32.8	17.2	26.2	4.9	0.23	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2020	52.2	33.1	16.8	26.8	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2020	55.8	34.5	16.6	27.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2020	59.6	35.1	15.6	27.8	<4.0	0.25	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2020	57.8	34.1	15.8	26.6	<4.0	0.22	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2020	61.4	38.2	16.2	26.4	<4.0	0.24	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2020	58.2	36.1	16.1	26.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2020	55.2	34.9	15.6	25.8	4.6	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2020	52.1	31.0	17.4	26.0	4.8	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2020	51.0	30.5	15.9	24.5	4.4	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2020	53.5	31.9	15.4	25.6	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2020	51.2	31.5	15.2	25.2	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2020	52.4	30.6	14.8	25.4	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2020	51.8	29.8	14.6	23.8	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2020	48.6	30.3	15.2	24.6	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2020	45.4	31.4	15.6	24.8	<4.0	0.38	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2020	43.8	28.3	16.8	24.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2020	42.6	26.6	16.6	25.4	<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**	**--**
Average	**51.4**	**30.8**	**16.6**	**25.1**	**4.6**	**0.27**	**<20**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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**

BDL Values: SO_2< 4 µg/m^3, NO_X< 9 µg/m^3, O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3, CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy
- Agricultural Development
- Information Technology
- Public Health Engineering
- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Report No : ENVLAB/20/R-8894 Date 06.01.2021

AMBIENT AIR QUALITY MONITORING REPORT OCTOBER 2020 TO DECEMBER 2020

1.Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**

2.Sampling Location : **Monitoring Station No.- AAQMS-7 :Khadiapali**

3.Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler

4.Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.10.2020	44.6	26.8	15.6	21.6	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.10.2020	45.8	26.3	15.8	21.8	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.10.2020	43.6	26.2	15.4	22.4	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.10.2020	47.2	26.5	15.9	22.6	<4.0	0.27	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.10.2020	48.4	26.6	16.2	23.8	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.10.2020	51.2	27.1	16.6	23.6	<4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.10.2020	50.6	27.4	16.8	24.2	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.10.2020	52.6	28.0	16.6	24.8	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.11.2020	56.8	28.1	16.2	25.2	<4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2020	57.2	28.3	17.4	25.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2020	57.8	28.7	17.6	24.6	<4.0	0.3	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2020	60.4	29.0	17.8	24.6	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2020	63.8	29.3	18.2	24.2	<4.0	0.34	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2020	66.2	29.5	18.6	23.8	<4.0	0.35	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2020	65.6	29.8	18.9	23.4	<4.0	0.36	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2020	61.6	29.2	19.6	23.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2020	58.5	28.6	18.2	24.6	<4.0	0.33	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2020	53.8	27.1	17.0	23.2	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2020	52.2	28.9	19.4	24.2	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2020	56.2	28.3	19.2	24.8	<4.0	0.29	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2020	52.8	28.1	18.8	24.4	<4.0	0.31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2020	53.4	27.8	18.4	22.6	<4.0	0.32	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2020	50.8	27.5	18.6	23.2	<4.0	0.26	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2020	48.4	27.2	18.2	23.8	<4.0	0.28	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2020	45.2	27.1	18.1	24.2	<4.0	0..31	<20.0	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2020	46.8	27.7	18.2	24.6	<4.0	0.29	<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**	**--**
Average	**53.5**	**27.9**	**17.6**	**23.8**	**<4**	**0.30**	**<20**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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**

BDL Values: SO_2< 4 µg/m^3, NO_X< 9 µg/m^3, O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3, CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Report No : ENVLAB/20/R-8895 Date 06.01.2021

AMBIENT AIR QUALITY MONITORING REPORT OCTOBER 2020 TO DECEMBER 2020

1.Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**

2.Sampling Location : **Monitoring Station No.- AAQMS-8 : Thelkoloi**

3.Monitoring Instruments : RDS(APM 460 BL), FPS(APM 550) Envirotech, CO Monitor, VOC Sampler

4.Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_x ($\mu g/m^3$)	O_3 ($\mu g/m^3$)	CO (mg/m^3)	NH_3 ($\mu g/m^3$)	C_6H_6 ($\mu g/m^3$)	BaP (ng/m^3)	Ni (ng/m^3)	Pb ($\mu g/m^3$)	As (ng/m^3)	F ($\mu g/m^3$)
05.10.2020	52.2	32.3	19.1	25.2	7.4	0.46	23.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
08.10.2020	47.9	29.2	19.6	25.6	7.6	0.48	23.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.10.2020	50.6	28.8	19.8	26.8	7.8	0.46	24.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
15.10.2020	48.2	26.5	19.2	27.4	7.9	0.42	24.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.10.2020	50.8	27.5	18.9	27.8	8.4	0.44	25.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
22.10.2020	56	30.3	18.8	28.8	8.2	0.38	25.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.10.2020	57.2	31.7	18.6	28.9	8.8	0.39	25.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
29.10.2020	63.4	34.1	18.8	28.4	8.9	0.46	26.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
02.11.2020	58.2	33.1	18.9	28.2	8.2	0.38	26.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
05.11.2020	67.4	38.2	19.4	27.6	8.1	0.43	27.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
09.11.2020	62.4	35.5	19.6	27.4	8.5	0.42	27.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
12.11.2020	68.1	38.7	19.8	27.2	8.4	0.44	28.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
16.11.2020	74.6	43.6	20.6	25.8	8.2	0.39	28.9	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
19.11.2020	82.1	46.2	20.2	25.6	8.3	0.38	27.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
23.11.2020	78.4	45.4	20.8	25.2	8.1	0.42	27.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
26.11.2020	73.8	42.3	21.4	26.8	8.0	0.49	27.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
30.11.2020	62.6	39.1	20.8	25.6	8.2	0.46	26.8	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
03.12.2020	58.8	36.2	20.6	24.8	8.4	0.48	27.1	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
07.12.2020	63.2	41.5	21.6	24.6	8.2	0.46	28.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
10.12.2020	59.6	38.4	22.8	24.2	8.2	0.44	28.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
14.12.2020	54.8	35.1	23.4	25.1	8.4	0.45	28.2	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
17.12.2020	51.5	33.7	23.6	25.2	8.2	0.46	27.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
21.12.2020	49.6	29.4	23.8	25.8	8.0	0.48	27.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
24.12.2020	44.2	26.1	22.4	24.6	8.2	0.42	28.4	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
28.12.2020	48.8	29.3	22.6	24.8	8.4	0.39	28.6	<0.001	<0.002	<0.01	<0.001	<0.001	<0.01
31.12.2020	45.2	26.7	22.1	24	8.8	0.42	28.2	<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**	**--**
Average	**58.8**	**34.6**	**20.6**	**26.2**	**8.2**	**0.43**	**27.0**	**<0.001**	**<0.002**	**<0.01**	**<0.001**	**<0.001**	**<0.01**
Testing method	**Gravimetric**	**Gravimetric**	**Improved West and Geake 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**

BDL Values: SO_2< 4 µg/m^3, NO_X< 9 µg/m^3, O_3<4 µg/m^3, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 µg/m^3, BaP<0.002 ng/m^3, Pb<0.001 µg/m^3, F<0.01µg/m^3, CO-<0.1 mg/m^3

Prepared by: **Verified by:**

Report No : Envlab/20/R-9759 **Date : 03.04.2021**

FORAGE FLOURIDE ANALYSIS REPORT MARCH 2021

1	Name of Industry	:	**M/s Hindalco Industries Ltd, (Unit-Aditya Aluminium); Lapanga**
2	Date of Sampling	:	18.03.2021
3	Date of Analysis	:	19.03.2021 TO 23.03.2021
4	Name of the Sample	:	Vegetation Sample
5	Sampling Location	:	Bomaloi, Guripalli, Plant Gate, Thelkolai, Gumukarma, Ghichamura , Tileimal & Lapanga
6	Sample Collected By	:	VCSPL Representative

Date of Sampling	Name of the Location	Type of Species	Scientific Name	Method of Analysis	Result (PPM)
15.03.2021	Bomaloi	Brinjal Leaf, Curry Tree leaf	*Solanum melongena, Murraya Koenigii*	AOAC 975.04	1.32
15.03.2021	Gurupali	Neem Tree, Duba Grass	*Azadirachta Indica, Cynodon dactylon*	AOAC 975.04	1.26
15.03.2021	Plant Site	Karanja Tree, Duba Grass	*Dalbergia Sissoo Roxb Cynodon dactylon*	AOAC 975.04	1.84
15.03.2021	Thelkolai	Duba Grass, Jammu Tree	*Cynodon dactylon Syzygium cumini*	AOAC 975.04	1.34
15.03.2021	Gumukarma	Bamboo Tree, Duba Grass	*Bambusoideade Cynodondactylon*	AOAC 975.04	1.48
16.03.2021	Ghichamura	Badhial Tree, Duba Grass	*Mimusops elengi, Cynodondactylon*	AOAC 975.04	0.90
16.03.2021	Tileimal	Bela tree, Duba Tree	*Aegle marmelos Cynodon dactylon*	AOAC 975.04	1.10
16.03.2021	Lapanga	Neem tree	*Azadirachta Indica*	AOAC 975.04	1.56
16.03.2021	Jangala	Bamboo Tree, Tomato Leaf	*Bambusoideade, Solanumlycopersicum*	AOAC 975.04	1.28
16.03.2021	Bhadrapali	Duba Grass,Tomato Leaf	*Cynodon dactylon, Solanumlycopersicum*	AOAC 975.04	1.52

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Reviewed By

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Approved By

Ref : Envlab/20/R- 7427 **Date : 30.01.2021**

FORAGE FLOURIDE ANALYSIS REPORT DECEMBER 2020

1	Name of Industry	:	**M/s Hindalco Industries Ltd, (Unit-Aditya Aluminium); Lapanga**
2	Date of Sampling	:	15.12.2020 & 16.12.2020
3	Date of Analysis	:	17.12.2020 to 23.12.2020
4	Name of the Sample	:	Vegetation Sample
5	Sampling Location	:	Bomaloi, Guripalli, Plant Gate, Thelkolai, Gumukarma, Ghichamura , Tileimal&Lapanga
6	Sample Collected By	:	VCSPL Representative in presence of Clients representative

Date of Sampling	Name of the Location	Type of Species	Scientific Name	Method of Analysis	Result (PPM)
15.12.2020	Bomaloi	Rice Plant, Curry Tree leaf	*Oryza Sativa,MurrayaKoenigii*	AOAC 975.04	1.62
15.12.2020	Gurupali	Bela Tree	*Aegle marmelos*	AOAC 975.04	1.20
15.12.2020	Plant Site	Sisoo Tree, Karanja Tree	*DalbergiaSissooRoxb Pongame oil tree*	AOAC 975.04	1.68
15.12.2020	Thelkolai	Duba Grass, Jammu Tree	*Cynodondactylon Syzygiumcumini*	AOAC 975.04	1.12
16.12.2020	Gumukarma	Bamboo Tree, Duba Grass	*Bambusoideade Cynodondactylon*	AOAC 975.04	1.32
16.12.2020	Ghichamura	Baulakoli Tree, badhial Tree	*Mimusopselengi*	AOAC 975.04	0.68
16.12.2020	Tileimal	Bela tree, Duba Tree	*Aegle marmelos Cynodondactylon*	AOAC 975.04	0.81
16.12.2020	Lapanga	Neem tree, Rice Plant	*AzadirachtaIndica Oryza Sativa*	AOAC 975.04	1.38
16.12.2020	Jangala	Rice Plant, Brinjal Leaf	*Oryza Sativa, Solanum Melongena*	AOAC 975.04	1.16
16.12.2020	Bhadrapali	DubaGrass,Tomato Leaf	*Cynodondactylon, Solanumlycopersicum*	AOAC 975.04	1.40

Note: ND: Not Detected.

Reviewed By

Approved By

Ref : Envlab/20/R- 9010 **Date : 06.01.2021**

GROUND WATER QUALITY ANALYSIS REPORT DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.**
2. Sampling location : **GW-1:** Lapanga Village; **GW-2**: Pandoloi Village; **GW-3:**Bamloi Village; **GW-4:** Tilaimal Village
3. Date of sampling : 15.12.2020
4. Date of analysis : 16.12.2020 TO 23.12.2020
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Result			
				Permissible Limit	Acceptable Limit	GW-1	GW-2	GW-3	GW-4
1	pH Value at 25^{0}C	APHA 4500H$^+$ B	--	**6.5-8.5**	**No Relaxation**	6.99	7.26	7.52	7.11
2	Colour	APHA 2120 B, C	Hazen	**5**	**15**	CL	CL	CL	CL
3	Taste	APHA 2160 C	--	**Agreeable**	**Agreeable**	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	APHA 2150 B	--	**Agreeable**	**Agreeable**	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	APHA 2130 B	NTU	**1**	**5**	<1.0	<1.0	<1.0	<1.0
7	Total Dissolved Solids	APHA 2540 C	mg/l	**500**	**2000**	212	182	194	192
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	**200**	**600**	80	76	82	74
9	Total Alkalinity	APHA 2320 B	mg/l	**200**	**600**	88	82	90	82
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	**75**	**200**	22.42	22.42	24.02	21.62
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	**30**	**100**	5.85	4.88	5.36	4.88
12	Residual, free Chlorine	APHA 4500Cl, B	mg/l	**0.2**	**1**	ND	ND	ND	ND
13	Boron (as B)	APHA 4500B, B	mg/l	**2.4**	**No Relaxation**	<0.01	<0.01	<0.01	<0.01
14	Chloride (as Cl)	APHA 4500Cl$^-$ B	mg/l	**250**	**1000**	22.4	22.6	26.8	23.3
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**200**	**400**	6.6	5.8	5.4	6.8
16	Fluoride (as F)	APHA 4500F$^-$ C	mg/l	**1.0**	**1.5**	0.26	0.22	0.21	0.36
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	**45**	**No Relaxation**	2.6	3.1	2.2	3.4
18	Sodium as Na	APHA3500-Na	mg/l	--	--	14.2	12.8	13.2	11.4
19	Potassium as K	APHA 3500-K	mg/l	--	--	2.8	3.4	3.8	4.4
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	**0.001**	**0.002**	<0.001	<0.001	<0.001	<0.001
21	Cyanide (as CN)	APHA 4500 CN$^-$ C,D	mg/l	**0.05**	**No Relaxation**	ND	ND	ND	ND
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	**0.2**	**1.0**	<0.2	<0.2	<0.2	<0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	**0.003**	**No Relaxation**	<0.001	<0.001	<0.001	<0.001
24	Arsenic (as As)	APHA 3114 B	mg/l	**0.01**	**No Relaxation**	<0.001	<0.001	<0.001	<0.001
25	Copper (as Cu)	APHA 3111 B,C	mg/l	**0.05**	**1.5**	<0.001	<0.001	<0.001	<0.001
26	Lead (as Pb)	APHA 3111 B,C	mg/l	**0.01**	**No Relaxation**	<0.001	<0.001	<0.001	<0.001
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	**0.1**	**0.3**	<0.001	<0.001	<0.001	<0.001
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	**1**	**No Relaxation**	0.18	0.22	0.16	0.18
29	Chromium (as Cr)	APHA 3500Cr B	mg/l	**0.05**	**No Relaxation**	<0.05	<0.05	<0.05	<0.05
30	Selenium (as Se)	APHA 3114 B	mg/l	**0.01**	**No Relaxation**	<0.001	<0.001	<0.001	<0.001
31	Zinc (as Zn)	APHA 3111 B,C	mg/l	**5**	**15**	<0.05	<0.05	<0.05	<0.05
32	Aluminium as(Al)	APHA 3500Al B	mg/l	**0.03**	**0.2**	<0.001	<0.001	<0.001	<0.001
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	**0.001**	**No Relaxation**	<0.001	<0.001	<0.001	<0.001
34	Mineral Oil	APHA 5220 B	mg/l	**0.5**	**No Relaxation**	<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	**Shall not be detectable in any 100 ml sample**	--	Absent	Absent	Absent	Absent
37	Total Coliforms	APHA9221-B	MPN/ 100 ml	**Shall not be detectable in any 100 ml sample**	--	<1.1	<1.1	<1.1	<1.1

Note: CL: Colorless, AL: Agreeable, ND: Not Detected.

Prepared By

Verrified By

Ref : Envlab/20/R- 9011 **Date : 06.01.2021**

GROUND WATER QUALITY ANALYSIS REPORT DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga.**
2. Sampling location : **GW-5:** Thelkoloi Village; **GW-6:** Ghichamura Village; **GW-7:** Gumkarama Village; **GW-8:** Chaltikra Village.
3. Date of sampling : 15.12.2020
4. Date of analysis : 16.12.2020 TO 23.12.2020
5. Sample collected by : VCSPL Representative

Sl. No.	Parameter	Testing Methods	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Result			
				Permissible Limit	Acceptable Limit	GW-5	GW-6	GW-7	GW-8
1	pH Value at 25^0C	APHA 4500H^+ B	--	6.5-8.5	No Relaxation	7.24	7.12	7.28	7.08
2	Colour	APHA 2120 B, C	Hazen	5	15	CL	CL	CL	CL
3	Taste	APHA 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Conductivity	APHA2510-B	µs/cm	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	APHA 2130 B	NTU	1	5	<1.0	<1.0	<1.0	<1.0
7	Total Dissolved Solids	APHA 2540 C	mg/l	500	2000	198	188	210	184
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	600	72	78	74	76
9	Total Alkalinity	APHA 2320 B	mg/l	200	600	78	82	76	84
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	20.82	22.42	20.02	21.62
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	4.88	5.36	5.85	5.36
12	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	1	ND	ND	ND	ND
13	Boron (as B)	APHA 4500B, B	mg/l	2.4	No Relaxation	<0.01	<0.01	<0.01	<0.01
14	Chloride (as Cl)	APHA 4500Cl^- B	mg/l	250	1000	21.2	26.9	22.6	25.4
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	6.9	5.9	5.6	5.2
16	Fluoride (as F)	APHA 4500F^- C	mg/l	1.0	1.5	0.24	0.28	0.32	0.27
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	45	No Relaxation	2.8	2.9	2.6	2.2
18	Sodium as Na	APHA3500-Na	mg/l	--	--	10.8	11.6	11.8	12.8
19	Potassium as K	APHA 3500-K	mg/l	--	--	4.2	5.6	4.8	4.9
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	0.002	<0.001	<0.001	<0.001	<0.001
21	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	No Relaxation	ND	ND	ND	ND
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	1.0	<0.2	<0.2	<0.2	<0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	No Relaxation	<0.001	<0.001	<0.001	<0.001
24	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
25	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.001	<0.001	<0.001	<0.001
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.001	<0.001	<0.001	<0.001
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	1	No Relaxation	0.18	0.19	0.2	0.21
29	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	No Relaxation	<0.05	<0.05	<0.05	<0.05
30	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
31	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	15	<0.05	<0.05	<0.05	<0.05
32	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	0.2	<0.001	<0.001	<0.001	<0.001
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.001	<0.001	<0.001	<0.001
34	Mineral Oil	APHA 5220 B	mg/l	0.5	No Relaxation	<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	Shall not be detectable in any 100 ml sample	--	Absent	Absent	Absent	Absent
37	Total Coliforms	APHA9221-B	MPN/ 100 ml	Shall not be detectable in any 100 ml sample	--	<1.1	<1.1	<1.1	<1.1

Note: CL: Colorless, AL: Agreeable, ND: Not Detected.

VISIONTEK CONSULTANCY SERVICES PVT. LTD. *Prepared By*

VISIONTEK CONSULTANCY SERVICES PVT. LTD. *Verified By*

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Enginering
- Water Resource Management
- Environmental & Social Study
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- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref : Envlab/20/R- 9012 **Date : 06.01.2021**

GROUND WATER QUALITY ANALYSIS REPORT DEC-2020

1. **Name of Industry** — **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling Location — **GW-1:Near Ash Pond**
3. Date of Sampling — 15.12.2020
4. Date of Analysis — 16.12.2020 TO 23.12.2020
5. Sample Collected By — VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Permissible Limit	Permissible Limit	GW-1
1.	pH Value	APHA 4500 H^+ B	--	6.5-8.5	No Relaxation	7.24
2.	Turbidity	APHA 2130B	NTU	1	5	0.66
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	200	600	84
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	1.0	No Relaxation	0.24
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	250	1000	28
6.	Dissolved Solids	APHA 2540 C	mg/l	500	2000	202
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	75	200	24.82
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	30	100	5.36
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	0.05	1.5	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	13.8
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	3.6
12.	Manganese (as Mn)	APHA 3111 B	mg/l	0.1	0.3	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	6.1
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	45	No Relaxation	0.56
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	1.0	1.5	0.28
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	0.001	0.002	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	0.001	No Relaxation	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	0.003	No Relaxation	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	0.05	No Relaxation	ND
22.	Lead (as Pb)	APHA 3111 B	mg/l	0.01	No Relaxation	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	5	15	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	0.05	No Relaxation	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	200	600	108
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	0.03	0.2	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	2.4	No Relaxation	<0.001

Note : ND: Not Detected ,BDL (Below Detection Limit)

Prepared By: **Verified By:**

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
E-mail: visiontek@vcspl.org, visiontekin@gmail.com
Visit us at: www.vcspl.org

Ref : Envlab/20/R- 9013 **Date : 06.01.2021**

GROUND WATER QUALITY ANALYSIS REPORT DEC-2020

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling Location : **GW-2:Near Proposed Ash Pond**
3. Date of Sampling : 15.12.2020
4. Date of Analysis : 16.12.2020 TO 23.12.2020
5. Sample Collected By : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Permissible Limit	Permissible Limit	GW-2
1.	pH Value	APHA 4500 H^+ B	--	**6.5-8.5**	**No Relaxation**	7.11
2.	Turbidity	APHA 2130B	NTU	**1**	**5**	0.78
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	**200**	**600**	58
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	**1.0**	**No Relaxation**	0.18
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	**250**	**1000**	18
6.	Dissolved Solids	APHA 2540 C	mg/l	**500**	**2000**	124
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	**75**	**200**	15.8
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	**30**	**100**	3.2
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	**0.05**	**1.5**	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	7.8
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	3.1
12.	Manganese (as Mn)	APHA 3111 B	mg/l	**0.1**	**0.3**	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**200**	**400**	2.4
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	**45**	**No Relaxation**	0.42
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	**1.0**	**1.5**	0.21
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	**0.001**	**0.002**	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	**0.001**	**No Relaxation**	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	**0.003**	**No Relaxation**	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	**0.01**	**No Relaxation**	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	**0.01**	**No Relaxation**	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	**0.05**	**No Relaxation**	ND
22.	Lead (as Pb)	APHA 3111 B	mg/l	**0.01**	**No Relaxation**	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	**5**	**15**	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	**0.05**	**No Relaxation**	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	**200**	**600**	60
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	**0.03**	**0.2**	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	**2.4**	**No Relaxation**	<0.001

Note : ND: Not Detected ,BDL (Below Detection Limit)

Prepared By: **Verified By:**

Ref : Envlab/20/R- 9014 **Date : 15.03.2021**

GROUND WATER QUALITY ANALYSIS REPORT-DEC 2020

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling Location : **GW-3:New RR Colony**
3. Date of Sampling : 15.12.2020
4. Date of Analysis : 16.12.2020 TO 23.12.2020
5. Sample Collected By : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Permissible Limit	Permissible Limit	GW-3
1.	pH Value	APHA 4500 H^+ B	--	**6.5-8.5**	**No Relaxation**	7.08
2.	Turbidity	APHA 2130B	NTU	**1**	**5**	0.9
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	**200**	**600**	76
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	**1.0**	**No Relaxation**	0.21
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	**250**	**1000**	24
6.	Dissolved Solids	APHA 2540 C	mg/l	**500**	**2000**	166
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	**75**	**200**	22.42
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	**30**	**100**	4.88
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	**0.05**	**1.5**	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	8.4
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	3.1
12.	Manganese (as Mn)	APHA 3111 B	mg/l	**0.1**	**0.3**	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**200**	**400**	4.1
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	**45**	**No Relaxation**	0.42
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	**1.0**	**1.5**	0.22
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	**0.001**	**0.002**	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	**0.001**	**No Relaxation**	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	**0.003**	**No Relaxation**	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	**0.01**	**No Relaxation**	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	**0.01**	**No Relaxation**	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	**0.05**	**No Relaxation**	ND
22.	Lead (as Pb)	APHA 3111 B	mg/l	**0.01**	**No Relaxation**	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	**5**	**15**	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	**0.05**	**No Relaxation**	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	**200**	**600**	44
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	**0.03**	**0.2**	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	**2.4**	**No Relaxation**	<0.001

ND: Not Detected , BDL (Below Detection Limit)

Prepared By: **Verified By:**

Ref : Envlab/20/R- 9015 **Date : 06.01.2021**

GROUND WATER QUALITY ANALYSIS REPORT-DEC 2020

1. **Name of Industry** : **M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling Location : **GW-4:Near Bamloi Village**
3. Date of Sampling : 15.12.2020
4. Date of Analysis : 16.12.2020 TO 23.12.2020
5. Sample Collected By : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard as per IS -10500:2012 Amended on 2015 & 2018		Analysis Results
				Permissible Limit	Permissible Limit	GW-4
1.	pH Value	APHA 4500 H^+ B	--	**6.5-8.5**	**No Relaxation**	7.12
2.	Turbidity	APHA 2130B	NTU	**1**	**5**	0.82
3.	Total Hardness(as $CaCO_3$)	APHA 2340 C	mg/l	**200**	**600**	70
4.	Iron (as Fe)	APHA 3500 Fe B	mg/l	**1.0**	**No Relaxation**	0.2
5.	Chloride (as Cl)	APHA 4500 Cl^- B	mg/l	**250**	**1000**	26
6.	Dissolved Solids	APHA 2540 C	mg/l	**500**	**2000**	173
7.	Calcium (as Ca)	APHA 3500 Ca B	mg/l	**75**	**200**	20.82
8.	Magnesium (as Mg)	APHA 3500 Mg B	mg/l	**30**	**100**	4.4
9.	Copper (as Cu)	APHA 3111Cu B	mg/l	**0.05**	**1.5**	<0.001
10.	Sodium (as Na)	APHA 3500Na B	mg/l	--	--	9.2
11.	Potassium (as K)	APHA 3500 K B	mg/l	--	--	2.4
12.	Manganese (as Mn)	APHA 3111 B	mg/l	**0.1**	**0.3**	<0.005
13.	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**200**	**400**	4.2
14	Nitrate (as NO_3)	APHA 4500 NO_3^- B	mg/l	**45**	**No Relaxation**	0.38
15.	Fluoride (as F)	APHA 4500 F^- D	mg/l	**1.0**	**1.5**	0.26
16.	Phenolic Compounds (as C_6H_5OH)	APHA 5530 C	mg/l	**0.001**	**0.002**	<0.001
17.	Mercury (as Hg)	APHA 3112B	mg/l	**0.001**	**No Relaxation**	<0.001
18.	Cadmium (as Cd)	APHA 3111 B	mg/l	**0.003**	**No Relaxation**	<0.001
19.	Selenium (as Se)	APHA 3114 B	mg/l	**0.01**	**No Relaxation**	<0.001
20	Arsenic (as As)	APHA 3114 B	mg/l	**0.01**	**No Relaxation**	<0.001
21.	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	**0.05**	**No Relaxation**	ND
22.	Lead (as Pb)	APHA 3111 B	mg/l	**0.01**	**No Relaxation**	<0.001
23.	Zinc (as Zn)	APHA 3111 B	mg/l	**5**	**15**	<0.005
24.	Chromium (as Cr)	APHA 3500 Cr B	mg/l	**0.05**	**No Relaxation**	<0.005
25.	Alkalinity	APHA 2320 B	mg/l	**200**	**600**	76
26.	Aluminium as(Al)	APHA 3500 Al B	mg/l	**0.03**	**0.2**	<0.001
27.	Boron (as B)	APHA 4500 B	mg/l	**2.4**	**No Relaxation**	<0.001

ND: Not Detected , BDL (Below Detection Limit)

Prepared By: **Verified By:**

Ref : Envlab/20/R- 9007 **Date : 15.03.2021**

METEOROLOGICAL DATA FOR DECEMBER-2020

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

Date	Temperature (^{0}C)		Relative Humidity (%)		Wind Speed m/sec		Wind	Rain fall
	Max	Min	Max	Min	Max	Min	Direction	(mm)
1-Dec-20	23.1	16.7	47.7	34	1	0.8	NNE	0
2-Dec-20	23.8	18.5	47.7	32	0.6	1.1	NNW	0
3-Dec-20	23.2	18.3	43.5	30	0.4	0.8	NNE	0
4-Dec-20	21.9	15.8	41.3	29	0.7	0.3	NE	0
5-Dec-20	23.7	18.5	41.9	29	0.5	0.8	N	0
6-Dec-20	23.5	15.6	42.1	29	0.7	0.8	SSE	0
7-Dec-20	25.3	19.6	41.3	24	0.8	1.1	SSE	0
8-Dec-20	24.6	20.3	43	30	1	1.1	SSE	0
9-Dec-20	23.8	17.6	42.6	24	1.2	0.3	SSW	0
10-Dec-20	22.4	17.4	42	21	1	0.6	SSW	0
11-Dec-20	23	16.2	42.1	28	1	0.8	NW	0
12-Dec-20	23	16.2	41.1	29	0.6	1.1	WSW	0
13-Dec-20	22.7	19.6	47.3	40	0.5	1.1	W	0
14-Dec-20	24	20.3	52.9	37	1.2	1.1	NW	0
15-Dec-20	24	19.8	54.8	44	1.3	0.8	SW	0
16-Dec-20	24.9	20.5	52.1	38	1.2	0.6	NNW	0
17-Dec-20	24.2	20.6	56.7	43	1.6	0.8	NNW	0
18-Dec-20	22.1	16.3	47.5	35	2.1	0.3	SSW	0
19-Dec-20	20.8	15.2	35.4	24	1.8	1.7	WNW	0
20-Dec-20	19.8	13.6	29.5	19	1.6	0.3	WNW	0
21-Dec-20	19.6	13.2	31.8	19	1.2	1.7	NNW	0
22-Dec-20	19.6	13.2	35.4	21	1.4	0.3	NNW	0
23-Dec-20	19.8	13.2	38.4	25	1	0.6	SW	0
24-Dec-20	20.8	14.2	37.9	24	0.9	0.8	SSE	0
25-Dec-20	**21.4**	**15.2**	**38.3**	22	**1.5**	0.6	SSE	0
26-Dec-20	**20.7**	**13.8**	**38**	25	**1.4**	0.9	SE	0
27-Dec-20	**20.7**	**13.5**	**36.5**	21	**1.2**	1	SSE	0
28-Dec-20	20.9	15.2	37	25	0.8	0.9	SE	0
29-Dec-20	21.8	14.3	44.5	30	1	0.6	SSE	0
30-Dec-20	21.4	15.2	46.2	32	1.5	0.9	SSW	0
31-Dec-20	22.6	15.2	48.8	32	1.8	1.1	SSW	0

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Reviewed By

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Approved By

Report No : Envlab/20/R-9758 **Date : 03.04.2021**

METEOROLOGICAL DATA FOR MARCH 2021

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Location : **Near Raw Water Reservoir**
3. Sample Collected By : VCSPL Representative

Date	Temperature(^{0}C)		Relative Humidity (%)		Wind Speed m/sec		Wind	Rain fall
	Max	Min	Max	Min	Max	Min	Direction	(mm)
1-Mar-21	37.8	21.5	39	18	2.52	1.80	NNE	0
2-Mar-21	38.9	20.5	41	28	2.80	1.72	NNW	0
3-Mar-21	38.4	20.6	57	33	2.58	1.66	NNE	0
4-Mar-21	37.4	19.6	61	36	4.27	2.12	NE	0
5-Mar-21	37.4	21.6	60	28	2.58	1.54	N	0
6-Mar-21	36.9	20.8	62	25	1.58	0.89	WSW	0
7-Mar-21	38.6	20.3	65	25	2.60	1.12	WSW	0
8-Mar-21	38.7	22.1	75	36	2.83	1.18	SSE	0
9-Mar-21	38.5	22.1	71	43	2.60	1.24	SSW	0
10-Mar-21	38.9	23.3	85	25	2.58	1.28	SSW	0
11-Mar-21	38.9	23.1	72	45	2.80	1.41	NW	0
12-Mar-21	23.3	19.6	73	37	2.46	1.26	WSW	0
13-Mar-21	24.2	20.2	72	24	2.52	1.22	W	0
14-Mar-21	38.5	21.3	78	42	2.63	1.78	NW	0
15-Mar-21	38.7	23.1	65	42	2.02	1.12	SW	0
16-Mar-21	39.8	23.3	71	48	2.60	1.82	NNW	0
17-Mar-21	38.2	23.2	75	42	1.97	1.52	NNW	0
18-Mar-21	39.4	23.8	74	43	2.24	2.11	SW	0
19-Mar-21	38.9	24.6	61	43	2.58	2.26	WSW	0
20-Mar-21	39.6	24.9	71	49	2.02	1.94	WNW	0
21-Mar-21	40.2	25.4	71	55	2.27	2.11	WSW	0
22-Mar-21	40.2	25.6	75	50	1.99	1.88	WSW	0
23-Mar-21	36.6	20.3	75	52	2.27	2.21	SW	0
24-Mar-21	39.6	25.4	76	46	3.74	3.66	SSE	0
25-Mar-21	39.6	27.8	65	41	2.63	1.84	NNE	0
26-Mar-21	41.1	26.4	72	48	2.02	1.91	NNE	0
27-Mar-21	42.2	23.9	74	52	2.55	1.92	NNE	0
28-Mar-21	45.8	24.6	72	48	2.52	2.1	NNE	0
29-Mar-21	41.6	25.4	79	52	2.27	1.84	NNE	0
30-Mar-21	41.4	25.4	54	28	3.10	2.64	NNE	0
31-Mar-21	40.8	26.8	58	38	2.88	2.61	NNE	0

Reviewed By

Approved By

Ref : Envlab/20/R- 9018 **Date : 15.03.2021**

NOISE MONITORING REPORT FEB-2021

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

Daytime Noise monitoring results (Noise Level in dB (A) Feb 21

TIME (6.00AM to 9.00PM)	N1:Gumkarma (16.02.2021)	N2:Ghichamura (16.02.2021)	N3:Bomaloi (16.02.2021)	N4:Tileimal (17.02.2021)	N5:Thelkoli (17.02.2021)	N6:Khadiapali (17.02.2021)	N7:Kapilas (18.02.2021)	N8:Phulchanghal (18.02.2021)
06.00am	41.6	40.6	41.6	40.6	45.8	43.8	40.8	42.6
07.00am	42.6	41.9	41.2	40.8	48.8	44.6	40.6	41.2
08.00am	44.6	42.6	43.8	42.8	49.2	44.8	41.6	42.5
09.00am	44.8	42.8	44.6	43.6	49.6	45.6	41.2	45.8
10.00am	44.9	43.6	48.2	43.8	50.2	46.8	42.8	44.2
11.00am	45.2	43.8	50.6	44.6	50.8	47.2	43.6	41.6
12.00 noon	45.6	44.8	51.2	44.8	50.9	47.8	43.8	42.2
01.00pm	46.8	45.2	51.6	43.6	51.2	48.6	44.4	45.8
02.00pm	48.2	45.6	50.8	43.8	52.8	49.4	45.2	43.6
03.00pm	48.9	46.8	50.2	45.2	52.6	50.6	45.6	43.8
04.00pm	50.6	47.2	50.6	45.6	52.8	50.8	44.8	48.2
05.00pm	50.8	47.8	50.4	46.6	53.6	51.4	43.6	45.1
06.00pm	51.6	48.8	50.8	46.8	52.2	52.8	42.8	43.2
07.00pm	51.4	48.8	50.6	44.2	52.6	53.6	42.6	42.2
08.00pm	52.2	44.6	50.2	43.2	50.6	53.8	40.6	40.6
09.00pm	45.2	43.2	50.8	40.6	50.2	51.6	40.8	40.2
Average	**47.2**	**44.9**	**48.6**	**43.8**	**50.9**	**49**	**42.8**	**43.3**
Standard as per CPCB	**55**							

Night time Noise monitoring results (Noise Level in dB (A)) Feb 21

TIME (10.00PM to 5.00AM)	N1:Gumkarma (16.02.2021)	N2:Ghichamura (16.02.2021)	N3:Bomaloi (16.02.2021)	N4:Tileimal (17.02.2021)	N5:Thelkoli (17.02.2021)	N6:Khadiapali (17.02.2021)	N7:Kapilas (18.02.2021)	N8:Phulchanghal (18.02.2021)
10.00pm	43.8	41.6	45.6	40.2	42.8	44.8	41.6	42
11.00pm	43.2	41.2	45.4	40.1	43.4	43.6	38.8	40.2
12.00 Midnight	42.6	40.6	45.6	39.8	43.6	43.2	38.2	42.8
01.00am	41.2	41.2	45.2	38.8	44.6	43.2	37.8	41.3
02.00am	40.6	41.8	45.8	38.2	44.2	43.2	36.8	38.8
03.00am	40.8	39.6	44.6	37.4	43.8	41.2	35.2	39.6
04.00am	41.6	40.2	42.8	36.8	42.8	40.2	39.8	42.8
05.00am	41.6	40.1	40.9	40.1	41.2	41.8	43.9	44.2
Average	**41.9**	**40.8**	**44.5**	**38.9**	**43.3**	**42.7**	**39**	**41.5**
Standard as per CPCB	**45**							

Prepared By

Verified By

Ref : Envlab/20/R- 9016 **Date :06.01.2021**

SOIL QUALITY ANALYSIS REPORT DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.12.2020
3. Sampling Location : **S-1:** Project Site; **S-2:** Thelkoloi; **S-3:** Ghichamura; **S-4:** Lapanga; **S-5:** Bamloi
4. Date of Analysis : 16.12.2020 TO 23.12.2020
5. Sample Collected By : VCSPL representative

Sl.No.	Parameters	Unit	S-1	S-2	S-3	S-4	S-5
1	P^H at 25^0C	--	6.98	7.2	7.12	7.04	7.1
2	Conductivity	--	127.8	118.8	112.2	136.8	122.8
3	Soil Texture	--	Sandy Loamy	Clay Loamy	Clay Loamy	Sandy Loamy	Sandy Loamy
4	Sand	%	41.2	24.8	30.6	40.8	40.6
5	Silt	%	14.2	24.1	20.6	20.8	17.2
6	Clay	%	45.1	53.1	44.8	48.8	43.6
7	Bulk Density	gm/cc	1.58	1.42	1.48	1.52	1.54
8	Exchangeable Calcium as Ca	%	38.1	34.2	40.8	34.8	43.2
9	Exchangeable Magnesium as Mg	%	51.8	51.2	53.8	51.8	52.8
10	Available Sodium as Na	%	0.016	0.021	0.021	0.028	0.026
11	Available Potassium as K	%	0.054	0.048	0.053	0.044	0.048
12	Available phosphorous as P	%	0.024	0.026	0.025	0.022	0.028
13	Available Nitrogen as N	%	0.26	0.31	0.24	0.28	0.31
14	Organic Matter	%	3.4	3.6	4.2	3.8	4.2
15	Organic Carbon as OC	%	1.8	1.46	1.62	1.68	1.54
16	Water soluble Chlorides as Cl	%	0.28	0.31	0.22	0.25	0.32
17	Water soluble Sulphates as SO_4	%	0.18	0.16	0.24	0.28	0.24
18	Sodium Absorption Ratio	%	0.18	0.18	0.16	0.15	0.14
19	Aluminium as Al	%	0.00008	0.00013	0.00015	0.00016	0.00014
20	Total Iron as Fe	%	0.092	0.045	0.051	0.081	0.072
21	Manganese as Mn	%	0.018	0.0021	0.0022	0.0034	0.0026
22	Boron as B	%	0.00018	0.00021	0.00026	0.00003	0.00028
23	Zinc as Zn	%	0.00036	0.00038	0.00032	0.00026	0.00025
24	Silica as SiO_2	%	6.6	6.4	7.2	6.6	6.8
25	Ferric Oxide as Fe_2O_3	%	0.051	0.042	0.044	0.038	0.032
26	Calcium Oxide as CaO	%	30.8	31.2	28.8	27.2	28.1
27	Magnesium Oxide as MgO	%	25.6	24.8	23.9	22.8	22.6
28	Aluminium Oxide as Al_2O_3	%	0.00008	0.00012	0.00028	0.00033	0.00039
29	Iron Oxide as FeO	%	0.052	0.018	0.056	0.032	0.034
30	Manganese Oxide as MnO	%	0.0058	0.0022	0.0016	0.0024	0.0044
31	Potassium Oxide as K_2O	%	0.0528	0.0426	0.0411	0.0512	0.0516
32	Phosphorus Oxide as P_2O_5	%	0.0089	0.0086	0.0084	0.0078	0.0092
33	Fluoride as F	%	0.0002	0.00026	0.00034	0.00038	0.0004

ND: Not Detected.

Prepared by: **Verified by:**

Ref : Envlab/20/R- 9017 **Date : 06.01.2021**

SOIL QUALITY ANALYSIS REPORT DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.12.2020
3. Sampling Location : **S-6:** Tileimal; **S-7:** Jangala; **S-8:** Gurupali; **S-9**: Gumkarama; **S-10:** Bhadarpali.
4. Date of Analysis : 16.12.2020 TO 23.12.2020
5. Sample Collected By : VCSPL representative

Sl.No.	Parameters	Unit	S-6	S-7	S-8	S-9	S-10
1	P^H at 25^0C	--	7.14	7.12	7.08	7.21	6.98
2	Conductivity	--	132.6	126.8	118.8	116.8	116.2
3	Soil Texture	--	Clay Loamy	Sandy Loamy	Sandy Loamy	Sandy Loamy	Clay Loamy
4	Sand	%	24.6	31.2	33.8	41.6	26.8
5	Silt	%	13.2	13.7	20.8	20.2	21.2
6	Clay	%	63.4	58.2	50.6	41.2	52.8
7	Bulk Density	gm/cc	1.56	1.48	1.38	1.42	1.52
8	Exchangeable Calcium as Ca	%	46.8	38.8	46.1	45.8	44.6
9	Exchangeable Magnesium as Mg	%	52.8	56.4	58.3	61.4	60.6
10	Available Sodium as Na	%	0.024	0.021	0.028	0.026	0.024
11	Available Potassium as K	%	0.051	0.044	0.042	0.042	0.056
12	Available phosphorous as P	%	0.021	0.018	0.021	0.028	0.026
13	Available Nitrogen as N	%	0.36	0.32	0.28	0.18	0.22
14	Organic Matter	%	4.4	4.2	4.1	3.8	3.9
15	Organic Carbon as OC	%	1.56	1.89	1.86	1.81	1.89
16	Water soluble Chlorides as Cl	%	0.28	0.26	0.18	0.21	0.24
17	Water soluble Sulphates as SO_4	%	0.18	0.21	0.14	0.18	0.16
18	Sodium Absorption Ratio	%	0.18	0.17	0.18	0.16	0.17
19	Aluminium as Al	%	0.00012	0.00018	0.00021	0.00018	0.00014
20	Total Iron as Fe	%	0.062	0.068	0.048	0.041	0.042
21	Manganese as Mn	%	0.0026	0.0028	0.0029	0.0026	0.0031
22	Boron as B	%	0.00026	0.00033	0.00038	0.00036	0.00028
23	Zinc as Zn	%	0.00026	0.00028	0.00018	0.00014	0.00026
24	Silica as SiO_2	%	7.4	6.8	6.6	7.1	6.8
25	Ferric Oxide as Fe_2O_3	%	0.026	0.029	0.033	0.038	0.036
26	Calcium Oxide as CaO	%	28.1	31.6	31.2	36.2	33.8
27	Magnesium Oxide as MgO	%	22.4	30.8	30.6	30.4	30.5
28	Aluminium Oxide as Al_2O_3	%	0.00041	0.00038	0.00028	0.00023	0.00038
29	Iron Oxide as FeO	%	0.0192	0.0188	0.0192	0.0212	0.0216
30	Manganese Oxide as MnO	%	0.0026	0.0018	0.0016	0.0019	0.0022
31	Potassium Oxide as K_2O	%	0.0422	0.0428	0.0522	0.0448	0.0515
32	Phosphorus Oxide as P_2O_5	%	0.0092	0.0096	0.0108	0.0091	0.0092
33	Fluoride as F	%	0.00046	0.00038	0.00028	0.00026	0.00024

Prepared by: **Verified by:**

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

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- Mineral/Sub-Soil Exploration
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Ref : Envlab/20/R- 9008 **Date : 06.01.2021**

SURFACE WATER QUALITY ANALYSIS REPORT DECEMBER-2020

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling location : **SW-1:**Hirakud Reservoir;**SW-2:**Lapanga Pond**; SW-3:**Matwadinadi –U/S**, SW-4:**Bamloi Pond; **SW-5:** Bhedan river
3. Date of sampling : 15.12.2020
4. Date of analysis : 16.12.2020 TO 23.12.2020
5. Sample collected by : VCSPL 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 at 25^0C	APHA 4500H^+ B	--	**6.0-9.0**	7.26	7.31	7.41	7.42	7.38
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	Turbidity	APHA 2130 B	NTU	--	3.8	3.9	4.2	4.6	4.4
6	Total Dissolved Solids	APHA 2540 C	mg/l	**1500**	116	178	107.2	164.8	125.2
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	60	80	52	74	58
8	Total Alkalinity	APHA 2320 B	mg/l	--	58	70	54	76	60
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	16.82	22.42	15.21	20.82	17.62
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	4.39	5.85	3.41	5.36	3.41
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	--	ND	ND	ND	ND	ND
12	Boron (as B)	APHA 4500B, B	mg/l	--	<0.01	<0.01	<0.01	<0.01	<0.01
13	Chloride (as Cl)	APHA 4500Cl^- B	mg/l	**600**	20	28	22	26	22
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**400**	15.2	44.8	14.6	48.9	17.4
15	Fluoride (as F)	APHA 4500F^- C	mg/l	**1.5**	0.28	0.51	0.26	0.62	0.34
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	**50**	1.34	3.38	1.32	3.79	1.31
17	Sodium as Na	APHA3500-Na	mg/l	--	8.8	11.2	9.4	12.1	9.2
18	Potassium as K	APHA 3500-K	mg/l	--	1.8	2.9	2.6	3.8	1.4
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	**0.005**	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	**0.05**	ND	ND	ND	ND	ND
21	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	**1.0**	<0.2	<0.2	<0.2	<0.2	<0.2
22	Cadmium (as Cd)	APHA 3111 B,C	mg/l	**0.01**	<0.001	<0.001	<0.001	<0.001	<0.001
23	Arsenic (as As)	APHA 3114 B	mg/l	**0.2**	<0.001	<0.001	<0.001	<0.001	<0.001
24	Copper (as Cu)	APHA 3111 B,C	mg/l	**1.5**	<0.05	<0.05	<0.05	<0.05	<0.05
25	Lead (as Pb)	APHA 3111 B,C	mg/l	**0.1**	<0.001	<0.001	<0.001	<0.001	<0.001
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.005	<0.005	<0.005	<0.005	<0.005
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	**0.5**	0.06	0.1	0.04	0.11	0.05
28	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05
29	Selenium (as Se)	APHA 3114 B	mg/l	**0.05**	<0.001	<0.001	<0.001	<0.001	<0.001
30	Zinc (as Zn)	APHA 3111 B,C	mg/l	**15**	<0.05	<0.05	<0.05	<0.05	<0.05
31	Aluminium as(Al)	APHA 3500Al B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
33	Mineral Oil	APHA 5220 B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
34	Pesticides	APHA 6630 B,C	mg/l	--	Absent	Absent	Absent	Absent	Absent
35	E.Coli	APHA 9221-F	MPN/ 100 ml	--	Absent	Absent	Absent	Absent	Absent
36	Total Coliforms	APHA9221-B	MPN/ 100 ml	**5000**	260	320	310	440	330

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

Prepared by: **Verified by:**

Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

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- Mineral/Sub-Soil Exploration
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Ref : Envlab/20/R- 9009 **Date : 06.01.2021**

SURFACE WATER QUALITY ANALYSIS REPORT DECEMBER-2020

1. Name of Industry — **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. 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.
3. Date of sampling — 15.12.2020
4. Date of analysis — 16.12.2020 TO 23.12.2020
5. Sample collected by — VCSPL 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 at 25^0C	APHA 4500H^+ B	--	**6.0-9.0**	7.41	7.26	7.28	7.42	7.36
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	Turbidity	APHA 2130 B	NTU	--	2.6	3.1	2.8	3.2	3.8
6	Total Dissolved Solids	APHA 2540 C	mg/l	**1500**	110.6	124	119.4	110.4	151
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	52	66	62	52	58
8	Total Alkalinity	APHA 2320 B	mg/l	--	64	52	56	58	64
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	15.21	19.22	16.82	14.41	17.62
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	3.41	4.39	4.88	3.9	3.41
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	--	ND	ND	ND	ND	ND
12	Boron (as B)	APHA 4500B, B	mg/l	--	<0.01	<0.01	<0.01	<0.01	<0.01
13	Chloride (as Cl)	APHA 4500Cl^- B	mg/l	**600**	18	34	24	20	24
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	**400**	17.6	17.8	14.2	12.2	17.9
15	Fluoride (as F)	APHA 4500F^- C	mg/l	**1.5**	0.28	0.38	0.36	0.31	0.31
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	**50**	2.6	2.2	2.4	2.8	2.9
17	Sodium as Na	APHA 3500-K	mg/l	--	9.6	9.2	9.1	9.2	9.4
18	Potassium as K	APHA3500-Na	mg/l	--	2.8	2.6	2.4	2.6	2.9
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	**0.005**	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cyanide (as CN)	APHA 4500 CN^- C,D	mg/l	**0.05**	ND	ND	ND	ND	ND
21	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	**1.0**	<0.2	<0.2	<0.2	<0.2	<0.2
22	Cadmium (as Cd)	APHA 3111 B,C	mg/l	**0.01**	<0.001	<0.001	<0.001	<0.001	<0.001
23	Arsenic (as As)	APHA 3114 B	mg/l	**0.2**	<0.001	<0.001	<0.001	<0.001	<0.001
24	Copper (as Cu)	APHA 3111 B,C	mg/l	**1.5**	<0.05	<0.05	<0.05	<0.05	<0.05
25	Lead (as Pb)	APHA 3111 B,C	mg/l	**0.1**	<0.001	<0.001	<0.001	<0.001	<0.001
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.005	<0.005	<0.005	<0.005	<0.005
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	**0.5**	0.04	0.05	0.06	0.04	0.05
28	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05
29	Selenium (as Se)	APHA 3114 B	mg/l	**0.05**	<0.001	<0.001	<0.001	<0.001	<0.001
30	Zinc (as Zn)	APHA 3111 B,C	mg/l	**15**	<0.05	<0.05	<0.05	<0.05	<0.05
31	Aluminium as(Al)	APHA 3500Al B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
33	Mineral Oil	APHA 5220 B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
34	Pesticides	APHA 6630 B,C	mg/l	--	Absent	Absent	Absent	Absent	Absent
35	E.Coli	APHA 9221-F	MPN/ 100 ml	--	Absent	Absent	Absent	Absent	Absent
36	Total Coliforms	APHA9221-B	MPN/ 100 ml	**5000**	330	410	460	440	520

Note: CL: Colorless, AL:Agreeable, U/O: Unobjectionable, ND: Not detected.

Prepared by: **Verified by:**