ADITYA BIRLA

HINDALCO

Letter No: AAP/E&S/EC/2022/863 Date: 21/11/2022

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

Sub: Submission of Six Monthly Compliance from April' 22 to September' 22.

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 and 12/08/2022.

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 April' 22 to September' 22.

Kindly acknowledge receipt of the reports.

Thanking You

Yours faithfully
For Aditya Aluminium

Sameer Nayak

(Sameer Nayak)
President & Unit Head

Copy for kind information to:

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

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

Aditya Aluminium: Six Monthly EC Compliance from April 2022– September 2022

Name of the Project	:	M/s. Aditya Aluminium (A Division of Hindalco Industries Ltd.) at village: Lapanga, Tehsil: Rengali, District: Sambalpur (Odisha).
Environment Clearance Letter No and date	:	J-11011/136/2009-IA.II(1), Dated 29th November 2012, EC amendment dated 14th June 2013,14th Aug 2018 , 20th July 2020 & 12th August 2022. For 7,20,000 TPA ALUMINIUM SMELTER & 1650 MW CAPTIVE POWER PLANT.
Period of Compliance Report	:	April 2022 to September 2022

Sr. No.	Specific Conditions	Compliance Status
i)	The streams passing through the project site shall not be disturbed w.r.t their quantity and quality of flow.	The streams passing through the project site is not being disturbed.
ii)	Alumina shall be obtained from those refineries, which have been accorded environmental clearance by the Ministry of Environment and Forests.	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.
iii)	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.	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 April 2022 to September 2022 in Anode baking Furnace stacks of stated below Stack attached to / PM Emission (mg/Nm3): (Min) / (Max) / (Avg) FTC # 1: 6.8 / 11.2 / 8.96 FTC # 2: 5.9 / 13.6 / 8.89 The monitoring report of Fume treatment Plant stacks is attached as Annexure-1.

<table>
<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 April 2022 to September 2022 is stated below:
<table>
<tr><th rowspan="2">Stack attached to</th><th colspan="3">Particulate Fluoride Emission (mg/Nm3)</th></tr>
<tr><th>(Min)</th><th>(Max)</th><th>(Avg)</th></tr>
<tr><td>GTC # 1</td><td>0.10</td><td>0.11</td><td>0.11</td></tr>
<tr><td>GTC # 2</td><td>0.10</td><td>0.11</td><td>0.10</td></tr>
</table>
The average fugitive particulate fluoride emission from pot rooms during April 2022 to September 2022 is 0.06 kg/ton of metal produced.

The monitoring reports of Gas Treatment Centre stacks is attached as Annexure-2.</td>
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<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>
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<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 concentration of hydrogen fluoride (HF) varies between 0.223 mg/m3 to 0.306 mg/m3 and average is 0.258 mg/m3 during April 2022 to September 2022. 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>
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<table>
<tr><td></td><td></td><td>concentration of the forage fluoride (analysed in August 2022) are listed below:

<table><tr><th>Location</th><th>Species</th><th>Fluoride (in ppm)</th></tr><tr><td>Bomaloi</td><td>Aegle marmelos, Oryza Sativa,</td><td>1.8</td></tr><tr><td>Gurupali</td><td>Cynodon dactylon, Azadirachta Indica</td><td>1.4</td></tr><tr><td>Plant Site</td><td>Dalbergia Sissoo, Cynodon dactylon</td><td>2.8</td></tr><tr><td>Thelkolai</td><td>Pongame oil tree, Cynodon dactylon</td><td>1.7</td></tr><tr><td>Gumukarma</td><td>Bambuso ideade, Oryza Sativa</td><td>2.1</td></tr><tr><td>Ghichamura</td><td>Mimusops elengi, Oryza Sativa</td><td>1.2</td></tr><tr><td>Tileimal</td><td>Oryza Sativa, Cynodon dactylon</td><td>1.3</td></tr><tr><td>Lapanga</td><td>Azadirachta Indica Oryza Sativa</td><td>2.1</td></tr><tr><td>Jangala</td><td>Cynodon dactylon, Oryza Sativa,</td><td>1.1</td></tr><tr><td>Bhadrapali</td><td>Pongame oil tree Cynodon dactylon, Oryza Sativa,</td><td>1.2</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 April 2022 to September 2022 is stated below:</td></tr>
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<table>
<tr><td></td><td></td><td>
<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>41.3</td><td>43.4</td><td>42.7</td></tr>
<tr><td>CPP 2</td><td>41.6</td><td>43.6</td><td>42.9</td></tr>
<tr><td>CPP 3</td><td>40.4</td><td>43.0</td><td>41.8</td></tr>
<tr><td>CPP 4</td><td>42.7</td><td>46.2</td><td>44.1</td></tr>
<tr><td>CPP 5</td><td>40.5</td><td>43.4</td><td>42.2</td></tr>
<tr><td>CPP 6</td><td>41.6</td><td>45.3</td><td>43.3</td></tr>
</table>
</td></tr>
<tr><td>viii)</td><td>Provision for installation of FGD shall be provided for future use.</td><td>Installation of Semi-dry FGD system is completed in CPP Unit-6 and Commissioning activities will be started after obtaining the CTO order from SPCB.</td></tr>
<tr><td>ix)</td><td>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}.</td><td>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.</td></tr>
<tr><td>x)</td><td>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.</td><td>Dust extraction systems (DE) and Dry fog dust suppression (DFDS) system installed in coal handling plant and ash handling system of Captive Power Plant.</td></tr>
<tr><td>xi)</td><td>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.</td><td>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 efforts being made for achieving 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</td></tr>
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<tr><td></td><td></td><td>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.

Fly ash dispatched through BOXN Wagon in Rakes to various cement manufacturing units (Dalmia Cement, Shree Cement, Ultratech, ACC, Ambuja, Nuvoco vistas etc.) for cement manufacturing. This has resulted increase in ash utilization.

The status of ash utilization for the period from April 2022 to September 2022 is stated below:
<table>
<tr><td>April’ 22 to September’ 22</td><td>Quantity in MT</td></tr>
<tr><td>Total ash generated</td><td>740539</td></tr>
<tr><td>Total Ash Utilised</td><td>793684</td></tr>
<tr><td>Utilization (%)</td><td>107.18%</td></tr>
</table>
Details of the ash utilization from April 2022 to September 2022 is attached as Annexure- 4.</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, Pb etc) 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 discharged to the Ash pond through High Concentration Slurry Disposal (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 carried out 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 April 2022 to September 2022 is 7.29 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</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</td></tr>
</table>

	shall be properly treated in spent pot lining treatment plant to remove fluoride and cyanide 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.	Green Energy Limited, Sambalpur for reprocessing/detoxification and in this way the carbon part is completely recycled. M/s Re Sustainability 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 Re Sustainability Ltd has started lifting the refractory part of SPL for the trial run permission given by OSPCB. Around 14500 MT SPL Refractory part and 1626 MT Carbon part is in stock till end of September- 2022 and kept inside the well-ventilated permanent covered sheds for disposal to CHW-TSDF/Actual users. We are waiting for OSPCB Consent/ Permission to M/s Re Sustainability 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. We have applied for issue of Consent to Establish (CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln. 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 OSPCB authorized reprocessing for manufacture of Alum/synthetic slag. 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. We have applied for issue of Consent to

		Establish(CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln.
xvi)	Ash pond shall be lined with HDP/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached. Ash pond water shall be recirculated and reused.	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. The ash pond and water decantation system is constructed in line with the design & drawings provided by NIT-Rourkela. The assessment of safety, strength and stability of ash dyke has been checked by Dr. CR Patra of NIT Rourkela and at present condition it is found, the dyke is stable,safe and has sufficient material strength.
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 carried out 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	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.

	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 development.	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.
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 33% Greenbelt over an area of 1098 acres inside the plant, ash pond area and township areas. Around 7,01,930 saplings planted till September 2022.
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 (60,000 cum capacity)has been developed inside the township area. 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 on 30th 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	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.	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 Sep-2022 is Rs 63.97 Crores. The details of the expenditure made under Enterpise Social Commitment (ESC) till Sep -2022 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	We have noted and accepted the stipulated condition.

	view the nature of the industry and its size and location.	
iv)	At least four number of ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO_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.	Installation of four (04) CAAQM Stations completed and commissioned. Data connectivity established with the servers of 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	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.

	for implementing all the conditions stipulated herein shall be submitted to Regional Office of the Ministry at Bhubaneswar. The funds so provided shall not be diverted for any other purpose.	
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 digitally 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. Before 1st June and 1st December every year. The monitoring data carried out through NABL Accredited Laboratory 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	The environmental statement for each financial year ending 31st March in Form-V is being submitted to the concerned authorities of SPCB and MoEF. Last environmental statement report has been submitted vide our letter no. AA/E&S/EC/2022/840, dated 15.09.2022.

	respective Regional Office at Bhubaneswar by e-mail.	
xiv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at website of the Ministry of Environment & Forest at 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.	Information to Public has been made through advertisement of the environmental clearance in two widely circulated daily newspapers i.e. "The New Indian Express" on 04-12-2012 & "The Samaja" on 05-12-2012, within seven days of receiving the clearance letter. 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 operating 360 pots out of 360 pots in Smleter and 6 units (6x150 MW) in CPP.
Sr.N	**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.	We have applied for issue of Consent to Establish (CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln.
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, 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 April' 22 to Sep' 22. Fly ash dispatched through BOXN Wagon in Rakes to various cement manufacturing units (Dalmia Cement, Shree Cement, Ultratech, ACC, Ambuja, Nuvoco vistas etc.) for cement

<table>
<tr><td></td><td></td><td>manufacturing. This has resulted increase in ash utilization.

The status of ash utilization for the period from April' 22 to September' 22 is stated below:
<table><tr><td>April' 22 to September' 22</td><td>Quantity in MT</td></tr><tr><td>Total ash generated</td><td>740539</td></tr><tr><td>Total Ash Utilised</td><td>793684</td></tr><tr><td>Utilization (%)</td><td>107.18%</td></tr></table></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.
M/s Re Sustainability ltd has started lifting the refractory part of SPL for the trail run, Permission given by OSPCB. Around 14500 MT SPL Refractory part & 1626 MT Carbon part is in stock till end of September-2022 and kept inside the well ventilitated permanent covered shed for disposal to CHW-TSDF/Actuaql user

We are in the process of exploring suitable technology for treatment and areas of utilization (co-processing in cement plants). We have applied for issue of Consent to Establish (CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln.</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 strictly complied with.</td><td>It is being Complied.</td></tr>
<tr><td>vii)</td><td>The Project Proponent shall take fresh environment clearance in case of any change in the scope of the project.</td><td>There is no change in the scope of the project.</td></tr>
</table>

Encl: As above

Sameer Nayak

(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-II(I), Dated 29/11/2012, amendment dated 14 June 2013, 14 Aug 2018, 20 July 2020 & 12 Aug 2022 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, Odisha
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 as follows- Aegle marmelo, Albizia lebbeck, Albizia procera, Alstonia scholaris, Annona squamosa, Artocarpus heterophyllus, Azadirachta indica, Bauhinia alba, Butea monosperma, Bauhinia purpurea, Cassia fistula, Dalbergia sissoo, Delonix regia, Ficus benghalensis, Ficus religiosa, Madhuca indica, Mangifera indica, Peltophorum ferrugineum, Pongamia pinnata, Syzygium cumini, Tectona grandis, Terminalia arjuna, Terminalia bellirica, Terminalia bellirica, Termanilia catappa, Thevetia peruviana, Mimusops elangi, Psidium gujava, Samanea saman, Anthocephalus kadamba, Casia seamea, Acasia , Neerium oleander, Anacardium occidentale, etc
5	a) Species: (trees/shrubs/grasses/climbers)	Aegle marmelo, Albizia lebbeck, Albizia procera, Alstonia scholaris, Annona squamosa, Artocarpus heterophyllus, Azadirachta indica, Bauhinia alba, Butea monosperma, Bauhinia purpurea, Cassia fistula, Dalbergia sissoo, Delonix regia, Ficus benghalensis, Ficus religiosa, Madhuca indica, Mangifera indica, Peltophorum ferrugineum, Pongamia pinnata, Syzygium cumini, Tectona grandis, Terminalia arjuna, Terminalia bellirica, Terminalia bellirica, Termanilia catappa, Thevetia peruviana, Mimusops elangi, Psidium gujava, Samanea saman, Anthocephalus kadamba, Casia seamea, Acasia , Neerium oleander, Anacardium occidentale , Butea monosperma etc species available.
	b) Major prevalent species of each type:	Anthocephallus cadambaTerminalia 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 nos of trees felled through OFDC, Sambalpur (CKL) Division.
	b. Name and number of plant species still available in the area	Plant species and number will be counted after completion of all the project activities and will be submitted to your good office
	c. By protecting the area will indigenous stock come up	Nil
	d. Extent of greenbelt developed	1098 acres covered under greenbelt.
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 1098 acres of land has been covered under greenbelt.				

b) Plantation details (category wise &methodology used)

Year of plantation	Species Planted	Spacing	Height attained(feet)	Total area covered	Area still available
2010-11 & 2011-12	Aegle marmelo, Albizia lebbeck, Albizia procera, Alstonia scholaris, Annona squamosa, Artocarpus heterophyllus, Azadirachta indica, Bauhinia alba, Butea monosperma, Bauhinia purpurea, Cassia fistula, Dalbergia sissoo, Delonix regia, Ficus benghalensis, Ficus religiosa, Madhuca indica, Mangifera indica, Peltophorum ferrugineum, Pongamia pinnata, Syzygium cumini, Tectona grandis, Terminalia arjuna, Terminalia bellirica, Terminalia bellirica, Termanilia catappa, Thevetia peruviana, Mimusops elangi, Psidium gujava, Samanea saman, Anthocephalus kadamba, Casia seamea, Acasia , Neerium oleander, Anacardium occidentale, Dalbergia latifolia, Sterculia foetida etc	2*2	32’-36’	14.7 Ha	33% of the project area covered under Green Belt.
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	17’-20’	20.0 Ha	
2017-18		2*2	14’-18’	46.8 Ha	
2018-19		2*2	13’-15’	45.0 Ha	
2019-20		2*2	8’- 10’	82.96 Ha	
2020-21		2*2	6’-8’	80.94 Ha	
2021-22		2*2	5’-6’	63.67 Ha	
2022-23		2*2	3’-5’	Density Enhancement in existing plantation area	
Total				444.63 Ha	

c) Survival of Plantation:

Total Plantation (No.)	7,01,930
Survival (No.)	6,31,737
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	75,00,000	75,00,000	70.00
12	2021-22	85,00,000	85,00,000	126.00
13	2022-23	85,00,000	40,00,000 (till Sep 22)	80.00 (till Sep 2022)

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

Forest officials from Divisional Forest Office, Sambalpur and Forest Range Office, Rengali are visiting 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.

Sameer Nayak

(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 : 61
   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	378	18	404
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	32	14	46

7. Any other information : NIL

Saineer Nayak
(Authorised Signatory)

Annexure-1

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 Engineering
- 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

Ref : Envlab/22/R-1146

Date : 28.04.2022

STACK EMISSION MONITORING REPORT FOR APRIL-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.04.2022
3. Sampling Location : **ST-7: Stack attached to FTC-1 (ABF-1)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.04.2022 TO 22.04.2022

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	°C	IS 11255: Part 3 :1985 (Reaff 2008)	-	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	13.4
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	123847.8
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	737.3
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	11.2
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	376.5
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	82.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.39
Total Fluoride as F	mg/Nm^3	Calculation	-	0.50
Fluoride Emission	Kg/T	Calculation	-	0.0015
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: BDL- Below Detection Limit.

Reviewed By

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/22/R-1148 **Date : 28.04.2022**

STACK EMISSION MONITORING REPORT FOR APRIL-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.04.2022
3. Sampling Location : **ST-8: Stack attached to FTC-2 (ABF-2)**
4. Name of sampling Instrument: Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.04.2022 TO 22.04.2022

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 (Reaff 2008)	-	97.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	13.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	73674.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	735.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	13.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	344.2
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	81.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.12
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.52
Fluoride Emission	Kg/T	Calculation	-	0.0009
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	$\mu g/Nm^3$	Gas Chromatography	-	BDL

Note: BDL: Below Detection Limit.

Reviewed By

Approved 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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- 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/22/R-2711 Date : 02.06.2022

STACK EMISSION MONITORING REPORT FOR MAY-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.05.2022
3. Sampling Location : **ST-7: Stack attached to FTC-1 (ABF-1)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.05.2022 TO 26.05.2022

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 (Reaff 2008)	-	97.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	12.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	111033.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	731.1
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	7.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	391.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	81.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.38
Total Fluoride as F	mg/Nm^3	Calculation	-	0.48
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0013
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	BDL

Note: 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/22/R-2712 Date : 02.06.2022

STACK EMISSION MONITORING REPORT FOR MAY-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.05.2022
3. Sampling Location : **ST-8: Stack attached to FTC-2 (ABF-2)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.05.2022 TO 26.05.2022

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 (Reaff 2008)	-	88.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	11.2
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	63942.0
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	729.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	10.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	347.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	84.7
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.36
Total Fluoride as F	mg/Nm^3	Calculation	-	0.47
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0007
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAH	mg/Nm^3	Gas Chromatography	**2.0**	BDL

Note: BDL : Below Detection Limi

Prepared By

Verified By

Visiontek Consultancy Services Pvt. Ltd.

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

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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/22/R-4506 Date: 04/07/22

STACK EMISSION MONITORING REPORT FOR JUNE-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 16.06.2022
3. Sampling Location : **ST-7: Stack attached to FTC-1 (ABF-1)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 17.06.2022 TO 20.06.2022

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	°C	IS 11255: Part 3 :1985 (Reaff 2008)	-	97.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	12.4
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	116270.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	737.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	9.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	382.8
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	78.5
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride as F	mg/Nm^3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	0.1	0.0014
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAH	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detection Limit.

Reviewed By

BBSR

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721
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Laboratory Services
Environment Lab
Food Lab
Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref: Envlab/22/2507 Date: 04/07/22

STACK EMISSION MONITORING REPORT FOR JUNE-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 16.06.2022
3. Sampling Location : **ST-8: Stack attached to FTC-2 (ABF-2)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 17.06.2022 TO 20.06.2022

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 (Reaff 2008)	-	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	12.4
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	69306.4
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	736.9
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	7.5
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	353.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	82.9
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.38
Total Fluoride as F	mg/Nm^3	Calculation	-	0.48
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0008
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	BDL

Note: BDL: Below Detection Limit

Reviewed by

Approved

BBSR

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- 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/22/R-5406 **Date : 30.07.2022**

STACK EMISSION MONITORING REPORT FOR JULY-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 21.07.2022
3. Sampling Location : **ST-7: Stack attached to FTC-1 (ABF-1)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 22.07.2022 TO 25.07.2022

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 (Reaff 2008)	-	101.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	12.4
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	114262.6
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	732.9
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	6.8
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	396.3
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	77.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.37
Total Fluoride as F	mg/Nm^3	Calculation	-	0.47
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0013
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	BDL

Note: BDL : Below Detection Limit.

Prepared by: **Verified by:**

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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/22/R-5407 **Date : 30.07.2022**

STACK EMISSION MONITORING REPORT FOR JULY-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 21.07.2022
3. Sampling Location : **ST-8: Stack attached to FTC-2 (ABF-2)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 22.07.2022 TO 25.07.2022

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 (Reaff 2008)	-	102.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	12.6
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	69630.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	731.7
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	5.9
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	361.8
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	80.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.36
Total Fluoride as F	mg/Nm^3	Calculation	-	0.46
Fluoride Emission	Kg/T	Calculation	**0.1**	0.0008
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	BDL

Note: BDL: Below Detection Limit.

Prepared by: **Verified by:**

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Test Report No.: Envlab/22/R- 6643 **Date: 30.08.2022**

STACK EMISSION MONITORING REPORT FOR AUGUST-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.08.2022
3. Sampling Location : **ST-7: Stack attached to FTC-1 (ABF-1)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.08.2022 TO 23.08.2022

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	°C	IS 11255: Part 3 :1985 (Reaff 2008)	-	**104.0**
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	**12.8**
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	**116786.4**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	**732.0**
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**10.2**
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	**388.0**
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	**80.2**
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	**0.10**
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	**0.39**
Total Fluoride as F	mg/Nm^3	Calculation	-	**0.49**
Fluoride Emission	Kg/T	Calculation	**0.1**	**0.0014**
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	**BDL**
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	**BDL**

Note: BDL: Below Detection Limit.

Reviewed by

Approved by

Test Report No.: Envlab/22/R- 6644 **Date: 30.08.2022**

STACK EMISSION MONITORING REPORT FOR AUGUST-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.08.2022
3. Sampling Location : **ST-8: Stack attached to FTC-2 (ABF-2)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.08.2022 TO 23.08.2022

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	°C	IS 11255: Part 3 :1985 (Reaff 2008)	-	101.0
Velocity of Fluc Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	11.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	65353.2
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	730.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	6.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	358.6
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	82.6
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.38
Total Fluoride as F	mg/Nm^3	Calculation	-	0.49
Fluoride Emission	Kg/T	Calculation	0.1	0.0008
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL- Below Detectable Limit

Reviewed by

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Test Report No.: Envlab/22/R- 7632 Date: 30.09.2022

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 16.09.2022
3. Sampling Location : **ST-7: Stack attached to FTC-1 (ABF-1)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 17.09.2022 TO 20.09.2022

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	°C	IS 11255: Part 3 :1985 (Reaff 2008)	-	**104.0**
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	**12.4**
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	**113709.1**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	**735.0**
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**9.4**
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	**375.2**
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	**82.4**
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	**0.11**
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	**0.40**
Total Fluoride as F	mg/Nm^3	Calculation	-	**0.51**
Fluoride Emission	Kg/T	Calculation	**0.1**	**0.0014**
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	**BDL**
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	**2.0**	**BDL**

Note: BDL: Below Detection Limit.

Reviewed by

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Test Report No.: Envlab/22/R- 7633 **Date: 30.09.2022**

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium), Lapanga**
2. Date of Sampling : 16.09.2022
3. Sampling Location : **ST-8: Stack attached to FTC-2 (ABF-2)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 17.09.2022 TO 20.09.2022

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 (Reaff 2008)	-	99.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	12.2
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	68341.2
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	734.6
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	50	10.1
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	352.4
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	80.2
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.38
Total Fluoride as F	mg/Nm^3	Calculation	-	0.48
Fluoride Emission	Kg/T	Calculation	0.1	0.0008
Tar Fumes	mg/Nm^3	Extraction followed by Gas Chromatogrphy	-	BDL
Poly Aromatic Hydrocarbon as PAHs	mg/Nm^3	Gas Chromatography	2.0	BDL

Note: BDL: Below Detectable Limit.

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Annexure-2

Visiontek Consultancy Services Pvt. Ltd.

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Environment Lab
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Material Lab
Soil Lab
Mineral Lab
&
Microbiology Lab

Ref : Envlab/22/R-1148 **Date : 28.04.2022**

STACK EMISSION MONITORING REPORT FOR APRIL-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 21.04.2022
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 22.04.2022 TO 23.04.2022

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-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	102.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.6
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2012014.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	736.3
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	2.2
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	75.2
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	46.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.42
Total Fluoride	mg/Nm^3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	-	0.052

Reviewed By

Approved By

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Ref : Envlab/22/R-1149 **Date : 28.04.2022**

STACK EMISSION MONITORING REPORT FOR APRIL-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.04.2022
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.04.2022 TO 23.04.2022

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 (Reaff 2008)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	9.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2079843.1
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	736.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	2.7
Sulphur dioxide as SO2	mg/Nm^3	EPA Method 6C	-	74.5
Oxides of Nitrogen as NOx	mg/Nm^3	EPA Method 7E	-	59.0
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.43
Total Fluoride	mg/Nm^3	Calculation	-	0.53
Fluoride Emission	Kg/T	Calculation	-	0.048

Reviewed By

Approved By

Ref : Envlab/22/R-2713 Date : 02.06.2022

STACK EMISSION MONITORING REPORT FOR MAY-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 24.05.2022
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 25.05.2022 TO 27.05.2022

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

For Visiontek Consultancy Services Pvt. Ltd.

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	97.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.4
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1985357.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	731.4
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	2.6
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	72.7
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	43.9
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.11
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.39
Total Fluoride	mg/Nm^3	Calculation	-	0.50
Fluoride Emission	Kg/T	Calculation	**0.3**	0.048

Prepared By

Verified By

Ref : Envlab/22/R-2714 Date : 02.06.2022

STACK EMISSION MONITORING REPORT FOR MAY-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 23.05.2022
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 24.05.2022 TO 27.05.2022

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 (Reaff 2008)	-	104.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	7.7
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1787934.7
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	730.4
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	2.1
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	73.5
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	61.2
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.42
Total Fluoride	mg/Nm3	Calculation	-	0.52
Fluoride Emission	Kg/T	Calculation	**0.3**	0.045

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

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

- Infrastructure Engineering
- 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

Ref: Enmlab/22/R-4508 Date: 04/07/22

STACK EMISSION MONITORING REPORT FOR JUNE-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 20.06.2022
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 21.06.2022 TO 23.06.2022

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-9
Stack Temperature	°C	IS 11255: Part 3 :1985 (Reaff 2008)	-	108.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	9.1
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2095319.4
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	735.2
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	2.5
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	77.3
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	45.4
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm^3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	**0.3**	0.051

Visiontek Consultancy Services Pvt. Ltd. Reviewed By

Visiontek Consultancy Services Pvt. Ltd. Approved 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

Ref: VCSPL/Lab/22/R-4509 Date: 04/07/22

STACK EMISSION MONITORING REPORT FOR JUNE-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 15.06.2022
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 16.06.2022 TO 18.06.2022

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 (Reaff 2008)	-	99.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.0
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1887314.3
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	735.0
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	2.4
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	70.7
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	63.0
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.40
Total Fluoride	mg/Nm3	Calculation	-	0.50
Fluoride Emission	Kg/T	Calculation	0.3	0.045

Reviewed By   Approved By

Visiontek Consultancy Services Pvt. Ltd. BBSR

Ref: Envlab/22/R-5408 **Date : 30.07.2022**

STACK EMISSION MONITORING REPORT FOR JULY-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.07.2022
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.07.2022 TO 25.07.2022

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

For Visiontek Consultancy Services Pvt. Ltd.

Parameters	**Unit of Measurement**	**Protocol**	**Emission Prescribe Standard (OSPCB)**	**Analysis Results**
				ST-9
Stack Temperature	^{0}C	IS 11255: Part 3 :1985 (Reaff 2008)	-	103.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.8
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2061130.5
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	734.8
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	3.2
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	72.5
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	43.8
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.40
Total Fluoride	mg/Nm^3	Calculation	-	0.50
Fluoride Emission	Kg/T	Calculation	**0.3**	0.049

Prepared by: **Verified by:**

Ref: Envlab/22/R-5409 **Date : 30.07.2022**

STACK EMISSION MONITORING REPORT FOR JULY-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 21.07.2022
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 22.07.2022 TO 25.07.2022

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 (Reaff 2008)	-	107.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.0
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1842097.2
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	731.9
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	2.2
Sulphur dioxide as SO2	mg/Nm^3	EPA Method 6C	-	72.2
Oxides of Nitrogen as NOx	mg/Nm^3	EPA Method 7E	-	66.1
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	0.38
Total Fluoride	mg/Nm^3	Calculation	-	0.48
Fluoride Emission	Kg/T	Calculation	**0.3**	0.042

Prepared by: **Verified by:**

Test Report No.: Envlab/22/R- 6645 Date: 30.08.2022

STACK EMISSION MONITORING REPORT FOR AUGUST-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 18.08.2022
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 19.08.2022 TO 22.08.2022

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-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	**105.0**
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	**7.9**
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	**1842503.6**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	**732.8**
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**2.8**
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	**73.1**
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	**44.5**
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	**0.10**
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	**0.38**
Total Fluoride	mg/Nm^3	Calculation	-	**0.48**
Fluoride Emission	Kg/T	Calculation	**0.3**	**0.042**

Reviewed by

Approved by

Test Report No.: Envlab/22/R- 6646 **Date: 30.08.2022**

STACK EMISSION MONITORING REPORT FOR AUGUST-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 22.08.2022
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 23.08.2022 TO 25.08.2022

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 (Reaff 2008)	-	108.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	9.3
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	2135361.2
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	730.7
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	2.2
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	73.1
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	60.5
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	0.3	0.052

Reviewed by

Approved by

Test Report No.: Envlab/22/R- 7634 **Date: 30.09.2022**

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 16.09.2022
3. Sampling Location : **ST-9: Stack attached to GTC-1 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 17.09.2022 TO 20.09.2022

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

For Visiontek Consultancy Services Pvt. Ltd.

Parameters	Unit of Measurement	Protocol	Emission Prescribe Standard (OSPCB)	Analysis Results
				ST-9
Stack Temperature	^0C	IS 11255: Part 3 :1985 (Reaff 2008)	-	**109.0**
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	**9.2**
Quantity of Gas Flow	Nm^3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	**2105674.6**
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	**729.5**
Concentration of Particulate Matter as PM	mg/Nm^3	IS 11255: Part 1 :1985 (Reaff 2003)	**50**	**3.13**
Sulphur dioxide as SO_2	mg/Nm^3	EPA Method 6C	-	**72.4**
Oxides of Nitrogen as NO_x	mg/Nm^3	EPA Method 7E	-	**40.2**
Particulate Fluoride	mg/Nm^3	Distillation followed by Ion Electrode method	-	**0.10**
Gaseous Fluoride	mg/Nm^3	Ion Electrode method	-	**0.39**
Total Fluoride	mg/Nm^3	Calculation	-	**0.49**
Fluoride Emission	Kg/T	Calculation	**0.3**	**0.050**

Visiontek Consultancy Services Pvt. Ltd. BBSR — **Reviewed by**

Visiontek Consultancy Services Pvt. Ltd. BBSR — **Approved by**

Test Report No.: Enviab/22/R- 7635 Date: 30.09.2022

STACK EMISSION MONITORING REPORT FOR SEPTEMBER-2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit-Aditya Aluminium); Lapanga**
2. Date of Sampling : 19.09.2022
3. Sampling Location : **ST-10: Stack attached to GTC-2 (Pot room)**
4. Name of sampling Instrument : Stack Sampler
5. Sample Collected by : VCSPL Representative in presence of Aditya Aluminium Representative
6. Date of Analysis : 20.09.2022 TO 22.09.2022

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 (Reaff 2008)	-	106.0
Velocity of Flue Gas	m/sec	IS 11255: Part 3 :1985 (Reaff 2008)	-	8.0
Quantity of Gas Flow	Nm3/Hr	IS 11255: Part 3 :1985 (Reaff 2008)	-	1842276.8
Barometric Pressure	mm of Hg	IS 11255: Part 3 :1985 (Reaff 2008)	-	732.8
Concentration of Particulate Matter as PM	mg/Nm3	IS 11255: Part 1 :1985 (Reaff 2003)	50	2.7
Sulphur dioxide as SO2	mg/Nm3	EPA Method 6C	-	72.6
Oxides of Nitrogen as NOx	mg/Nm3	EPA Method 7E	-	64.2
Particulate Fluoride	mg/Nm3	Distillation followed by Ion Electrode method	-	0.10
Gaseous Fluoride	mg/Nm3	Ion Electrode method	-	0.41
Total Fluoride	mg/Nm3	Calculation	-	0.51
Fluoride Emission	Kg/T	Calculation	0.3	0.045

Reviewed by

Approved by

Annexure-3

POTROOM ONLINE FUGITIVE MONITORING(HF) REPORT April '22 TO September '22

Apr-22		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		Avg. in PPM
		01-04-22	02-04-22	03-04-22	04-04-22	05-04-22	06-04-22	07-04-22	08-04-22	09-04-22	10-04-22	11-04-22	12-04-22	13-04-22	14-04-22	15-04-22	16-04-22	17-04-22	18-04-22	19-04-22	20-04-22	21-04-22	22-04-22	23-04-22	24-04-22	25-04-22	26-04-22	27-04-22	28-04-22	29-04-22	30-04-22		
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.134	0.141	0.137	0.167	0.177	0.181	0.151	0.202	0.175	0.205	0.165	0.167	0.188	0.218	0.173	0.228	0.197	0.146	0.168	0.141	0.176	0.264	0.196	0.224	0.167	0.148	0.115	0.196	0.204	0.168		0.177
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.314	0.353	0.434	0.388	0.425	0.399	0.332	0.378	0.233	0.366	0.344	0.346	0.354	0.425	0.358	0.344	0.339	0.339	0.341	0.39	0.389	0.507	0.251	0.304	0.317	0.359	0.234	0.244	0.248	0.197		0.342
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.319	0.379	0.346	0.446	0.398	0.492	0.422	0.467	0.425	0.448	0.379	0.315	0.365	0.458	0.394	0.395	0.388	0.435	0.295	0.376	0.401	0.642	0.401	0.49	0.286	0.41	0.25	0.387	0.335	0.448		0.400
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.197	0.198	0.243	0.189	0.474	0.301	0.292	0.339	0.494	0.318	0.308	0.35	0.403	0.32	0.312	0.418	0.431	0.289	0.295	0.294	0.441	0.292	0.139	0.322	0.268	0.197	0.298	0.173	0.408	0.297		0.310
																														Monthly Average(ppm)			0.307
																														Monthly Average (mg/M3)			0.256

May-22		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	Tuesday	Avg. in PPM
		01-05-22	02-05-22	03-05-22	04-05-22	05-05-22	06-05-22	07-05-22	08-05-22	09-05-22	10-05-22	11-05-22	12-05-22	13-05-22	14-05-22	15-05-22	16-05-22	17-05-22	18-05-22	19-05-22	20-05-22	21-05-22	22-05-22	23-05-22	24-05-22	25-05-22	26-05-22	27-05-22	28-05-22	29-05-22	30-05-22	31-05-22	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.104	0.188	0.139	0.271	0.108	0.251	0.154	0.151	0.147	0.252	0.226	0.15	0.095	0.123	0.106	0.221	0.098	0.163	0.1867	0.163	0.099	0.194	0.07	0.206	0.108	0.103	0.07	0.071	0.156	0.079	0.072	0.146
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.159	0.217	0.21	0.279	0.263	0.405	0.381	0.281	0.299	0.334	0.479	0.281	0.222	0.152	0.182	0.193	0.206	0.225	0.2516	0.209	0.136	0.241	0.219	0.386	0.309	0.256	0.236	0.201	0.215	0.241	0.219	0.254
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.293	0.527	0.33	0.541	0.388	0.656	0.361	0.508	0.296	0.622	0.474	0.506	0.389	0.501	0.292	0.476	0.266	0.524	0.4986	0.496	0.261	0.565	0.221	0.702	0.302	0.494	0.354	0.393	0.365	0.319	0.337	0.428
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.319	0.139	0.359	0.122	0.176	0.248	0.193	0.217	0.253	0.275	0.435	0.213	0.292	0.302	0.238	0.129	0.34	0.292	0.6282	0.216	0.288	0.148	0.065	0.172	0.135	0.339	0.324	0.189	0.173	0.073	0.266	0.244
																														Monthly Average(ppm)			0.268
																														Monthly Average (mg/M3)			0.223

Jun-22		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
		01-06-22	02-06-22	03-06-22	04-06-22	05-06-22	06-06-22	07-06-22	08-06-22	09-06-22	10-06-22	11-06-22	12-06-22	13-06-22	14-06-22	15-06-22	16-06-22	17-06-22	18-06-22	19-06-22	20-06-22	21-06-22	22-06-22	23-06-22	24-06-22	25-06-22	26-06-22	27-06-22	28-06-22	29-06-22	30-06-22		
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.086	0.04	0.06	0.062	0.109	0.117	0.123	0.159	0.062	0.138	0.135	0.129	0.133	0.1001	0.2255	0.1331	0.1235	0.1384	0.1932	0.2136	0.1701	0.1755	0.2064	0.1727	0.2808	0.2794	0.221	0.1479	0.2598	0.2052		0.153
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.243	0.206	0.114	0.148	0.213	0.274	0.258	0.213	0.121	0.284	0.276	0.241	0.237	0.2092	0.4291	0.3386	0.2523	0.3925	0.4233	0.5378	0.409	0.4009	0.4029	0.3026	0.4104	0.4727	0.4453	0.3784	0.3296	0.4376		0.313
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.394	0.208	0.282	0.343	0.313	0.321	0.451	0.308	0.183	0.389	0.451	0.34	0.444	0.2717	0.672	0.5169	0.5684	0.5755	0.6397	0.5008	0.6565	0.451	0.6571	0.7491	0.709	0.5012	0.6076	0.68	0.7725	0.4843		0.481
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.215	0.139	0.122	0.337	0.167	0.091	0.379	0.286	0.119	0.418	0.275	0.257	0.216	0.2986	0.2694	0.3725	0.2366	0.2178	0.0808	0.1525	0.3059	0.0898	0.2709	0.2475	0.2047	0.4571	0.2659	0.4082	0.4635	0.455		0.261
																														Monthly Average(ppm)			0.302
																														Monthly Average (mg/M3)			0.251

Jul-22		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
		01-07-22	02-07-22	03-07-22	04-07-22	05-07-22	06-07-22	07-07-22	08-07-22	09-07-22	10-07-22	11-07-22	12-07-22	13-07-22	14-07-22	15-07-22	16-07-22	17-07-22	18-07-22	19-07-22	20-07-22	21-07-22	22-07-22	23-07-22	24-07-22	25-07-22	26-07-22	27-07-22	28-07-22	29-07-22	30-07-22	31-07-22	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.2772	0.2789	0.2005	0.1628	0.1525	0.3305	0.2213	0.2048	0.356	0.374	0.371	0.343	0.361	0.347	0.34	0.426	0.397	0.189	0.247	0.214	0.132	0.236	0.221	0.21	0.152	0.257	0.252	0.102	0.104	0.178	0.112	0.250
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.404	0.4672	0.4909	0.4831	0.3668	0.5452	0.3942	0.4998	0.483	0.472	0.454	0.489	0.391	0.508	0.449	0.557	0.459	0.441	0.45	0.498	0.391	0.379	0.298	0.222	0.215	0.295	0.262	0.204	0.198	0.296	0.334	0.400
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.628	0.5646	0.7517	0.5955	0.6272	0.5289	0.6008	0.4127	0.574	0.484	0.665	0.613	0.532	0.481	0.618	0.628	0.679	0.499	0.615	0.465	0.664	0.528	0.755	0.651	0.646	0.548	0.479	0.355	0.449	0.494	0.501	0.569
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.3315	0.1578	0.243	0.3176	0.2801	0.3541	0.1578	0.1429	0.134	0.382	0.242	0.403	0.204	0.242	0.14	0.138	0.321	0.326	0.263	0.283	0.358	0.149	0.19	0.307	0.233	0.292	0.156	0.249	0.156	0.402	0.338	0.255
																														Monthly Average(ppm)			0.368
																														Monthly Average (mg/M3)			0.306

Aug-22		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
		01-08-22	02-08-22	03-08-22	04-08-22	05-08-22	06-08-22	07-08-22	08-08-22	09-08-22	10-08-22	11-08-22	12-08-22	13-08-22	14-08-22	15-08-22	16-08-22	17-08-22	18-08-22	19-08-22	20-08-22	21-08-22	22-08-22	23-08-22	24-08-22	25-08-22	26-08-22	27-08-22	28-08-22	29-08-22	30-08-22	31-08-22	
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.145	0.167	0.222	0.104	0.158	0.179	0.299	0.244	0.224	0.187	0.221	0.251	0.324	0.258	0.12	0.103	0.148	0.185	0.271	0.206	0.163	0.153	0.135	0.162	0.108	0.099	0.059	0.188	0.169	0.119	0.105	0.177
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.245	0.233	0.286	0.198	0.257	0.249	0.368	0.283	0.39	0.329	0.348	0.32	0.386	0.315	0.298	0.235	0.256	0.242	0.306	0.266	0.331	0.278	0.198	0.224	0.198	0.207	0.169	0.306	0.206	0.169	0.187	0.267
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.42	0.577	0.488	0.449	0.452	0.548	0.552	0.647	0.518	0.685	0.576	0.732	0.476	0.608	0.545	0.565	0.456	0.608	0.509	0.673	0.565	0.648	0.489	0.719	0.506	0.639	0.468	0.637	0.416	0.513	0.526	0.555
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.539	0.405	0.519	0.156	0.331	0.124	0.309	0.384	0.025	0	0.118	0.551	0.751	0.394	0.686	0.267	0.191	0.235	0.324	0.676	0.559	0.319	0.268	0.355	0.282	0.118	0.074	0.265	0.282	0.138	0.044	0.313
																														Monthly Average(ppm)			0.328
																														Monthly Average (mg/M3)			0.273

Sep-22		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	Avg. in PPM
		01-09-22	02-09-22	03-09-22	04-09-22	05-09-22	06-09-22	07-09-22	08-09-22	09-09-22	10-09-22	11-09-22	12-09-22	13-09-22	14-09-22	15-09-22	16-09-22	17-09-22	18-09-22	19-09-22	20-09-22	21-09-22	22-09-22	23-09-22	24-09-22	25-09-22	26-09-22	27-09-22	28-09-22	29-09-22	30-09-22		
FUGITIVE EMISSION CH#1 (B001-B090) HF	PPM	0.078	0.116	0.072	0.081	0.077	0.101	0.166	0.148	0.103	0.141	0.297	0.187	0.128	0.117	0.085	0.080	0.114	0.145	0.206	0.220	0.114	0.079	0.047	0.048	0.089	0.141	0.153	0.233	0.151	0.144		0.129
FUGITIVE EMISSION CH#2 (B091-B180) HF	PPM	0.208	0.183	0.098	0.076	0.086	0.069	0.188	0.155	0.14	0.253	0.266	0.212	0.179	0.151	0.078	0.038	0.085	0.107	0.121	0.143	0.135	0.07	0.075	0.056	0.224	0.172	0.142	0.191	0.127	0.139		0.139
FUGITIVE EMISSION CH#3 (A091-A180) HF	PPM	0.516	0.439	0.661	0.435	0.721	0.443	0.545	0.441	0.557	0.5	0.649	0.59	0.733	0.507	0.629	0.452	0.579	0.435	0.665	0.497	0.718	0.558	0.589	0.461	0.647	0.457	0.605	0.484	0.624	0.506		0.555
FUGITIVE EMISSION CH#4 (A001-A090) HF	PPM	0.207	0.176	0.267	0.534	0.315	0.297	0.227	0.202	0.196	0.358	0.348	0.352	0.439	0.221	0.239	0.119	0.196	0.464	0.553	0.574	0.602	0.334	0.287	0.286	0.247	0.277	0.399	0.365	0.289	0.239		0.320
																														Monthly Average(ppm)			0.286
																														Monthly Average (mg/M3)			0.238

ANNEXURE-4

NAME OF THE INDUSTRY:- ADITYA ALUMINIUM

STATUS OF UTILIZATION OF COAL ASH (FLY ASH AND BOTTOM ASH), for FY-22-23 (Upto Sep-22)

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/Silo/CHP Siding (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	April	2022	310506.96	900	607.23	118746.37	5476	124222.0	Dry ash is being supplied to Cement Plants, fly ash Brick units and in low lying area development,Road Project and remaining ash is being send through HCSD system to ash pond.	0	112137.10	0	0	0	5476	0	0	6609.27	26229.6	117612.7	143842.3	115.79	**Total 26229.57 MT** pond ash supplied to Dalmia Cement (23476.77 MT),Rajganpur and Balajee Road Project,Sundargarh (2751.81 MT).
2	May	2022	3,20,695.63	900	604.74	120060	5563	125623.0		0	116316.7	0	0	0	5563	0	0	3743.16	41908.9	121879.8	163788.77	130.38	**Total 41908.93 MT** pond ash supplied to Dalmia Cement (24112.91 MT),Rajganpur and Balajee Road Project,Sundargarh (17796.02 MT).
3	Jun	2022	265062.77	900	605.99	113353	5177	118530.0		0	117078.5	0	0	0	5177	0	0	-3725.48	27161.2	122255.5	149416.63	126.06	**Total 27161.15 MT** pond ash supplied to Dalmia Cement (18380.68 MT),Rajganpur and Balajee Road Project,Sundargarh (8780.47 MT).
4	Jul	2022	338151.98	900	612.59	123495	4777	128272.0		0	119655.9	0	0	0	4777	0	0	3839.07	5300.9	124432.9	129733.87	101.14	**Total 5300.94 MT** pond ash supplied to Dalmia Cement (5196.60 MT),Rajganpur and Balajee Road Project,Sundargarh (104.34 MT).
5	Aug	2022	349006.89	900	618.45	127581	4561	132142.0		0	99364.4	0	0	0	4561	0	0	28217.03	5321.1	103925.0	109246.07	82.67	**Total 5321.10 MT** pond ash supplied to Dalmia Cement (5321.10 MT),Rajganpur and Balajee Road Project,Sundargarh (0.00 MT).
6	Sep	2022	294067.076	900	607.07	107120	4630	111750.0		404.38	88122.2	0	0	0	4630	0	0	20516.00	4500.0	93156.6	97656.57	87.39	**Total 4500 MT** fly ash utilized in Internal road development inside plant from previous stock.
	Total		1877491.3			710355.6	30183.4	740539.0		404.4	652674.7	0.0	0.0	0.0	30183.4	0.0	0.0	59199.1	110421.7	683262.5	793684.2	107.18	

Annexure -5

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

Ref: VCSPL/22/R-8488 **Date: 07.10.2022**

ASH ANALYSIS REPORT-MAY 2022

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 : 23.05.2022
4. Date of Analysis : 24.05.2022 TO 02.06.2022
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameters	Unit	Analysis Results FA-01	Unit	Analysis Results FA-01
Chemical Analysis					
1	Na_2O	%	**0.21**	mg/kg	**2100**
2	MgO	%	**0.92**	mg/kg	**9200**
3	Al_2O_3	%	**21.8**	mg/kg	**218000**
4	SiO_2	%	**51.3**	mg/kg	**513000**
5	P_2O_5	%	**0.023**	mg/kg	**230**
6	SO_3	%	**2.3**	mg/kg	**23000**
7	K_2O	%	**0.81**	mg/kg	**8100**
8	CaO	%	**4.3**	mg/kg	**43000**
9	TiO_2	%		mg/kg	---
10	MnO	%	**0.21**	mg/kg	**2100**
11	Fe_2O_3	%	**9.3**	mg/kg	**93000**
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	%	**0.0162**	mg/kg	**162**
4	Chromium as Cr	%	**< 0.002**	mg/kg	**< 0.002**
5	Vanadium as V	%	**<0.001**	mg/kg	**<0.001**
6	Iron as Fe	%	**5.384**	mg/kg	**53840**
7	Cobalt as Co	%	**<0.001**	mg/kg	**<0.001**
8	Copper as Cu	%	**0.068**	mg/kg	**680**
9	Nickel as Ni	%	**0.088**	mg/kg	**880**
10	Zinc as Zn	%	**0.0534**	mg/kg	**534**
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	**<0.001**	mg/kg	**<0.001**

P. Pati
Prepare by:

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Jagmohan Nag
Verified by:

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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

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

Ref: VCSPL/22/R-8489

Date: 07.10.2022

ASH ANALYSIS REPORT-MAY 2022

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 : 23.05.2022
4. Date of Analysis : 24.05.2021 TO 02.06.2022
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameters	Unit	Analysis Results BA-01	Unit	Analysis Results BA-01
Chemical Analysis					
1	Na_2O	%	0.24	mg/kg	2400
2	MgO	%	2.7	mg/kg	27000
3	Al_2O_3	%	26.4	mg/kg	264000
4	SiO_2	%	48.2	mg/kg	482000
5	P_2O_5	%	0.025	mg/kg	250
6	SO_3	%	11.2	mg/kg	112000
7	K_2O	%	0.94	mg/kg	9400
8	CaO	%	31.8	mg/kg	318000
9	TiO_2	%	0	mg/kg	---
10	MnO	%	0.34	mg/kg	3400
11	Fe_2O_3	%	7.5	mg/kg	75000
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	%	0.0155	mg/kg	155
4	Chromium as Cr	%	< 0.002	mg/kg	< 0.002
5	Vanadium as V	%	<0.001	mg/kg	<0.001
6	Iron as Fe	%	6.2	mg/kg	62000
7	Cobalt as Co	%	<0.001	mg/kg	<0.001
8	Copper as Cu	%	0.028	mg/kg	280
9	Nickel as Ni	%	0.091	mg/kg	910
10	Zinc as Zn	%	0.0672	mg/kg	672
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	<0.001	mg/kg	<0.001

P. Pati
Prepare by:

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Jagmohan Nag
Verified by:

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E-mail: visiontek@vcspl.org, visiontekin@gmail.com
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Annexure- 6

Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
F : (0674) 2362918

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/902
Date : 15.07.2022
Sample No. : MSKGL/ED/2021-22/06/01351
Sample Description : Ground Water
Sampling Location : Piezometric Borewell-1 (Near Ash Pond)
Date of Sampling : 07.06.2022

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°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	6.96
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	147.0
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	19.2
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	0.47
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.49
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	0.24
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	8.0
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:0.01)
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	DDL(DL:0.001)
24.	Sodium as Na in mg/l	----	----	APHA 23rd Edition, 3500 Na B	10.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	218.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	2.8
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	76.0

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/903
Date : 16.07.2022
Sample No. : MSKGL/ED/2022-23/06/01352
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-2 (Near Proposed Ash Pond)
Date of Sampling : 07.06.2022

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°C	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	135.0
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	20.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	10.0
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	0.36
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	6.0
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	7.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	75.0
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	8.9
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	211.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	5.2
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	68.0

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/904
Date : 16.07.2022
Sample No. : MSKGL/ED/2022-23/06/01353
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-3 (Near RR Colony)
Date of Sampling : 07.06.2022

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°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.34
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	304.0
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	48.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	67.0
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	0.4
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.36
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	10.0
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 Sc 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	18.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	162.0
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	32.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	475.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	4.5
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	135.0

Report Prepared by: S.Kanga

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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/905
Date : 16.07.2022
Sample No. : MSKGL/ED/2022-23/06/01354
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-4 (Bomaloi Village)
Date of Sampling : 07.06.2022

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°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.02
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	241.0
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	36.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	62.0
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	0.37
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.26
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	9.0
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	13.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	128.0
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	21.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	376.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	6.2
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	51.0

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/902
Date : 07.10.2022
Sample No. : MSKGL/ED/2022-23/09/00552
Sample Description : Ground Water
Sampling Location : Piezometric Borewell-1 (Near Ash Pond)
Date of Sampling : 13.09.2022

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°C	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	BDL(DL:1.0)
3.	Total Dissolved Solids as TDS in mg/l	500	2000	IS 3025 (Part 16)-1984; Rffm:2012	156.0
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	15.0
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	0.39
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.44
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	8.0
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	0.31
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	14.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	93.0
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	243.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	3.5
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	86.0

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/903
Date : 07.10.2022
Sample No. : MSKGL/ED/2022-23/09/00553
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-2 (Near Proposed Ash Pond)
Date of Sampling : 13.09.2022

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°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	6.95
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	102.0
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	15.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	10.0
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	0.34
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	4.0
12.	Mangancse 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	1.4
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	9.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	54.0
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	6.9
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	159.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	2.8
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	64.0

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/904
Date : 07.10.2022
Sample No. : MSKGL/ED/2022-23/09/00554
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-3 (Near RR Colony)
Date of Sampling : 13.09.2022

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°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.42
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	333.0
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	53.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	58.0
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	0.39
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	8.0
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	33.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	166.0
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	27.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	520.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	9.2
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	142.0

Report Prepared by:

Mitra S. K. Private Limited
Authorized Signatory

Mitra S. K. Private Limited

N-5/100, Ground Floor
IRC Village, Nayapalli
Bhubaneswar - 751015
[CIN: U51909WB1956PTC023037]

T : (0674) 2362916, 2360917
F : (0674) 2362918

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/905
Date : 07.10.2022
Sample No. : MSKGL/ED/2022-23/09/00555
Sample Description : Ground Water
Sampling Location : Pizometric Borewell-4 (Bomaloi Village)
Date of Sampling : 13.09.2022

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°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)-1984 Rffm: 2012	7.51
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	136.0
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	17.0
7.	Chloride as Cl in mg/l	250	1000	IS 3025 (Part 32)-1988 Rffm: 2014	22.0
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	0.64
10.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53)-1988 Rffm: 2014	0.45
11.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46)-1994 Rffm: 2014	9.0
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	21.0
17.	Total Hardness as CaCO3 in mg/l	200	600	IS 3025 (Part 21)-2013	80.0
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	16.0
25.	Conductivity in us/cm	----	----	APHA 23rd Edition, 2510B	212.0
26.	Potassium as K in mg/l	----	----	APHA 23rd Edition, 3500 K B 2017	7.6
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:

MITRA S.K. PRIVATE LTD. BBSR

Mitra S. K. Private Limited
Authorized Signatory

Annexure-07

Compliance Status from April 22 to September 22

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 total fluoride emission for the period April 22 to September 22 is 0.11 Kg/Ton of metal production.
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 April 22 to September 22 is 7.29 kg/ton of metal 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 Re Sustainability 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 14500 MT SPL Refractory part and 1626 MT Carbon part is in stock till end of September - 2022 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 Re Sustainability 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. We have applied for issue of Consent to Establish(CTE) for the proposed SPL Crushing & Screening Unit at Aditya Aluminium. The crushed SPL will be supplied to authorized Cement Plants for co-processing in cement kiln.
7	Achieving particulate matter limit of 50 mg/Nm3 in anode baking furnace	It is being Complied with.

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 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	Not Applicable
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

Annexure-07

Compliance Status from April 22 to September 22

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

Annexure - 8

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

HINDALCO INDUSTRIES LIMITED

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 Polytechnic Rengali. Students are trained 2 year ITI course. Vocational training like Beautician, Mobile repairing, Micro irrigation Bike repairing, Soft Toy, Organic Farming (Agriculture) and Tailoring has been instituted last months.
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 7,01,930 saplings inside the factory premises till Sep 2022. Also, the industry has started plantation in the vacant spaces of the surrounding and have distributed 54103 no's of saplings till now 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. Solar Street light of 100 nos installed in 6 villages, Pipalkani Road and Bendojor Nallah construction, 5 nos of Pond Excavation, drinking water supply to 86 nos of hamlets in peak summer, 03 nos of Blood donation camps and 3 nos of health camps have been done
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 Block chairman, Rengali of 7nos of Gram Panchayats in peak summer. Drinking water

		supply to 86 nos of hamlets and main villages also got the facility.
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 Opened up Eye Healthcare Unit at Rengali, and awareness program at all villages catering benefit to 1434 nos of beneficiaries. Conducted Health camp facilitation in coordination with CHC Kuchinda and Laida where 700 nos of got benefitted. There are 5 nos of children, Adolescent healthcare and Nutrition programs conducted in the villages. First Aid centre has facility to local areas for free treatment by reputed doctors. Provided free treatment facility to more than 1535 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 meets 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 SHGs such as Spice units, Oil Processing units and paper cup making units, Vegetable farming, Phenol making, Hand wash making, Duckery, Egg Production, Tailoring, avenue Plantation & various social/health awareness programs, monthly saving programs, to the 200 nos of SHGs comprising of 2125 nos of women and 7 Farmers Group adopted by Industry. CSR has mobilised 53.39Lakh for SHG entrepreneurship program.
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 festivals like Nuakhai, Sital Sasthi, Karama Puja and Sambalpuri Din with the locals. We conduct women sports, school sports football tournaments and Cricket tournaments at different villages every year as a part of promotion of 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. Gayatri Sahu one blind graduate working with CSR team since two years and all programs are conducted regarding physically challenged persons in Block level every year.

Annexure - 10

Expense incurred under Enterprise Social Commitment till September- 2022:

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	
9	CSR expenses in & around Aditya Aluminium including Hirakud areas during April 2021 to Mar 2022	8.81	
10	CSR expenses in Education (EDU)	0.33	
11	CSR expenses in in & around in Environment and sustainable Livelhood	0.57	
12	CSR expenses in in & around in Healthcare in Hirakud areas also	1.06	
13	CSR expenses in in & around in social causes	0.40	
14	CSR expenses in in & around in Rural & Development projects	0.26	
Total Expense		63.97	

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 playground or mini stadium in Bomaloi village, as stated in the minutes of public consultation held before environmental clearance.
e) Free distribution of schoolbooks & 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.

Annexure – II

CORPORATE SOCIAL RESPONSIBILITY

Corporate Social Responsibility

Making a Difference

Aditya Aluminium, Lapanga

OVERVIEW OF SOCIAL INVESTMENT

SUSTAINABLE LIVELIHOOD

HEALTH CARE

EDUCATION

INFRASTRUCTURE

SOCIAL CHANGE

Project Samridhi *Promising Prosperity*
Project Saksham *Women Power*
Project Swavlamb *Skill Training*

Project Aayush *Health for all*

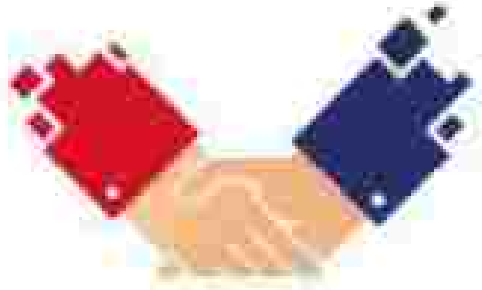
Project Sadhana – *Nurturing Minds*

Project Unnati *Building Lifestyle*

Project Parivartan *Transforming Society*

- Agriculture
- Non-Farm Animal Husbandry
- Adoption of Self-Help Groups
- Facilitation of Income Generation activities
- Youths Counselling
- Training of youths
- Health
  - Suposhan
  - SAMADHAAN
  - First Aid Centre
  - Awareness Camps
  - Vision Centre
- Education
  - Support to school
  - Support to Anganwadi
  - Mo School/ ST
  - Scholarship
- Infrastructure
  - Village Asset
  - Livelihood Infrastructure
  - School Infrastructure
  - Health Infrastructure
- Social Issues
  - Government Schemes
  - Welfare
  - Environment Sustainability

OUR PARTNERS FY 2021-22



NGOs/TRUSTS

- Vision Foundation, Sambalpur
- SBISRET Burla
- Odisha Rural Development & Marketing Society (ORMAS)
- SATTVA Media and Consultancy Pvt Ltd
- Action for Social Advancement (ASA)- Bhopal
- Swadheen Ekta Sangathan

INSTITUTIONS/ CONSULTANTS-

- Government Polytechnic College Rengali
- INGUZ Beauty and Healthcare Sambalpur
- Aditya Birla Skill School

GOVERNMENT ORGANISATIONS-

- Odisha Livelihood Mission (OLM)
- Integrated Child Development Services (ICDS)
- Mission Shakti
- National Health Mission (NHM)
- District and Block Agriculture & Horticulture
- District and Block Animal Husbandry
- District Industries Centre (DIC)
- District Education Office
- Zila Panchayat
- Krishi Vigyan Kendra

CSR BUDGET V/S EXPENDITURE

ADITYA FOCUS AREA WISE SPENDS SUMMARY, 2022-23 (RS. IN LAKHS)		
FOCUS AREAS	**BUDGET in Lakhs**	**SPEND in Lakhs**
EDUCATION	41.00	18.52
HEALTH CARE	85.00	44.05
SUSTAINABLE LIVELIHOOD	80.00	69.79
INFRASTRUCTURE	100.00	27.73
SOCIAL ISSUES	44.00	08.99
TOTAL	**350.00**	**169.08**

Note : Rs 150 lakhs--- Fly ash subsidy estimated for FY 22-23.

BASELINE & NEED ASSESSMENT SURVEY - ADITYA

By Sattva Media & Consultancy Pvt Ltd, Hyderabad

Samples	2500 HHs and 3000 Stakeholders
Coverage	39 Villages

Demography: ST-49% SC-16% OBC-32% G -3%

FINDINGS

- 35% children do not go to school
- 20% drop out in higher education.
- lack of good teachers and infrastructure
- 83% do not have easy access to diagnostic services
- 65% aspire to have access to hospital nearby
- healthcare system infrastructure need improvement
- 72% workforce is un-skilled
- 63% use unsafe water due to lack of awareness
- 40% defecate in open

RECOMMENDATIONS

- Contribute to improved school infrastructure & teachers
- Support to increase healthcare infrastructure
- Increase Ease of access of CHCs & PHCs & healthcare technologies and create awareness on Government health schemes
- Availability of safe drinking water
- Activate SHGs and FPOs to facilitate Livelihood Opportunities
- Skill Training Centre to enhance employability.
- Improve agriculture by enhancing irrigation
- Better waste management and disposal

VISION CENTRE - Affordable Eye Health Care

State of the Art One Stop Digitalized Solution for Eye Care

Vision Foundation Sambalpur

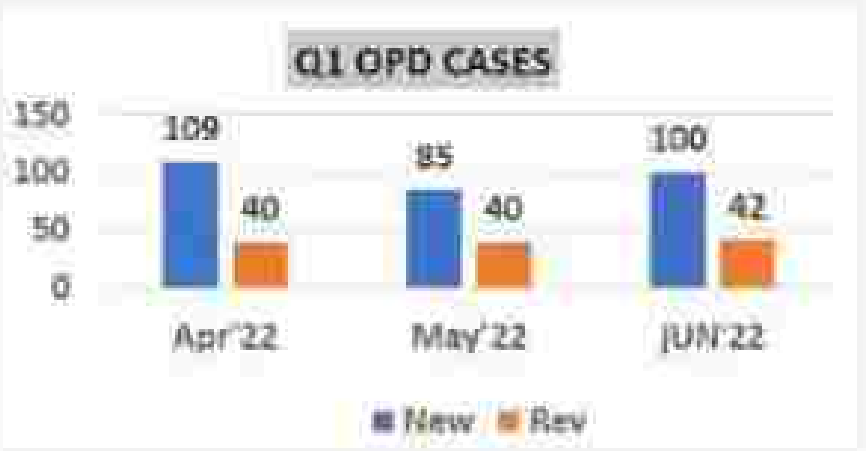
Project Cost
Aditya INR 39 Lakhs

Cataract Govt. Fund Mobilization — INR 6.63 Lakhs

Beneficiary Fund Mobilization — INR 2.56 Lakhs

Performance for Q1 FY 2022-23

VISION CENTRE – AFFORDABLE EYECARE



HIGHLIGHTS FY 2021- 22

- First Hub & Spoke Model
- Sustainable, Revenue Generation Model
- So far 636 Free Cataract Surgeries, 15 Glaucoma Cases
- 2381 beneficiaries, 356 spectacles provided

MONITORING & EVALUATION

WATS APP GROUP and web cam access FOR REALTIME MONITORING OF CENTRE

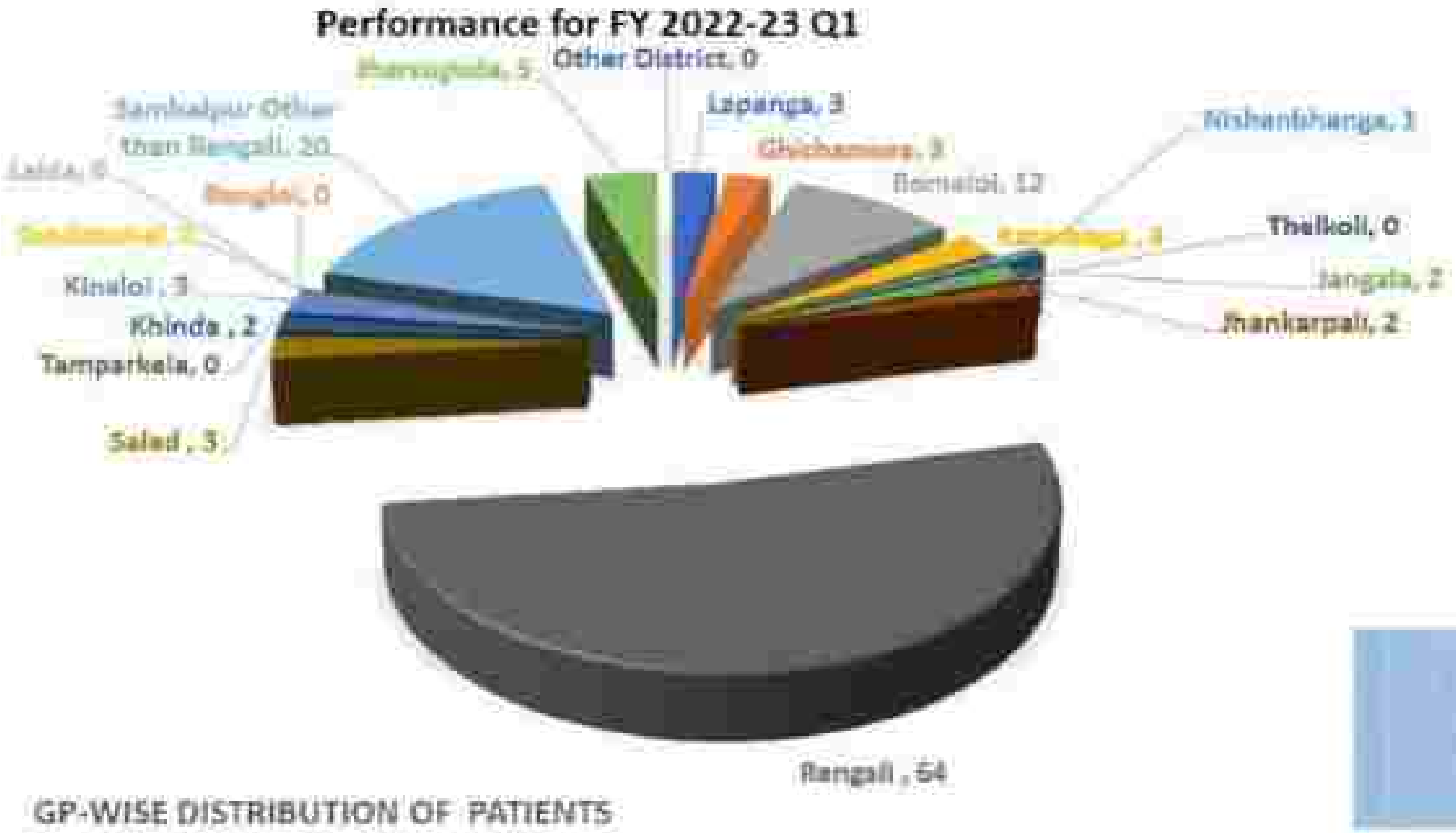
RECORDED FEEDBACK CALLS

FEEDBACK REGISTER

MONTHLY REVIEW MEETING

22 Free Cataract Surgery in Q1 '22

Project Vision Centre – Affordable Eye Health Care



- 22 FREE CATARACT SURGERY
- ANNUAL REPORT
- SAMPLE IMPACT ASSESSMENT :

SAMPLE SIZE - 45

63 % RESPONDENT SATISFIED/ 12 % NOT AVAILED SERVICES till date

Outreach Vision Centre

Trilochan Vision Centre Rengali Annual Report 2021-22 (1).pdf

SOME GLIMPSES OF PROJECT VISION CENTRE

Vision Centre

- Eye Screening at Village Level
- More than 200 people screened
- 52 cases of Cataract identified

DATE July '22	PLACE	EYE Screening	CATARCT INDENTIFIED
04	BALISEN	13	5
05	KHADIAPALI	7	2
06	JAMBAHAL	14	5
09	THELKOILI	30	5
17	JHANKARPALI, TAMPARKELA, TABDABAHAL	52	19
20	JAMBAHAL	10	1
21	MANGALPUR	17	3
22	KADALPITA,KASILI	23	7
25	PITAPALI	13	4
29	SALAD	15	1

- Awareness Camps

SL NO	DATE	PLACE	Participants
1	4/7/22	KHADIAPALI	11
2	6/7/22	JAMBAHAL	10
3	8/7/22	THELKOILI	10
4	13/7/22	LAHAMANI	15
5	14/7/22	R R COLONY	138
6	21/7/22	MANGALPUR	18
7	22/7/22	KASIPALI	13
8	22/7/22	KADALPITA	11
		TOTAL	226

Vision Centre

- 262 OPD
- Out of 48 advised spectacles 42 bought from VC
- 57 Cataract surgeries done

No .of patients footfall	262
No .of new patients	175
No .of referrals made to TN-Base Hospital	85
No .of referred patients visited TN Base Hospital	70
No .of free cataract surgeries done	57
Other surgeries done(DCT, Pteryglum)	0
No .of patients advised/prescribed for spectacles	48
No .patients ordered spectacles	41
Specialty case detection(Glaucoma ,DR)	0

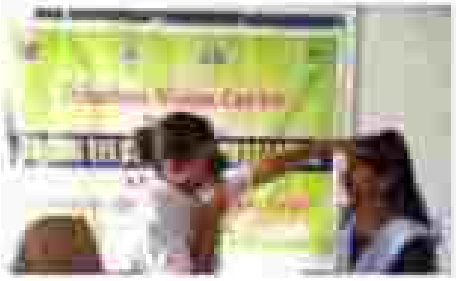
- Awareness Camps

SL NO	DATE	PLACE	Participants
1	02/08/22	TURITIKIRA	13
2	06/08/22	KURLA	11
3	12/08/22	RENGALI NICE CENTRE	20
4	19/08/22	PARDESHI PALI	13
5	23/08/22	THUNTI KATARBAGA	19
6	24/08/22	KHINDA GP OFFICE	16
7	26/08/22	KINALDI GP OFFICE	12
		TOTAL	104

PROJECT VISION CENTRE- VISION MONTH CELEBRATION

- 42 Patients from Rengali block sent for free Cataract Surgery at Trilochan Netralaya
- Umbrella given to all beneficiaries as memento
- Attended by Block Chairman, Block Education Officer Rengali and Block Social Security Officer

PROJECT VISION CENTRE- HIGH SCHOOL EYE SCREENING CAMP



- 17 High Schools Covered
- 1400+ students reached
- 57 detected with refraction and provided spectacles
- IEC and Awareness on Eye healthcare in all Schools
- Employee Volunteerism in the event

SL NO	DATE	HIGH SCHOOL	STUDENTS SCREENING
1	22/7/22	LAPANGA	75
2	22/7/22	DHARGPANI	65
3	23/7/22	BENGALI NODAL	299
4	25/7/22	THELKOILI	65
5	26/7/22	BENGALI GIRLS	36
6	26/7/22	R C NAGAR	114
7	27/7/22	GHICHAMURA	61
8	27/7/22	JHANKARPALI	58
9	28/7/22	KATABAGA	106
10	28/7/22	GOLAMAL	92
11	29/7/22	LAIDA GOVT	50
12	29/7/22	LAIDA GIRLS	45
13	30/7/22	TAMPERKELA	67

PROJECT Vision Centre- Spectacle Distribution

- 55 students provided with spectacles in Rengali block
- 13 high schools Covered

PROJECT AAYUSH- MDD Awareness Session

- With onset of Monsoon regular awareness session on MDD conducted in villages
- 10 villagers attended the session in Bomoloi GP

WORLD POPULATION DAY

- Awareness Session was organized in association with CHC Laida and ASHA ANM
- 20 villagers attended the session in Orampada Village

WORLD BREAST FEEDING WEEK CELEBRATION

- 6 Awareness sessions in 6 Gram Panchayat
- 224 women participants
- Attended by Laida CHC coordinator, Aditya Employees, ASHA ANM Anganwadi workers

Project Suposhan- Nutrition Awareness and Nutri Garden Preparation At Talibahal Anganwadi Centre

Project Suposhan
National Nutrition Day
September 6

- DPM ICDS attended the event
- Nutri – Garden promoted in each anganwadi with available space and water availability

Nutri Garden Development at Anganwadi – Project Suposhan

- Talibahal Anganwadi developed as Model Nutri Garden
- 30 children will be benefitted
- 4 severely malnourished children to be monitored to establish impact

Health Camp at Bomoloi

- 527 patients availed services
- Aditya Doctors, Vision Centre Optometrist and Government doctors provided services
- Inaugurated by Head HR Aditya, Block Chairman Rengali, Sarpanch Bomoloi, School HM, ASHA ANM

First Aid Centre–Project Aayush

FIRST AID CENTER	
MONTH OF July-Aug-Sep-2022	
KPI	TOTAL
Patient Footfall	580
Village Cover	11
New Patient Register For Test	0
Old Patient Register For Test	63
Total Test Conducted	181
Medicine Expense	23998
Medicine Stock	4799

Name- Naresh Munda
Age- 7
Village- Mendakhai
DISEASE-RTI

Health Camp at Kuchinda

- 150 patients availed services
- Aditya Doctors, Hirakud Homeopathy Doctor, Vision Centre Optometrist and Government doctors provided services
- Attended by Collector Sambalpur, Kuchinda Chairman, Sarpanch, School HM, ASHA ANM

PROJECT SAMVITA- MOU Signed

- MOU Signed with Medihelp Foundation for Mobile Telemedicine
- Project will cater to primary healthcare need of 20+ villages

Jal Vahini

Last 5 days of Water supply at doorstep before Monsoon Set in

JAL VAHINI

Project Jal Vahini launched on 15th April. The project cater to drinking water need of the community in 6 Gram Panchyat of Rengali Block.

WATER SUPPLY STATISTICS	
GP	6
VILLAGE/HAMET	16/86
TOTAL VENDORS ENGAGED	32
Total TRIP / DAYS	78/ 81
TOTAL HHs approx.	3000
TOTAL BENEFICIARIES approx.	25000

PROJECT AAYUSH: HEALTH FOR ALL

Project Aayush – Health for all

Objective

- To make health care accessible, affordable and available for community
- To provide basic tests at no price
- To reduce incidence of malaria and dengue deaths
- To create awareness on health issues
- To sensitize community to increase sanitation standards in villages
- To create awareness on Government Schemes

Coverage

- 15 villages
- 5000 people

Stakeholders

- Men, Women & Children
- Government – DHD, NRHM, MO, ASHA, ANM
- PRI – Sarpanch, Samiti Member

Outcome

- More than 2000 people avail health check up in First Aid per annum
- More than 1000 tests done on Health-cube per annum
- Health Awareness Sessions organised in schools and villages
- Increase in awareness on Sanitation and hygiene practices

KPI	Apr '22	May '22	Jun'22
Patient Footfall	154	198	248
Village Cover	23	26	18
New Patient Register For Test	3	11	10
Old Patient Register For Test	34	37	49
Total Test Conducted	78	119	135
Medicine Cost	2573	3019	4582

Sunstroke Awareness Camp

- **Bomoloi AWC**
- **Gumkarma UPS**
- **15- 25 Beneficiaries / camp**

Malaria Awareness Camp

- World Malaria Day
- 35 Women reached
- ASHA and ANM participated
- Laida Medical Coordinator Resource Person

Adolescent Healthcare Awareness Camp

- **5 camps conducted in April & May**
- **150 Girls covered**
- **5 villages / schools covered**

PROJECT SAMADHAAN- ADOLESCENT HEALTHCARE

Goal

Awareness on menstrual hygiene and access to awareness on hygiene and sexual wellbeing among adolescents girls

Objective

- To provide solution for safe disposal of sanitary napkins
- To create awareness about good menstrual hygiene practices
- To break Taboo and superstitions around menstrual hygiene among adolescents
- To increase girl student attendance in schools
- To decrease girl student drop in high school

Activities

- Installation of Incinerators
- Formation of a Committee
- Conduct regular awareness session
- Discussion in the Committee meeting
- Distribution of Sanitary pad (One Time)

Project Samadhaan marks the Swachhta Pakhwada with installation and inauguration of incinerator at Rengali Primary Health Centre
World Health Day # 7th April 2022

Project Suposhan- Eating Right

Awareness Camp in Talibahal, Pipalkani

Preparation of Nutri-garden started

SAMRIDHI : Promising Prosperity
Horticulture & Agriculture Activities

Objective:
Livelihood enhancement through cash crop like Oilseeds, fruits and vegetable cultivation under Agriculture and Horticulture

Strategy:
- Farmer Institution Building (Producer Company, Farmer's Club)
- Capacity Building of farmers
- Support Backward and forward linkages

Journey So far:
- 525 farmers reached
- 12 farmers clubs formed
- 10 acres of vegetable cultivation
- 0.75 acres Sweetcorn
- 2.30 acres of Mango Orchard plantation
- Water Positivity 352 acres irrigated
178 farmers benefitted

Project Cost and earnings:
Aditya spending in FY 2021-22: Rs. 89.55 lacs
Income per farmer:
Samridhi: Rs. 11602/-

Details of VDC/ FC & Agriculture input details									
No of VDC/ FC formed	No of village	No of Members	No of VDC Account	No of farmers in concerned villages	No of Farmers in Paddy cultivation	No of Farmers engaged in Vegetable Cultivation	Support of Agriculture inputs	No of Exposure visit	No of Participant
12	10	525	7	2355	1965	497	497	3	77

SAMRIDHI : Promising Prosperity

Horticulture & Agriculture Activities

BLACK RICE PROMOTION - PILOT PROJECT

- 65 Farmers
- 30acres
- 3 Gram Panchayat
- Backward forward linkage

Sweet Corn &
Black Rice Promotion

SAMRIDHI : Promising Prosperity

Horticulture & Agriculture Activities

VEGETABLE CASH CROP PROMOTION

- 600 SHG women provided mini vegetable kit
- 6 Gram Panchayat
- 20 villages

PROJECT SAMRIDHI- AWARENESS SESSION

- Enrolment of Farmers on Government Portal
- Awareness Session on Government Schemes
- 150 farmers enrolled from Ghichamora and Bomoloi

SAMRIDHI : Promising Prosperity

Horticulture & Agriculture Activities

BLACK RICE PROMOTION - PILOT PROJECT

- 55 Farmers
- 5.5 acres
- 4 Gram Panchayat
- Backward forward linkage
- Transplantation Completed
- Capacity building training in small batches completed

No of Benificiary	No of GP Covered	Seeds distributed	Cost of seeds	Training Cost(RP)	Labour Cost	Acres of Land	Fertilizer	Current Status
55	4	125 Kg	16650/-	2000/-	750/- Per farmer	5.5 Acres	Home made manure	Process is in right track

Sweetcorn Promotion – Seed Distribution among Farmers

100 Farmers including women farmers being covered.

SAKSHAM- *Empowering Women*

Vision

To socially & economically empower 80% of SHG women to have sustainable income with dignity.

Objective

- To form and adopt Self Help Group (SHGs)
- To facilitate loan linkage for income generation activities (IGA)
- To ensure capacity building for book keeping and banking
- To provide training for IGA
- To facilitate backward forward linkage
- To create awareness on Government Schemes
- To develop into a self sustaining institution

Coverage

- 24 villages
- 200 SHGs
- 2000+ women

Stakeholders

- Women
- Government – CDPO, DPM & BPM OLM, Director DIC, Director RIC, PD DRDA, PD ORMAS, Director Mission Shakti
- PRI – Sarpanch, Samiti Member

PROJECT SAKSHAM

To socially & economically empower 80% of SHG women to have sustainable income with dignity.

Q1 Initiatives

- One New Paper Plate Unit
- Capacity Building – 100 New SHGs
- Exposure Visit – Puffed Rice Unit
- SHG Meetings – 25 nos.
- Mobilised – Rs. 2 Lakhs

Project Cost	Income Generation Activities	Capacity Building & IGA Training	Financial Inclusion	Fund Mobilization
• 10 Lakhs pa	• 50 SHGs • 600 Women • 20 IGA • SHG Income ↑₹5000/- to ₹10000/- pm	• 2 CBT • 12 IGA Training	• 100% bank linkage • 80% Loan Linkage	• Govt: INR 2.97 CR • SHG Contribution – INR 150K • Donated 51 K

PROJECT SAKSHAM- ADITYA Supported SHG Donated 51K

Social Security and Emp. PwD Sambalpur

Rabindra Satapathy · Admin · 5h ·

Donation of Rs 51000/ by women SHGs to strengthen the objective of beggar free district

ଜିଲ୍ଲାପାଳଙ୍କୁ ସ୍ୱାବଲମ୍ବୀ ମହିଳାଙ୍କ ଅର୍ଥଦାନ

PROJECT SAKSHAM- Paper Plate Making Unit

- MAA RAM CHANDI SHG
- VILLAGE - PHULCHANGER
- GRAM PANCHAYAT - BOMOLOI
- INVESTED: 1.5 LAKHS
- STARTED MAY 4 2022

PROJECT SAKSHAM- PUFFED RICE MAKING UNIT

- EXPOSURE VISIT
- JAI MAHAMAYA SHAKTI SHG
- VILLAGE: BOMOLOI
- INVESTED: 0.50 LAKHS
- CONSTRUCTION OF SHED IN PROGRESS

PROJECT SAKSHAM- TRAINING & CAPACITY BUILDING

- CAPACITY BUILDING TRAINING
- 100 NEW SHGs

Project SAKSHAM- Mushroom Cultivation

Mushroom Training at Shradhapalli and Gumkarma

Poultry Promotion as IGA under Project SAKSHAM

- 2 Units started with 1000 chicks
- 4 Units under Construction
- 3 new Units sanction @1.5 lakhs
- Backward Forward linkage facilitation by Aditya CSR
- Support to Vetnirary and OLM Department
- Aditya may support with 1000 chicks to all SHGs

PROJECT SAKSHAM- HOT CHIPS EXPOSURE VISIT

- SHG EXPOSURE VISIT TO HOT CHIPS
- JAI JAGANNATH SHG
- 6 MEMBERS OF SHG VISITED
- VILLAGE: DHORROPANI


- WELCOME -
SHROTI DRAGON FRUIT FARM
1- N.M.K SUPER GOLDEN CUSTARD APPLE
2- VIETNAM SUPER EARLY JACK FRUIT
3- ANJEER ISCHIA GOLDEN FIG
4- KASHMIRI RED APPLE BER
5- FRESH WATER SHRIMP FARM
ORGANIC - GROW MORE, ADVANCE
MI SPRAY PLUS, BHUASTRA SUPER
MOB-9556163424


Exposure Visit to Integrated
Farming Baripali Bargarh

Project SWAWLAMBH- Tailoring Training

- Community Women Exposure Visit to SAHI export Skill Training Centre Rengali
- Inauguration of SAHI export and ORMAS Tailoring Training by Colector Sambalpur
- 3 months training: first batch of 50 women. 13 from Dhorropani village
- 2nd Batch started with 30 women

Safety Jacket Exhibition Cum Sale

Tailoring Training at
Sahi Centre Rengali
2nd batch started
with 30 beneficiaries

Project SAKSHAM
SHGs IGA

Dhorropani SHG Earned 60K by stitching flag for "Har Ghar Tiranga Campaign"

Jai Jagannath SHG Naikpada Earned 60K by providing sweets namkeen for Independence Programme

KIOSK to Create Awareness and mobilize Government Schemes

- 90 women participated
- Bankers and government line department presented
- Rajiv Gandhi Seva kendra Bomoloi

SWAWLAMBH: Educate Empower Engage– Skill Training Initiative

Objective

- To Strengthen the Youths from underprivileged community
- To facilitate skill training
- To ensure placement/ enterprise opportunity
- To facilitate backward forward linkage with skill centres
- To create awareness on Government Schemes
- To develop into a confident employable/enterprising youth

Coverage

- Target to reach 1000 youths

Stakeholders

- Youths
- Government – CDPO,OLM, DIC, RIC, DRDA, ORMAS
- NGOs – SBISRETs
- Academic Institutions, Health Institutions
- Businesses
- Industries
- PRI – Sarpanch, Samiti Member

Activities

- Mobilization of youths – Phase-wise counselling
- Ensure their admission
- Monitor their progress
- Celebrate their Employment/ Engagement
- Case Studies/ Coffee table book to commensurate success stories

Partners

- SBISRET
- Inguz Beauty Parlour
- Trilochan Netralaya
- Aditya Birla Skill Centre

Trained & Placed

- Counselled 292
- 76 trained
- 54 placed / engaged
- Earning INR 5K – 8K pm
- Received 3000/- each for training as stipend. 11 of them bought own sewing machine

Mobilizatio

- INR 5 Lakhs
- Beneficiaries Contribution – INR 60K

Estimated Cost

- INR 20 Lakhs for 3 years

SWAWLAMBH: Educate Empower Engage

Office Assistant & Tally Training started for 15 Youths

Tally and Office Assistant . 3 successfully placed

Ophthalmology Nursing Training and Job offered to 6 girls, Joined Trilochan Netralaya

Tailoring Training to 21 Women

successfully completed

Bought Machines

Beautician Training to 12 girls and women

successfully completed

PERFORMANCE FY Nov 2020-Mar 2022

Krishi Udyami Training to 5 Farmers

successfully completed

SBISRET

LMV Training to 5 Youths

successfully completed

SBISRET

Micro Irrigation Training to 10 Farmers

successfully completed

SBISRET

Mobile Repair Training to 2 Youths

successfully completed

SBISRET

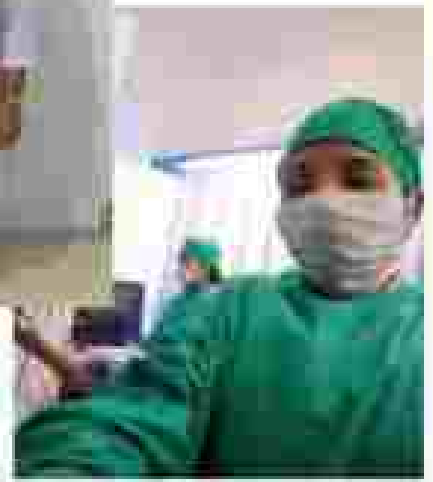
PERFORMANCE Q1 '22

IMPACT

- Ensured additional annual income for families
- Ensured additional annual income of Rs. 90,000/- for 2 families in FY 2019-20 and 4 families in FY 2020-21 Poor youths become economically independent under Othalmology Nursing Training
- Women earned More than 1 Lakh by Stitching Masks during Covid, Became entrepreneurs, Commenced Safety Jacket Business
- 6 Girls earning 5000/- pm in Beauty Parlors. Supporting their families. Aspiring to open own parlor in Lapanga
- Positive impact on other aspiring girls in vicinity villages to join the bandwagon

PROJECT SWAWLAMBH

SUCCESS STORIES




HINDALCO INDUSTRIES LIMITED


SKILLING & EMPOWERING
PROJECT SNAPSHOTS

Visit to Aditya Birla Skill Centre with Representative of Head
Held High and discuss partnership opportunity

Vibrant Independence Day Celebration @ Community

School Bag Distribution

- 90 students benefitted in Gumkarma school of Ghichamura GP

International Literacy Day 2022

Supported Science Drama Competition

Lapanga High School

SUPPORT TO SCHOOL

Project Sadhana – Nurturing Minds

Objective

- To increase enrolment in schools
- To facilitate conducive learning environment in schools
- To enhance attendance of students
- To create awareness on career options, personal hygiene, etiquettes and values

Coverage

- 20 schools (PS, ME, HS)
- 10000 students

Stakeholders

- Students, Teachers, Parents, School Management Committee
- Government – DEO, BEO, BRC, CRC
- PRI – Sarpanch, Samiti Member

Outcome

- Increase in attendance by 25%
- Enrolment – 90%
- Enhanced amenities in 12 schools
- Improved infrastructure in 5 schools- classroom, boundary wall, toilets etc

SADHANA- Nurturing Minds

- International Yoga Day was observed in Lapanga High School on 21 June 2022.
- The theme for 2022 is 'Yoga for Humanity'.
- More than 50 students from Class 9th and 10th joined the yoga session
- renowned and certified Yoga Teachers from Sambalpur Mr. Raja Ram Nayak and Mrs Mamta Nayak.

Q1 Initiatives

- Block Level Science Exhibition
- 60 projects

PROJECT MO SCHOOL ABHIYAN

A Government of Odisha Initiative under School & Mass Education Department

- **Objective** — revamping school education by promoting volunteerism and collaboration through an innovative citizen-government partnership
- **Coverage** — **3 Districts Sambalpur, Rayagada, Kalahandi** Support to 66 High Schools under ST in Odisha in phase 1 and 67 schools in Phase II Support to 80 High Schools under ST in Odisha (Sambalpur Cluster)
- **Investment** — INR 300 Lakhs (10.28cr + 0.50cr)
- **Fund Leverage** — 600 Lakhs (Govt contribution 1:2)
- **SDGs 4** — Quality Education
- **Outcome** — Plugged in infrastructure gaps in 80 High Schools

  Schools equipped with smart class, e-library, Computer lab, garden, Washrooms, Drinking water

  Increase in Student Attendance and improved performance



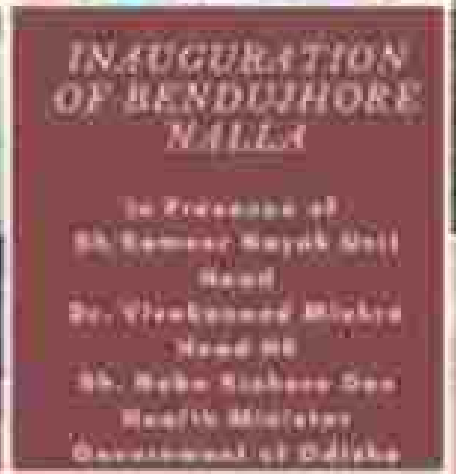



Mo School – 5 T School Visit

SL No	Block	Name of the School	Class Starting From	Student stringent	Nos of Staff	Contact details
1	Jujumura	K.G.M.N Govt High School ,Mahulpali	1 to 10	400	6	Giridhari Dansena (H.M) Ph-9348473918
2	Jujumura	Jujumura High School	6 to 10	331	14	Kulamani Pradhan (H.M) Ph-9348473918
3	Naktideuli	Bapuji Govt High School	6 to 10	310	14	Akura Kumar Pradhan (H.M) Ph-9438335868
4	Naktideuli	Govt High school,Sarapal i	1 to 10	520	13	Sasmita Majhi (H.M) Ph-9938420143
5	Maneswer	Lady lewis Girl's High school	6 to 10	1200	12	Ujagara Pradhan (H.M) Ph-9937095861

Points Discussed

- Utilization Certificate
- Branding
- Presented to Ex Collector



ADITYA BIRLA

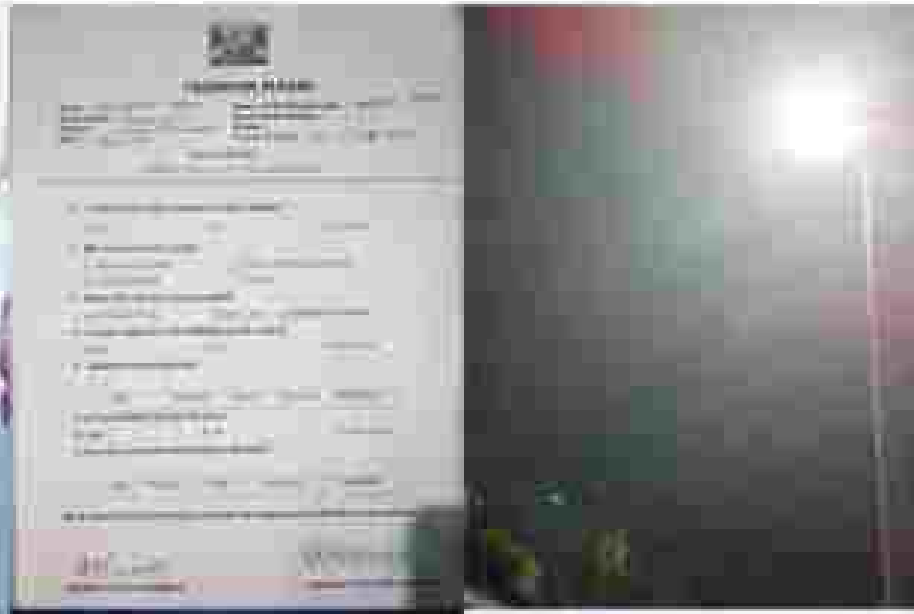
Bridging the critical gap during monsoon and linking 10 villages in Bomoloi Gram Panchayat to main Road towards Lapanga, State Highway towards Jharsuguda and Sambalpur

Constructed by
Aditya Aluminium Lapanga
Under
Corporate Social Responsibility

Water Positivity

- 5 Ponds constructed by Aditya . Painting and Nari Maryada Grih work in progress.

Nari Maryada Grih Construction and Branding in all 4 newly constructed/ renovated ponds



60 LED Street Lights installed in 6 wards of Lapanga GP

Pondoloi and Ludhapalli R&R painted with BALA painting

PM SMY

- 2 Awareness Session in Bomoloi and Gyandhara Organized for SHG Women
- PF Commissioner addressed the SHG women on PM SYM Scheme at Gyandhara. 59 Women enrolled till date

EXPLORING BAMBOO AS MSME

- Visited Laumal in Katarbagga GP
- 75 households - bamboo artisan village
- Sandeep Kapre presented bamboo products at Maharastra factory
- Villagers to be mobilized for residential training
- Village supported by SIDBI
- Bamboo char machine to cost 12 lakhs . Project may cost Rs. 20-25 lakhs

Karma Puja Celebration at Ludhapalli

Get Together
with
Parekhpada DPs

Shri Padma Shree Haldhar Nag Graced the Occasion Besides who's who of Rengali block

Nuakhai Bhetghat at Rengali

VISIT of IAS OFFICERS

Discussion on employee volunteerism with middle management during corporate CHRO Visit

Project SABUJ URJA- SOLAR LIGHTS

100 Solar Street Lights in 14 Villages in FY 2022-23

ADITYA ALUMINIUM, LAPANGA, SAMBALPUR		
Indent of Solar Street Light (CSR) 2021-22		
SL NO	Village	No of Street Light
1	Pitapali	10
2	Naikpada	3
3	Derbe	5
4	Khadtapali	4
5	Marupada	10
6	Talibahal	5
7	Badapada	2
8	Gumkarma	20
9	Ghichamura	10
10	Beumra	10
11	Pipalkani	10
12	Bhumhipali/ Bhatukatra	5
13	Gopkani	3
14	Kapilaspada	3
		100

- 50 Solar Lights for RR Colony Installed
- 100 Solar Lights installed in villages

Inaugurated Solar Street Light in Pitapali

Water Positivity: Environment Sustainability

- Constructed 1 New Ponds -Badapada
- Renovated 4 Ponds - Budapada, Rengoloi, Gumkarma, Lapanga
- Till date - 50 Ponds : 180576 m3 water conserved


Aditya Aluminium's efforts to resolve water crisis in Rengali

Plantation : Environment Sustainability

Green Belt Development

- 30000 mango sapling in FY '22
- 4500 in FY 20 and 18000 in FY 21 fruit bearing saplings planted
- 13,467 families benefitted in '21
- 5 orchard being developed
- 5000 in FY 20 and 5000 in FY 21 saplings leveraged from forest department

World Environment Day 2022 # Only One Earth

UNNATI : Building Lifestyle

Road – Peepalkani

Box Culvert – Bomoloi

Ladies Changing Room
Near Ponds

Temple – Pondoloi

Project Unnati – Building Lifestyle

Objective

- To build linkage infrastructure
- To build Common Property Resources
- To provide quality of life
- To facilitate 100 man-days engagement
- To create awareness on Government Schemes

Coverage

- 40 villages
- 10000 people

Stakeholders

- Community
- Government –RD, PWD, MIP, BDO, RWSS
- PRI – Sarpanch, Samiti Member

Outcome

- Increase in connectivity
- Increase in water availability
- Enhanced quality of life- Installation of solar street lights, community centre

ABGLP Visit- June ‘22













CSR NEWSLETTER

Golden Bird

CONGRATULATIONS

Golden Bird

Awards & Accolades

- Amity CSR Award 2022 for Project Saksham by Amity Business School Pune
- Golden Bird CSR Award 2022 for Project Vision Centre under Community Development Category by Golden Bird National award 2022

NEWSCLIPPINGS Q1 FY '23

Statesman: 9th April 22

Health Camp held at Aditya Aluminium on World Health Day

"WORLD ENVIRONMENT DAY" OBSERVED AT ADITYA ALUMINIUM

ଆଦିତ୍ୟ ଆଲୁମିନିୟମ ପକ୍ଷରୁ ରତୁସ୍ରାବ ସ୍ୱଚ୍ଛତା ଦିବସ

ଆଦିତ୍ୟ ଆଲୁମିନିୟମ ପକ୍ଷରୁ ଜଳବାହିନୀ ପ୍ରକଳ୍ପ ଶୁଭା

ଆଦିତ୍ୟ ଆଲୁମିନିୟମ ପକ୍ଷରୁ ଯୋଗ ଦିବସ

Ref: VCSPL/22/R-8493 **Date: 05.06.2022**

METEOROLOGICAL ANALYSIS REPORT MAY-2022

1. **Name of Industry** : **M/s Hindalco Industries Limited**
2. Data Collected By : **Unit-Aditya Aluminium, Lapanga, Sambalpur**
   Automatic Weather Monitoring Station

Date	Temperature(^{0}C)		Relative Humidity (%)		Wind Speed Km/h		Wind	Rain fall
	Max	Min	Max	Min	Max	Min	Direction	(mm)
1-May-2022	46	26	84	38	2.8	0.8	SW	0.0
2-May-2022	47	27	81	37	11.2	1.8	S	0.0
3-May-2022	48	25	78	38	9.2	2.7	SSE	0.0
4-May-2022	45	24	83	36	8.6	0.7	NNE	0.0
5-May-2022	46	26	88	35	9.4	1.3	SE	0.0
6-May-2022	46	27	75	34	11.2	0.5	SSE	0.0
7-May-2022	46	25	76	36	8.3	1.3	SE	0.0
8-May-2022	46	25	81	35	7.8	2.3	NNE	0.0
9-May-2022	43	26	80	34	9.3	1.2	NNE	0.0
10-May-2022	45	26	72	33	10.3	1.2	NE	0.0
11-May-2022	46	26	80	34	9.4	1.0	ESE	0.0
12-May-2022	45	27	81	33	8.4	0.9	NE	0.0
13-May-2022	45	27	78	32	12.2	2.2	SW	0.0
14-May-2022	49	28	82	34	9.8	3.3	NW	0.0
15-May-2022	49	29	78	35	6.8	7.2	SSE	0.5
16-May-2022	49	28	80	33	9.6	1.5	NW	0.0
17-May-2022	49	28	78	32	11.2	0.8	NNW	0.0
18-May-2022	48	29	82	36	9.8	1.7	SSW	0.0
19-May-2022	45	29	78	32	8.6	0.4	WNW	0.0
20-May-2022	47	29	82	34	8.3	1.2	SSE	0.0
21-May-2022	48	30	72	36	9.2	0.9	SE	0.0
22-May-2022	47	31	88	37	7.6	1.8	SW	0.0
23-May-2022	46	32	81	36	3.4	0.2	SW	0.0
24-May-2022	45	27	78	33	2.9	0.1	SSW	0.0
25-May-2022	44	27	77	36	9.2	7.4	S	0.0
26-May-2022	47	29	82	32	5.8	0.9	S	0.0
27-May-2022	44	30	72	35	7.6	1.8	SW	0.0
28-May-2022	46	31	81	35	7.4	0.8	SSE	0.0
29-May-2022	43	28	78	34	8.1	1.4	SW	0.0
30-May-2022	45	30	83	33	7.3	1.0	SE	0.0
31-May-2022	47	30	78	34	8.2	0.3	ESE	0.0

P. Pati
Prepared by:

Verified by:

Ref: VCSPL/22/R-8494 **Date: 06.09.2022**

METEOROLOGICAL ANALYSIS REPORT AUGUST-2022

1. **Name of Industry** : **M/s Hindalco Industries Limited**
2. Data Collected By : **Unit-Aditya Aluminium, Lapanga, Sambalpur**
   Automatic Weather Monitoring Station

Date	Temperature(^{0}C)		Relative Humidity (%)		Wind Speed Km/h		Wind	Rain fall
	Max	Min	Max	Min	Max	Min	Direction	(mm)
1-Aug-2022	34	27	71	31	3.8	0.6	WSW	1.4
2- Aug -2022	28	25	75	35	2.9	0.8	SW	2.8
3- Aug -2022	34	26	81	38	3.2	1.1	SE	0.0
4- Aug -2022	35	26	74	34	4.8	0.8	SSW	0.0
5- Aug -2022	34	27	78	39	7.8	1	NNE	0.0
6- Aug -2022	35	26	84	35	5.6	0.9	W	0.0
7- Aug -2022	35	27	75	28	8.6	1.2	SW	0.0
8- Aug -2022	31	26	78	26	9.1	0.3	SSW	0.0
9- Aug -2022	26	24	84	34	7.2	1.2	SW	6.8
10- Aug -2022	24	23	86	38	7.8	1.0	SSE	2.4
11- Aug -2022	27	23	82	37	8.3	0.7	SSE	0.0
12- Aug -2022	30	24	74	31	7.3	1.2	SE	0.0
13- Aug -2022	31	24	79	26	7.3	1.0	SSE	0.0
14- Aug -2022	30	25	84	39	8.2	0.8	NW	0.0
15- Aug -2022	30	24	82	34	6.2	1.2	SW	0.0
16- Aug -2022	30	23	86	38	9.8	0.3	SSW	0.0
17- Aug -2022	31	23	84	34	7.6	3.4	NNE	0.0
18- Aug -2022	31	23	78	38	5.5	1.5	NW	6.8
19- Aug -2022	30	23	75	36	5.6	0.9	SSW	2.7
20- Aug -2022	30	22	79	34	7.2	1.0	SSW	0.0
21- Aug -2022	29	23	74	38	8.2	0.8	ESE	0.0
22- Aug -2022	30	23	78	34	6.3	1.2	SE	0.0
23- Aug -2022	32	23	72	36	7.7	0.9	SSE	0.8
24- Aug -2022	29	25	76	37	8.6	1.2	SSW	3.2
25- Aug -2022	31	24	74	38	6.1	0.8	SSW	0.0
26- Aug -2022	31	25	71	32	5.3	0.0	SW	0.0
27- Aug -2022	33	25	78	35	11.2	1.1	WSW	0.0
28- Aug -2022	31	25	75	34	6.3	1.1	W	6.4
29- Aug -2022	33	26	72	38	7.2	0.9	SSW	0.0
30- Aug -2022	33	25	76	34	5.9	1.1	SW	0.0
31- Aug -2022	34	27	71	38	6.8	0.1	SW	0.0

P. Pati
Prepared by:

Verified by:

Ref: VCSPL/22/R-8473 **Date: 06.07.2022**

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-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} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_x (µg/m³)	O_3 (µg/m³)	CO (mg/m³)	NH_3 (µg/m³)	C_6H_6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2022	53.5	30.4	14.2	18.7	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2022	52.4	29.7	14.4	17.2	<4.0	0.2	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2022	48.5	27.6	15.9	19.3	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2022	49.2	28.2	15.4	18.8	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2022	47.7	27.1	15.1	18.4	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2022	46.1	26.1	15.6	18.5	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2022	51.2	28.7	14.9	17.7	<4.0	0.2	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2022	48.3	27.3	15.8	18.6	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2022	47.8	27.6	15.5	18.7	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2022	48.3	27.4	15.2	18.1	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2022	51.7	28.8	14.5	18.3	<4.0.	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2022	52.1	29.4	13.9	17.2	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2022	49.3	28.4	15.6	18.5	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2022	47.5	26.3	15.3	18.9	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2022	49.4	27.5	15.7	19.1	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2022	48.1	26.9	15.7	18.2	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2022	51.3	24.8	15.2	18.3	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2022	48.6	27.1	15.3	19.1	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2022	49.1	28.2	15.1	18.7	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2022	47.8	28.1	15.8	19.4	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2022	48.1	27.5	15.4	18.7	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2022	45.8	25.6	16.2	19.4	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2022	45.2	24.9	16.5	19.7	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2022	45.8	25.2	16.8	19.9	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2022	47.7	27.1	17.1	20.1	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2022	52.1	30.1	16.2	18.6	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	**100**	**60**	**80**	**80**	**100**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**	**--**
Average	**48.9**	**27.5**	**15.5**	**18.7**	**<4.0**	**0.2**	**<20.0**	**<4**	**<0.5**	**<2.5**	**<0.02**	**<1**	**<0.01**
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2< 4 µg/m³, NO_2< 9 µg/m³, O_3<4 µg/m³, Ni<0.01 ng/m³, As< 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, F<0.01µg/m³ CO-<0.1 mg/m³

P. Pati

Prepared by:

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Verified by:

Ref: VCSPL/22/R-8474 **Date: 06.07.2022**

AMBIENT AIR QUALITY MONITORING REPORT

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

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 ($\mu g/m^3$)
04.04.2022	48.2	27.3	8.4	17.4	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2022	49.7	28.1	9.8	19.2	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2022	50.1	27.8	9.6	18.5	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2022	48.7	27.4	8.3	11.6	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2022	49.1	27.6	9.8	17.7	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2022	48.9	27.4	9.7	19.2	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2022	49.3	27.6	9.3	18.2	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2022	49.5	28.1	9.8	19.3	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2022	48.9	27.8	8.2	17.2	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2022	48.4	27.1	9.6	18.5	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2022	49.2	27.7	10.3	19.4	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2022	47.6	26.9	8.6	17.1	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2022	49.2	27.6	9.6	18.5	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2022	50.3	28.5	8.4	17.2	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2022	49.7	28.1	8.3	17.7	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2022	48.4	27.1	9.6	18.6	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2022	50.3	29.6	9.2	19.1	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2022	49.1	27.5	9.4	18.2	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2022	45.7	25.7	9.5	18	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2022	47.9	27.1	9.2	18.7	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2022	48.5	27.6	8.5	17.2	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2022	46.3	26.2	9.6	17.6	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2022	46.5	26.4	9.2	18.7	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2022	47.2	26.7	9.8	18.8	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2022	49.4	27.6	9.3	17.9	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2022	48.3	26.9	8.9	16.3	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Quarterly Average	48.6	27.4	9.2	17.9	<4.0	0.2	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values:SO_2<-4 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$,O_3<-4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$CO-<0.1 mg/m^3

P. Pati
Prepared by

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Verified by: Jagmohan Nag

Ref: VCSPL/22/R-8475 **Date: 06.07.2022**

AMBIENT AIR QUALITY MONITORING REPORT

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

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 ($\mu g/m^3$)
04.04.2022	49.9	28.5	10.5	19.7	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2022	48.7	27.6	9.7	19.2	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2022	47.4	26.8	9.5	18.7	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2022	50.9	28.6	11.1	20.1	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2022	51.2	28.7	10.8	20.2	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2022	49.7	27.8	9.7	19.4	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2022	51.4	29.2	12.4	21.1	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2022	51.7	28.9	11.2	20.7	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2022	50.5	28.4	12.1	21.2	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2022	49.3	27.8	9.9	19.5	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2022	47.8	27.2	10.7	20.2	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2022	48.1	27.1	11.4	20.7	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2022	46.8	25.9	12.7	21.8	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2022	51.7	29.3	11.4	20.4	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2022	50.4	28.2	10.2	19.5	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2022	49.7	27.9	10.8	19.2	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2022	50.3	28.2	11.1	21.2	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2022	49.2	28.4	9.7	19.3	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2022	47.2	26.6	11.4	20.5	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2022	48.8	27.4	12.1	21.4	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2022	47.5	26.8	9.8	19.2	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2022	46.2	25.9	9.5	18.8	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2022	46.4	25.6	10.9	20.1	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2022	45.9	26.2	11.2	20.4	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2022	47.8	27.1	11.8	21.6	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2022	49.3	28.7	12.3	22.1	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Average	49.0	27.6	10.9	20.2	<4.0	0.3	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaike 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 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$,O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$CO-<0.1 mg/m^3

P. Pati

Prepared by:

Verified by:

Ref: VCSPL/22/R-8476 **Date: 06.07.2022**

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-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 ($\mu g/m^3$)
04.04.2022	51.7	29.4	15.1	24.4	<4	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2022	52.2	29.2	14.8	24.2	<4	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2022	51.4	28.9	16.3	25.4	<4	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2022	49.1	28.1	15.2	24.5	<4	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2022	50.2	28.4	16.6	25.7	4.9	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2022	52.4	29.7	17.3	26.9	5.3	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2022	51.8	28.9	15.6	24.5	5.4	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2022	50.1	28.4	16.2	25.1	5.3	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2022	49.7	27.9	17.8	26.8	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2022	51.5	28.8	15.7	24.7	5.6	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2022	52.1	29.1	14.9	24.4	5.2	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2022	49.7	28.2	16.2	25.2	<4	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2022	46.1	25.7	18.1	27.5	<4	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2022	50.7	28.3	16.5	25.4	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2022	48.7	27.2	15.2	24.2	5.1	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2022	49.1	27.5	17.4	26.5	5.1	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2022	48.9	26.9	16.8	25.3	6.1	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2022	48.8	27.4	15.8	25.3	5.3	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2022	45.2	25.3	17.6	26.8	5.4	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2022	46.8	26.1	16.3	25.6	5.3	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2022	47.3	26.5	15.7	25.2	<4	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2022	45.7	25.4	15.4	24.6	5.3	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2022	45.1	25.2	17.5	26.4	5.2	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2022	45.9	25.8	17.4	26.5	5.3	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2022	47.1	26.8	16.5	25.8	4.8	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2022	49.2	27.3	16.2	25.3	5.1	28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	–
Average	49.1	27.6	16.3	25.5	5.2	0.32	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values. SO_2< 4 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$ CO-<0.1 mg/m^3

P. Pati

Prepared by:

Verified by:

Ref: VCSPL/22/R-8477 **Date: 06.07.2022**

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium): Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-5 : Kapulas**
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 ($\mu g/m^3$)
04.04.2022	50.1	28.4	15.6	24.8	<4.0	0.15	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2022	52.4	29.4	15.8	25.1	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2022	51.7	28.9	16.6	25.8	<4.0	0.16	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2022	50.4	28.6	16.2	25.6	<4.0	0.14	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2022	51.9	29.1	16.4	25.2	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2022	49.6	28.2	16.8	26.3	<4.0	0.13	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2022	51.3	29.1	17.6	27.1	<4.0	<0.10	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2022	50.7	28.7	17.8	26.9	<4.0	0.11	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2022	49.2	27.5	18.4	27.5	<4.0	0.13	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2022	50.7	28.6	18.6	28.1	<4.0	0.15	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2022	49.8	28.3	19.5	28.6	<4.0	0.14	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2022	52.9	29.5	19.6	29.3	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2022	47.8	26.8	18.8	27.9	<4.0	0.13	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2022	51.9	29.2	18.4	27.7	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2022	49.1	27.5	18.6	27.6	<4.0	0.14	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2022	48.9	27.6	20.6	29.5	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2022	53.4	31.8	21.3	28.3	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2022	51.9	29.3	20.8	30.2	<4.0	0.15	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2022	50.4	28.4	21.6	30.7	<4.0	0.13	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2022	52.8	30.1	21.8	31.5	<4.0	0.11	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2022	53.1	29.7	22.4	31.4	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2022	49.5	27.9	22.6	31.7	<4.0	0.14	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2022	48.7	27.6	23.2	32.5	<4.0	0.11	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2022	48.4	27.3	23.8	33.4	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2022	51.8	29.2	23.4	32.7	<4.0	<0.10	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2022	55.2	32.7	22.8	30.7	<4.0	0.12	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	**100**	**60**	**80**	**80**	**100**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**	**--**
Average	**50.9**	**28.8**	**19.6**	**28.7**	**<4.0**	**0.1**	**<20.0**	**<4**	**<0.5**	**<2.5**	**<0.02**	**<1**	**<0.01**
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemiluminescent Method	NDIR Spectroscopy	Indophenol 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 $\mu g/m^3$, NO_x< 9 $\mu g/m^3$, O_3<4 $\mu g/m^3$, Ni<0.01 ng/m^3, As< 0.001 ng/m^3, C_6H_6<0.001 $\mu g/m^3$, BaP<0.002 ng/m^3, Pb<0.001 $\mu g/m^3$, F<0.01$\mu g/m^3$ CO-<0.1 mg/m^3

P. Pati
Prepared by:

Verified by:

Ref: VCSPL/22/R-8478 **Date: 06.07.2022**

AMBIENT AIR QUALITY MONITORING REPORT

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

Date	PARAMETERS												
	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NOx (µg/m3)	O3 (µg/m3)	CO (mg/m3)	NH3 (µg/m3)	C6H6 (µg/m3)	BaP (ng/m3)	Ni (ng/m3)	Pb (µg/m3)	As (ng/m3)	F (µg/m3)
04.04.2022	52.7	29.6	15.8	25.2	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2022	53.1	29.8	17.1	26.2	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2022	51.8	29.1	18.2	27.4	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2022	52.4	29.4	16.8	26.1	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2022	50.9	28.5	17.6	26.7	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2022	52.6	29.7	15.4	24.6	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2022	53.2	30.1	16.3	25.5	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2022	51.7	29.3	17.4	26.7	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2022	53.6	30.2	15.7	25.2	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2022	52.7	29.8	15.9	25.7	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2022	51.7	29.3	16.4	25.4	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2022	52.8	29.7	17.5	26.4	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2022	48.1	27.1	19.3	28.5	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2022	50.5	28.4	16.7	26.2	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2022	52.4	29.3	17.2	26.5	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2022	50.2	28.5	16.3	25.5	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2022	53.2	30.2	17.1	24.8	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2022	51.7	28.9	17.3	25.6	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2022	49.6	27.8	18.1	27.4	<4.0	0.19	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2022	53.1	29.7	16.8	26.3	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2022	52.9	30.1	15.7	25.2	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2022	49.1	27.9	16.4	25.7	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2022	46.9	26.4	17.8	27.3	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2022	47.5	26.9	18.2	27.5	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2022	49.3	27.8	16.9	26.5	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2022	50.8	28.2	17.3	15.8	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	–
Average	**51.3**	**28.9**	**17.0**	**26.2**	**<4.0**	**0.2**	**<20.0**	**<4**	**<0.5**	**<2.5**	**<0.02**	**<1**	**<0.01**
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatograp hy analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2< 4 µg/m³, NO_x< 9 µg/m³, O_3<4 µg/m³, Ni<0.01 ng/m³, As< 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, F<0.01µg/m³ CO-<0.1 mg/m³

P. Pati
Prepared by:

Verified by:

Ref: VCSPL/22/R-8479 **Date: 06.07.2022**

AMBIENT AIR QUALITY MONITORING REPORT

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium): Lapanga**
2. Sampling Location : **Monitoring Station No.- AAQMS-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												
	PM10 (µg/m³)	PM2.5 (µg/m³)	SO2 (µg/m³)	NOx (µg/m³)	O3 (µg/m³)	CO (mg/m³)	NH3 (µg/m³)	C6H6 (µg/m³)	BaP (ng/m³)	Ni (ng/m³)	Pb (µg/m³)	As (ng/m³)	F (µg/m³)
04.04.2022	57.5	32.3	12.1	21.4	<4.0	0.18	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2022	55.7	31.6	11.4	20.6	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2022	54.8	30.9	12.6	21.5	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2022	53.6	30.5	13.1	22.3	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2022	54.1	30.4	12.5	21.8	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2022	53.8	30.2	11.9	21.5	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2022	51.9	29.5	12.8	22.4	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2022	54.3	30.7	13.2	22.6	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2022	52.8	29.8	12.5	21.8	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2022	51.3	28.6	13.6	22.5	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2022	53.4	30.2	12.7	22.1	<4.0	0.23	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2022	54.1	30.7	13.6	22.7	<4.0	0.21	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2022	49.2	27.5	12.8	22.3	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2022	52.8	29.6	12.5	21.6	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2022	53.2	30.1	13.7	21.7	<4.0	0.24	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2022	51.7	28.9	12.4	22.9	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2022	50.8	27.9	13.1	23.4	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2022	52.4	29.4	12.7	21.7	<4.0	0.27	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2022	49.8	28.2	13.1	22.4	<4.0	0.28	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2022	51.6	28.7	12.6	21.4	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2022	52.1	29.3	11.9	21.4	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2022	50.2	28.1	13.2	22.6	<4.0	0.26	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2022	49.7	27.9	12.4	21.5	<4.0	0.31	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2022	52.5	29.6	12.7	22.3	<4.0	0.29	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2022	55.9	31.5	12.1	21.4	<4.0	0.22	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2022	57.3	32.8	12.4	22.3	<4.0	0.25	<20.0	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	100	60	80	80	100	4	400	05	01	20	1.0	06	--
Average	52.9	29.8	12.7	22.0	<4.0	0.3	<20.0	<4	<0.5	<2.5	<0.02	<1	<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/m³, NO_x< 9 µg/m³, O_3<4 µg/m³, Ni<0.01 ng/m³, As< 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, F<0.01µg/m³ CO-<0.1 mg/m³

P. Pati

Prepared by:

Verified by:

Ref: VCSPL/22/R-8480 **Date: 06.07.2022**

AMBIENT AIR QUALITY MONITORING REPORT

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

Date	PARAMETERS												
	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NOx (µg/m3)	O3 (µg/m3)	CO (mg/m3)	NH3 (µg/m3)	C6H6 (µg/m3)	BaP (ng/m3)	Ni (ng/m3)	Pb (µg/m3)	As (ng/m3)	F (µg/m3)
04.04.2022	58.4	33.1	17.3	26.5	7.2	0.31	22.4	<4	<0.5	<2.5	<0.02	<1	<0.01
07.04.2022	57.4	32.7	18.2	27.4	7.3	0.32	<20	<4	<0.5	<2.5	<0.02	<1	<0.01
11.04.2022	56.9	32.2	17.5	26.8	8.1	0.34	22.8	<4	<0.5	<2.5	<0.02	<1	<0.01
14.04.2022	56.7	31.9	16.6	26.1	7.3	0.33	21.6	<4	<0.5	<2.5	<0.02	<1	<0.01
18.04.2022	57.4	32.7	18.8	28.2	7.6	0.32	23.4	<4	<0.5	<2.5	<0.02	<1	<0.01
21.04.2022	59.5	33.8	19.2	28.4	7.4	0.35	23.8	<4	<0.5	<2.5	<0.02	<1	<0.01
25.04.2022	56.7	32.2	20.5	29.8	8.1	0.37	24.6	<4	<0.5	<2.5	<0.02	<1	<0.01
28.04.2022	55.8	31.7	21.1	30.1	7.9	0.36	22.8	<4	<0.5	<2.5	<0.02	<1	<0.01
02.05.2022	56.2	31.4	19.2	28.4	8.1	0.32	23.6	<4	<0.5	<2.5	<0.02	<1	<0.01
05.05.2022	57.5	32.6	19.7	29.2	7.6	0.31	24.8	<4	<0.5	<2.5	<0.02	<1	<0.01
09.05.2022	59.1	33.2	18.4	27.5	7.2	0.35	<20	<4	<0.5	<2.5	<0.02	<1	<0.01
12.05.2022	62.4	35.5	17.9	27.3	8.1	0.36	<20	<4	<0.5	<2.5	<0.02	<1	<0.01
16.05.2022	57.2	32.4	18.4	27.7	7.6	0.38	24.3	<4	<0.5	<2.5	<0.02	<1	<0.01
19.05.2022	59.6	33.7	17.6	26.8	8.4	0.34	23.8	<4	<0.5	<2.5	<0.02	<1	<0.01
23.05.2022	59.5	33.2	18.5	27.7	7.6	0.32	23.8	<4	<0.5	<2.5	<0.02	<1	<0.01
26.05.2022	56.7	32.1	17.3	26.6	7.2	0.33	22.6	<4	<0.5	<2.5	<0.02	<1	<0.01
30.05.2022	56.3	33.1	18.2	26.3	8.1	0.34	23.8	<4	<0.5	<2.5	<0.02	<1	<0.01
02.06.2022	54.2	30.4	18.2	27.5	8.2	0.32	24.9	<4	<0.5	<2.5	<0.02	<1	<0.01
06.06.2022	52.7	29.8	18.6	27.9	7.8	0.33	<20	<4	<0.5	<2.5	<0.02	<1	<0.01
09.06.2022	53.5	29.9	19.3	28.5	6.8	0.35	23.8	<4	<0.5	<2.5	<0.02	<1	<0.01
13.06.2022	54.1	30.7	20.4	29.6	7.2	0.36	22.6	<4	<0.5	<2.5	<0.02	<1	<0.01
16.06.2022	50.5	28.8	19.7	29.1	7.1	0.37	24.8	<4	<0.5	<2.5	<0.02	<1	<0.01
20.06.2022	51.6	29.1	18.9	28.2	7.7	0.32	26.3	<4	<0.5	<2.5	<0.02	<1	<0.01
23.06.2022	51.9	29.5	20.7	30.1	6.8	0.34	23.5	<4	<0.5	<2.5	<0.02	<1	<0.01
27.06.2022	56.3	31.9	21.2	30.6	7.5	0.31	22.8	<4	<0.5	<2.5	<0.02	<1	<0.01
30.06.2022	58.2	32.4	22.1	28.6	8.1	0.33	21.8	<4	<0.5	<2.5	<0.02	<1	<0.01
NAAQ Standard	**100**	**60**	**80**	**80**	**100**	**4**	**400**	**05**	**01**	**20**	**1.0**	**06**	**--**
Average	**56.4**	**31.9**	**19.0**	**28.1**	**7.6**	**0.3**	**23.6**	**<4**	**<0.5**	**<2.5**	**<0.02**	**<1**	**<0.01**
Testing method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatograp hy analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	Zirconium SPADNS Method

BDL Values: SO_2<4 µg/m³, NO_x< 9 µg/m³, O_3<4 µg/m³, Ni<0.01 ng/m³, As< 0.001 ng/m³, C_6H_6<0.001 µg/m³, BaP<0.002 ng/m³, Pb<0.001 µg/m³, F<0.01µg/m³CO-<0.1 mg/m³

Prepared by: P. Pati

Verified by:

Ref: VCSPL/22/R-8482 **Date: 06.07.2022**

SURFACE WATER QUALITY ANALYSIS REPORT MAY-2022

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 : 16.05.2022,17.05.2022
4. Date of analysis : 17.05.2022 TO 22.05.2022
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°C	APHA 4500H^+ B	--	6.0-9.0	7.28	7.15	7.68	7.61	7.68
2	Colour	APHA 2120 B. C	Hazen	300	<1.0	<1.0	<1.0	<1.0	<1.0
3	Taste	APHA 2160 C	--	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	APHA 2150 B	--	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	APHA 2130 B	NTU	--	4.7	3.9	5.2	4.7	5.5
6	Total Dissolved Solids	APHA 2540 C	mg/l	1500	148	138	132	122	131
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	70	68	66	64	64
8	Total Alkalinity	APHA 2320 B	mg/l	--	52	62	56	48	52
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	20.8	21.6	19.2	20.8	19.2
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	4.4	3.4	4.4	2.9	3.9
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	--	BDL	BDL	BDL	BDL	BDL
12	Boron (as B)	APHA 4500B, B	mg/l	--	<0.1	<0.01	<0.01	<0.01	<0.01
13	Chloride (as Cl)	APHA 4500Cl B	mg/l	600	27	26	28	29	32
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	11.8	34.6	17.3	52.3	21.6
15	Fluoride (as F)	APHA 4500F C	mg/l	1.5	0.31	0.22	0.21	0.34	0.28
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	1.28	1.5	1.2	1.4	1.1
17	Sodium as Na	APHA3500-Na	mg/l	--	8.8	8.9	9.3	8.8	9.2
18	Potassium as K	APHA 3500-K	mg/l	--	2.3	2.6	2.7	2.36	2.3
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
20	Cyanide (as CN)	APHA 4500 CN C,D	mg/l	0.05	BDL	BDL	BDL	BDL	BDL
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	<0.01	<0.01	<0.01	<0.01	<0.01
23	Arsenic (as As)	APHA 3114 B	mg/l	0.2	<0.004	<0.004	<0.004	<0.004	<0.004
24	Copper (as Cu)	APHA 3111 B.C	mg/l	1.5	<0.02	<0.02	<0.02	<0.02	<0.02
25	Lead (as Pb)	APHA 3111 B.C	mg/l	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.03	<0.03	<0.03	<0.03	<0.03
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.5	0.05	0.12	0.04	0.14	0.05
28	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
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	<0.01	<0.01	<0.01	<0.01	<0.01
31	Aluminium as(Al)	APHA 3500Al B	mg/l	--	<0.1	<0.1	<0.1	<0.1	<0.1
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	--	<0.004	<0.004	<0.004	<0.004	<0.004
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	210	280	280	320	280

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

P. Pati
Prepared by:

Verified by:

Ref: VCSPL/22/R-8483 **Date: 06.07.2022**

SURFACE WATER QUALITY ANALYSIS REPORT MAY-2022

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 Pond; **SW-10:** Sanamal village Pond
3. Date of sampling : 16.05.2022, 17.05.2022
4. Date of analysis : 18.05.2022 TO 24.05.2022
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^{0}C	APHA 4500H$^+$ B	--	6.0-9.0	7.29	7.82	7.33	7.28	7.16
2	Colour	APHA 2120 B, C	Hazen	300	<1.0	<1.0	<1.0	<1.0	<1.0
3	Taste	APHA 2160 C	--	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Odour	APHA 2150 B	--	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	APHA 2130 B	NTU	--	5.8	6.4	6.3	4.8	4.2
7	Total Dissolved Solids	APHA 2540 C	mg/l	1500	139	138	151	108	123
8	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	--	72	70	74	58	64
9	Total Alkalinity	APHA 2320 B	mg/l	--	54	58	56	68	66
10	Calcium (as Ca)	APHA 3500Ca B	mg/l	--	20.0	23.2	22.4	18.4	20.8
11	Magnesium (as Mg)	APHA 3500Mg B	mg/l	--	5.4	2.9	3.9	2.9	2.9
12	Residual, free Chlorine	APHA 4500Cl, B	mg/l	--	BDL	BDL	BDL	BDL	BDL
13	Boron (as B)	APHA 4500B, B	mg/l	--	<0.01	<0.01	<0.01	<0.01	<0.01
14	Chloride (as Cl)	APHA 4500Cl$^-$ B	mg/l	600	38	32	30	61	58
15	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	400	22.1	18.4	12.4	28.6	25.1
16	Fluoride (as F)	APHA 4500F$^-$ C	mg/l	1.5	0.32	0.37	0.39	0.38	0.36
17	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	50	2.9	2.4	2.3	3.1	3.4
18	Sodium as Na	APHA 3500-K	mg/l	--	9.8	9.1	9.2	9.3	8.8
19	Potassium as K	APHA3500-Na	mg/l	--	2.9	2.7	2.8	3.1	2.8
20	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
21	Cyanide (as CN)	APHA 4500 CN$^-$ C,D	mg/l	0.05	BDL	BDL	BDL	BDL	BDL
22	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	1.0	<0.2	<0.2	<0.2	<0.2	<0.2
23	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Arsenic (as As)	APHA 3114 B	mg/l	0.2	<0.004	<0.004	<0.004	<0.004	<0.004
25	Copper (as Cu)	APHA 3111 B,C	mg/l	1.5	<0.02	<0.02	<0.02	<0.02	<0.02
26	Lead (as Pb)	APHA 3111 B,C	mg/l	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
27	Manganese (as Mn)	APHA 3500Mn B	mg/l	--	<0.03	<0.03	<0.03	<0.03	<0.03
28	Iron (as Fe)	APHA 3500Fe, B	mg/l	0.5	0.04	0.06	0.06	0.11	0.13
29	Chromium (as Cr^{+6})	APHA 3500Cr B	mg/l	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
30	Selenium (as Se)	APHA 3114 B	mg/l	0.05	<0.001	<0.001	<0.001	<0.001	<0.001
31	Zinc (as Zn)	APHA 3111 B,C	mg/l	15	<0.01	<0.01	<0.01	<0.01	<0.01
32	Aluminium as(Al)	APHA 3500Al B	mg/l	--	<0.1	<0.1	<0.1	<0.1	<0.1
33	Mercury (as Hg)	APHA 3500 Hg	mg/l	--	<0.004	<0.004	<0.004	<0.004	<0.004
34	Mineral Oil	APHA 5220 B	mg/l	--	<0.001	<0.001	<0.001	<0.001	<0.001
35	Pesticides	APHA 6630 B,C	mg/l	--	Absent	Absent	Absent	Absent	Absent
36	E.Coli	APHA 9221-F	MPN/ 100 ml	--	Absent	Absent	Absent	Absent	Absent
37	Total Coliforms	APHA 9221-B	MPN/ 100 ml	5000	280	350	220	330	400

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

Prepared by: P. Pati

Verified by:

Ref: VCSPL/22/R-8495 **Date: 07.06.2022**

GROUND WATER LEVEL MONITORING REPORT MAY-2022

1. **Name of Industry**	:	**M/s Hindalco Industries Limited (Unit-Aditya Aluminium), Sambalpur**
2. Sampling Location	:	**GW-1:**Near Ash Pond, **GW-2:**Near Proposed Pond, **GW-3:**Near RR Colony. **GW-4:** Ash Pond Area Bore well
3. Date of Sampling	:	23.05.2022
4. Monitoring By	:	VCSPL Representative

SL No.	Date of sampling	Name of Location	Unit	Water Level
01	23.05.2022	GW1	Mbgl	1.2
02	23.05.2022	GW2	Mbgl	7.9
03	23.05.2022	GW3	Mbgl	1.8
04	23.05.2022	GW4	Mbgl	4.9

Prepared By: **Verified By:**

Ref: VCSPL/22/R-8481 **Date: 06.07.2022**

NOISE MONITORING REPORT MAY 2022

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

Daytime Noise monitoring results (Noise Level in dB (A) MAY 22

TIME (6.00AM to 9.00PM)	N1:Gumkarma (09.05.2022)	N2:Ghichamura (10.05.2022)	N3:Bomaloi (12.05.2022)	N4:Tileimal (16.05.2022)	N5:Thelkoli (18.05.2022)	N6:Khadiapali (19.05.2022)	N7:Kapilas (26.05.2022)	N8:Phulchanghal (30.05.2022)
06.00am	45.8	46.3	45.8	46.3	48.3	50.3	45.8	48.3
07.00am	46.3	46.8	46.9	46.5	49.6	51.8	46.2	48.3
08.00am	48.2	47.3	48.3	47.3	50.2	51.6	48.9	49.6
09.00am	50.6	48.2	49.8	49.8	51.8	52.8	48.3	50.8
10.00am	52.8	51.6	52.8	49.2	52.3	53.4	49.6	51.6
11.00am	49.6	52.3	55.6	50.8	53.8	52.8	50.4	52.8
12.00 noon	48.3	51.8	52.8	52.6	54.6	55.6	50.6	55.9
01.00pm	52.3	54.6	54.9	54.7	55.2	56.8	52.8	55.4
02.00pm	50.3	52.8	53.9	55.3	55.8	58.4	53.4	56.3
03.00pm	48.6	53.6	58.9	54.8	56.8	59.6	54.6	54.8
04.00pm	50.8	55.8	56.7	56.7	53.8	58.7	55.8	55.9
05.00pm	49.6	52.6	55.8	57.3	56.7	56.2	56.3	56.3
06.00pm	51.3	53.4	54.3	52.8	55.8	57.2	52.8	52.8
07.00pm	52.8	52.8	56.7	53.4	52.3	55.8	49.3	48.6
08.00pm	49.3	50.8	51.8	51.3	51.6	52.6	48.5	52.4
09.00pm	52.4	49.3	48.3	50.4	50.9	51.8	47.6	49.3
Average	**49.9**	**51.3**	**52.7**	**51.8**	**53.1**	**54.7**	**50.7**	**52.4**
Standard as per CPCB	55							

Night time Noise monitoring results (Noise Level in dB (A) MAY 22

TIME (10.00PM to 5.00AM)	N1:Gumkarma (09.05.2022)	N2:Ghichamura (10.05.2022)	N3:Bomaloi (12.05.2022)	N4:Tileimal (16.05.2022)	N5:Thelkoli (18.05.2022)	N6:Khadiapali (19.05.2022)	N7:Kapilas (26.05.2022)	N8:Phulchanghal (30.05.2022)
10.00pm	47.2	48.6	46.8	46.3	46.8	48.6	45.8	47.3
11.00pm	48.3	46.3	45.8	44.5	45.8	46.5	44.6	45.8
12.00 Midnight	46.5	42.8	44.3	42.8	44.3	44.2	44.2	45.3
01.00am	43.5	41.8	42.8	41.3	44.8	43.8	40.2	43.9
02.00am	42.6	41.6	42.6	41.8	44.9	43.2	40.8	42.3
03.00am	42.4	41.3	42.8	41.7	43.5	43.6	40.6	41.8
04.00am	41.8	42.5	43.5	42.3	44.2	44.8	41.8	42.9
05.00am	43.8	43.4	44.6	43.8	44.3	44.3	42.3	44.2
Average	**44.5**	**43.5**	**44.2**	**43.1**	**44.8**	**44.9**	**42.5**	**44.2**
Standard as per CPCB	45							

P. Pati
Prepared By

Verified By

Ref: VCSPL/22/R-8484 **Date: 06.07.2022**

GROUND WATER QUALITY ANALYSIS REPORT MAY-2022

1. Name of Industry : **M/sHindalco 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 : 16.05.2022
4. Date of analysis : 17.05.2022 TO 22.05.2022
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	Permissible Limit	GW-1	GW-2	GW-3	GW-4
1	pH Value at 25°C	APHA 4500H+ B	--	6.5-8.5	No Relaxation	7.32	7.24	7.36	7.41
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
5	Turbidity	APHA 2130 B	NTU	1	5	<1.0	<1.0	<1.0	<1.0
6	Total Dissolved Solids	APHA 2540 C	mg/l	500	2000	242	281	208	211
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	600	89	79	80	78
8	Total Alkalinity	APHA 2320 B	mg/l	200	600	82	78	92	85
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	30.4	31.2	26.4	27.2
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	5.4	5.9	5.4	4.4
11	Residual, free Chlorine	APHA 4500Cl, B	mg/l	0.2	1	ND	ND	ND	ND
12	Boron (as B)	APHA 4500B, B	mg/l	2.4	No Relaxation	<0.1	<0.1	<0.1	<0.1
13	Chloride (as Cl)	APHA 4500Cl- B	mg/l	250	1000	25.4	26.3	27.4	25.3
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	4.2	4.9	5.3	5.8
15	Fluoride (as F)	APHA 4500F C	mg/l	1.0	1.5	0.21	0.28	0.26	0.34
16	Nitrate (as NO_3)	APHA 4500 NO_3 E	mg/l	45	No Relaxation	2.8	3.2	3.3	2.8
17	Sodium as Na	APHA3500-Na	mg/l	--	--	15.4	14.3	15.3	13.8
18	Potassium as K	APHA 3500-K	mg/l	--	--	3.6	3.2	3.9	4.2
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	0.002	<0.001	<0.001	<0.001	<0.001
20	Cyanide (as CN)	APHA 4500 CN- C,D	mg/l	0.05	No Relaxation	<0.01	<0.01	<0.01	<0.01
21	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	1.0	<0.2	<0.2	<0.2	<0.2
22	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	No Relaxation	<0.01	<0.01	<0.01	<0.01
23	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.004	<0.004	<0.004	<0.004
24	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.02	<0.02	<0.02	<0.02
25	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.02	<0.02	<0.02	<0.02
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.03	<0.03	<0.03	<0.03
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	1	No Relaxation	0.14	0.13	0.18	0.14
28	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	No Relaxation	<0.05	<0.05	<0.05	<0.05
29	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
30	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	15	<0.01	<0.01	<0.01	<0.01
31	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	0.2	<0.1	<0.1	<0.1	<0.1
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.004	<0.004	<0.004	<0.004
33	Mineral Oil	APHA 5220 B	mg/l	0.5	No Relaxation	<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	Shall not be detectable in any 100 ml sample	--	Absent	Absent	Absent	Absent
36	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.

P. Pati
Prepared By

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Fagmohan Nag
Verified By

Ref: VCSPL/22/R-8485 **Date: 06.07.2022**

GROUND WATER QUALITY ANALYSIS REPORT MAY-2022

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:** Gumkarma Village, **GW-8:** Chalatikra Village
3. Date of sampling : 16.05.2022, 17.05.2022
4. Date of analysis : 18.05.2022 TO 23.05.2022
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	Permissible Limit	GW-5	GW-6	GW-7	GW-8
1	pH Value at 25°C	APHA 4500H+ B	–	6.5-8.5	No Relaxation	7.28	7.33	7.42	7.29
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	APHA2510-B	µs/cm	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5	Turbidity	APHA 2130 B	NTU	1	5	<1.0	<1.0	<1.0	<1.0
6	Total Dissolved Solids	APHA 2540 C	mg/l	500	2000	234	203	214	218
7	Total Hardness (as $CaCO_3$)	APHA 2340 C	mg/l	200	600	80	81	79	82
8	Total Alkalinity	APHA 2320 B	mg/l	200	600	86	94	97	89
9	Calcium (as Ca)	APHA 3500Ca B	mg/l	75	200	29.6	26.4	28.8	29.6
10	Magnesium (as Mg)	APHA 3500Mg B	mg/l	30	100	3.9	4.4	5.9	6.3
11	Residual, free Chlorine	APHA 4500Cl B	mg/l	0.2	1	ND	ND	ND	ND
12	Boron (as B)	APHA 4500B, B	mg/l	2.4	No Relaxation	<0.1	<0.1	<0.1	<0.1
13	Chloride (as Cl)	APHA 4500Cl B	mg/l	250	1000	25.9	26.4	26.9	24.8
14	Sulphate (as SO_4)	APHA 4500 SO_4^{2-} E	mg/l	200	400	4.9	5.8	4.7	6.2
15	Fluoride (as F)	APHA 4500F C	mg/l	1.0	1.5	0.28	0.32	0.29	0.37
16	Nitrate (as NO_3)	APHA 4500 NO_3^- E	mg/l	45	No Relaxation	2.9	3.2	2.8	3.1
17	Sodium as Na	APHA3500-Na	mg/l	–	–	14.3	11.3	13.2	13.8
18	Potassium as K	APHA 3500-K	mg/l	–	–	3.8	6.4	6.2	4.9
19	Phenolic Compounds (as C_6H_5OH)	APHA 5530 B,D	mg/l	0.001	0.002	<0.001	<0.001	<0.001	<0.001
20	Cyanide (as CN)	APHA 4500 CN- C,D	mg/l	0.05	No Relaxation	<0.01	<0.01	<0.01	<0.01
21	Anionic Detergents (as MBAS)	APHA 5540 C	mg/l	0.2	1.0	<0.2	<0.2	<0.2	<0.2
22	Cadmium (as Cd)	APHA 3111 B,C	mg/l	0.003	No Relaxation	<0.01	<0.01	<0.01	<0.01
23	Arsenic (as As)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.004	<0.004	<0.004	<0.004
24	Copper (as Cu)	APHA 3111 B,C	mg/l	0.05	1.5	<0.02	<0.02	<0.02	<0.02
25	Lead (as Pb)	APHA 3111 B,C	mg/l	0.01	No Relaxation	<0.02	<0.02	<0.02	<0.02
26	Manganese (as Mn)	APHA 3500Mn B	mg/l	0.1	0.3	<0.03	<0.03	<0.03	<0.03
27	Iron (as Fe)	APHA 3500Fe, B	mg/l	1	No Relaxation	0.12	0.19	0.15	0.17
28	Chromium (as Cr)	APHA 3500Cr B	mg/l	0.05	No Relaxation	<0.05	<0.05	<0.05	<0.05
29	Selenium (as Se)	APHA 3114 B	mg/l	0.01	No Relaxation	<0.001	<0.001	<0.001	<0.001
30	Zinc (as Zn)	APHA 3111 B,C	mg/l	5	15	<0.01	<0.01	<0.01	<0.01
31	Aluminium as(Al)	APHA 3500Al B	mg/l	0.03	0.2	<0.1	<0.1	<0.1	<0.1
32	Mercury (as Hg)	APHA 3500 Hg	mg/l	0.001	No Relaxation	<0.004	<0.004	<0.004	<0.004
33	Mineral Oil	APHA 5220 B	mg/l	0.5	No Relaxation	<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	Shall not be detectable in any 100 ml sample	–	Absent	Absent	Absent	Absent
36	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.

P. Pati
Prepared By

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Jagmohan Nag
Verified By

Ref: VCSPL/22/R-8490 **Date: 06.06.2022**

SOIL QUALITY ANALYSIS REPORT MAY 2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.05.2022
3. Sampling Location : **S-1:** Project Site; **S-2:** Thelkoloi; **S-3:** Ghichamura; **S-4:** Lapanga; **S-5:** Bamloi
4. Date of Analysis : 26.05.2022 T0 02.06.2022
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	--	7.08	6.92	7.28	7.14	7.33
2	Conductivity	--	131	124	125	152	131
3	Soil Texture	--	Sandy Loamy	Clay Loamy	Clay Loamy	Sandy Loamy	Sandy Loamy
4	Sand	%	52.3	21.3	22.8	51.2	48.3
5	Silt	%	15.9	25.6	27.1	20.5	22.4
6	Clay	%	31.8	53.1	50.1	28.3	29.3
7	Bulk Density	gm/cc	1.82	1.37	1.61	1.48	1.64
8	Exchangeable Calcium as Ca	%	34.8	32.6	38.6	32.8	41.6
9	Exchangeable Magnesium as Mg	%	51.8	55.3	52.8	56.3	57.3
10	Available Sodium as Na	%	0.022	0.034	0.028	0.041	0.034
11	Available Potassium as K	%	0.058	0.061	0.058	0.051	0.054
12	Available phosphorous as P	%	0.028	0.027	0.025	0.022	0.038
13	Available Nitrogen as N	%	0.34	0.31	0.25	0.36	0.31
14	Organic Matter	%	3.8	6.4	4.2	3.3	4.8
15	Organic Carbon as OC	%	1.81	1.42	1.56	1.68	1.72
16	Water soluble Chlorides as Cl	%	0.28	0.38	0.26	0.22	0.32
17	Water soluble Sulphates as SO_4	%	0.18	0.16	0.28	0.24	0.19
18	Sodium Absorption Ratio	%	0.00012	0.00014	0.00016	0.00013	0.00018
19	Aluminium as Al	%	0.078	0.051	0.49	0.075	0.068
20	Total Iron as Fe	%	0.0028	0.0022	0.0028	0.0033	0.0021
21	Manganese as Mn	%	0.0002	0.00021	0.00029	0.00028	0.00022
22	Boron as B	%	0.00036	0.00028	0.00029	0.00031	0.00028
23	Zinc as Zn	%	6.2	5.8	7.8	6.9	7.7
24	Silica as SiO_2	%	0.051	0.058	0.051	0.048	0.044
25	Ferric Oxide as Fe_2O_3	%	30.6	31.4	31.8	32.6	31.6
26	Calcium Oxide as CaO	%	25.8	26.3	23.8	24.6	22.8
27	Magnesium Oxide as MgO	%	0.00005	0.0001	0.00021	0.00025	0.00023
28	Aluminium Oxide as Al_2O_3	%	0.041	0.028	0.061	0.034	0.033
29	Iron Oxide as FeO	%	0.0051	0.0023	0.0016	0.0025	0.0044
30	Manganese Oxide as MnO	%	0.0512	0.0441	0.0428	0.0512	0.052
31	Potassium Oxide as K_2O	%	0.0086	0.0084	0.0081	0.0079	0.0098
32	Phosphorus Oxide as P_2O_5	%	0.00062	0.00041	0.00032	0.00043	0.00058
33	Fluoride as F	%	7.08	6.92	7.28	7.14	7.33

ND: Not Detected.

Prepared by: Verified by:

Ref: VCSPL/22/R-8491 **Date: 06.06.2022**

SOIL QUALITY ANALYSIS REPORT MAY 2022

1. Name of Industry : **M/s Hindalco Industries Ltd (Unit- Aditya Aluminium); Lapanga**
2. Date of Sampling : 25.05.2022
3. Sampling Location : **S-6:** Tileimal; **S-7:** Jangala; **S-8:** Gurupali; **S-9**: Gumkarama; **S-10:** Bhadarpali.
4. Date of Analysis : 26.05.2022 TO 02.06.2022
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^{0}C	--	7.38	7.24	6.796	7.38	7.34
2	Conductivity	--	135	122	138	124	115
3	Soil Texture	--	Clay Loamy	Sandy Loamy	Sandy Loamy	Sandy Loamy	Clay Loamy
4	Sand	%	22.3	45.2	43.6	48.2	25.6
5	Silt	%	15.3	17	18.2	17.2	19.1
6	Clay	%	62.4	37.8	38.2	34.6	55.3
7	Bulk Density	gm/cc	1.68	1.74	1.34	1.56	1.82
8	Exchangeable Calcium as Ca	%	42.6	43.8	42.8	48.3	41.8
9	Exchangeable Magnesium as Mg	%	52.4	51.8	57.3	62.4	58.9
10	Available Sodium as Na	%	0.028	0.029	0.031	0.036	0.028
11	Available Potassium as K	%	0.048	0.049	0.052	0.048	0.054
12	Available phosphorous as P	%	0.026	0.021	0.023	0.024	0.032
13	Available Nitrogen as N	%	0.34	0.36	0.38	0.25	0.22
14	Organic Matter	%	4.2	3.8	4.1	3.9	3.8
15	Organic Carbon as OC	%	1.54	1.76	1.78	1.77	1.28
16	Water soluble Chlorides as Cl	%	0.38	0.34	0.33	0.41	0.39
17	Water soluble Sulphates as SO_4	%	0.23	0.28	0.19	0.21	0.19
18	Sodium Absorption Ratio	%	0.00014	0.00013	0.00022	0.00021	0.00014
19	Aluminium as Al	%	0.061	0.058	0.066	0.051	0.051
20	Total Iron as Fe	%	0.0024	0.003	0.0028	0.0021	0.0032
21	Manganese as Mn	%	0.00022	0.00022	0.00029	0.00035	0.00022
22	Boron as B	%	0.00027	0.00029	0.00026	0.00018	0.00032
23	Zinc as Zn	%	6.9	7.6	6.8	7.1	6.9
24	Silica as SiO_2	%	0.031	0.038	0.036	0.047	0.042
25	Ferric Oxide as Fe_2O_3	%	29.6	31.4	30.8	31.6	32.3
26	Calcium Oxide as CaO	%	22.9	29.6	29.6	20.8	25.6
27	Magnesium Oxide as MgO	%	0.00041	0.00037	0.00024	0.00023	0.00027
28	Aluminium Oxide as Al_2O_3	%	0.0186	0.0181	0.0185	0.021	0.0212
29	Iron Oxide as FeO	%	0.0025	0.0022	0.0022	0.0011	0.0022
30	Manganese Oxide as MnO	%	0.0411	0.0426	0.051	0.0381	0.0483
31	Potassium Oxide as K_2O	%	0.0082	0.0091	0.095	0.0094	0.0081
32	Phosphorus Oxide as P_2O_5	%	0.00046	0.00038	0.00025	0.00031	0.00024
33	Fluoride as F	%	7.38	7.24	6.79	7.38	7.34

Prepared by: **Verified by:**

Ref: VCSPL/22/R-8486 **Date: 06.07.2022**

FORAGE FLUORIDE ANALYSIS REPORT MAY 2022

1	Name of Industry	:	**M/s Hindalco Industries Ltd, (Unit-Aditya Aluminium); Lapanga**
2	Date of Sampling	:	25.05.2022 & 26.05.2022
3	Date of Analysis	:	**27.05.2022** TO 29.05.2022
4	Name of the Sample	:	Vegetation Sample
5	Sample Collected By	:	VCSPL Representative

Date of Sampling	Name of the Location	Type of Species	Scientific Name	Method of Analysis	Result (PPM)
25.05.2022	Bomaloi	Bela Tree, Rice Plant	*Aegle marmelo, Oryza Sativa*	AOAC 975.04	1.8
25.05.2022	Gurupali	Duba Ghasa, Neem Tree	*Cynodon dactylo, Azadirachta Indica*	AOAC 975.04	1.4
26.05.2022	Plant Site	Sisu Tree, Duba Ghasa	*Dalbergia sissoo, Cynodon dactylon*	AOAC 975.04	2.8
25.05.2022	Thelkolai	Bamboo Tree, Rice Plant	*Pongame oil tree, Cynodon dactylon*	AOAC 975.04	1.7
26.05.2022	Gumukarma	Bamboo Tree, Rice Plant	*Bambusoideae, Oryza Sativa*	AOAC 975.04	2.1
26.05.2022	Ghichamura	Baulakoli Tree, Rice Plant	*Minusops elengi, Oryza Sativa*	AOAC 975.04	1.2
26.05.2022	Tileimal	Rice Plant, Duba Ghasa	*Oryza Sativa, Cynodon dactylon*	AOAC 975.04	1.3
26.05.2022	Lapanga	Neem tree, Rice Plant	*Azadirachta indica, Oryza Sativa*	AOAC 975.04	2.1
25.05.2022	Jangala	Duba Ghasa, Rice Plant	*Cynodon dactylon, Oryza Sativa*	AOAC 975.04	1.1
25.05.2022	Bhadrapali	Karanj Tree, Duba Grass, Rice Plant	*Pongame oil tree, Cynodon dactylon, Oryza Sativa*	AOAC 975.04	1.2

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Jagannath Nag
Verified by:

Ref: VCSPL/22/R-8492 **Date: 07.09.2022**

FORAGE FLUORIDE ANALYSIS REPORT AUGUST 2022

1	Name of Industry	:	**M/s Hindalco Industries Ltd, (Unit-Aditya Aluminium); Lapanga**
2	Date of Sampling	:	24.08.2022 & 25.08.2022
3	Date of Analysis	:	26.08.2022 TO 30.08.2022
4	Name of the Sample	:	Vegetation Sample
5	Sample Collected By	:	VCSPL Representative

Date of Sampling	Name of the Location	Type of Species	Scientific Name	Method of Analysis	Result (PPM)
24.08.2022	Bomaloi	Bela Tree, Rice Plant	*Aegle marmelo, Oryza Sativa*	AOAC 975.04	1.6
24.08.2022	Gurupali	Duba Ghasa, Neem Tree	*Cynodon dactylo, Azadirachta Indica*	AOAC 975.04	1.8
25.08.2022	Plant Site	Sisu Tree, Duba Ghasa	*Dalbergia sissoo, Cynodon dactylon*	AOAC 975.04	2.3
25.08.2022	Thelkolai	Bamboo Tree, Rice Plant	*Pongame oil tree, Cynodon dactylon*	AOAC 975.04	1.6
24.08.2022	Gumukarma	Bamboo Tree, Rice Plant	*Bambusoideae, Oryza Sativa*	AOAC 975.04	2.4
24.08.2022	Ghichamura	Baulakoli Tree, Rice Plant	*Minusops elengi, Oryza Sativa*	AOAC 975.04	1.5
25.08.2022	Tileimal	Rice Plant, Duba Ghasa	*Oryza Sativa, Cynodon dactylon*	AOAC 975.04	1.2
25.08.2022	Lapanga	Neem tree, Rice Plant	*Azadirachta indica, Oryza Sativa*	AOAC 975.04	2.4
25.08.2022	Jangala	Duba Ghasa, Rice Plant	*Cynodon dactylon, Oryza Sativa*	AOAC 975.04	1.2
24.08.2022	Bhadrapali	Karanj Tree, Rice Plant	*Pongame oil tree, Oryza Sativa*	AOAC 975.04	1.4

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Jagannath Nayak
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Ref: VCSPL/22/R-8488 **Date: 06.06.2022**

ASH ANALYSIS REPORT-MAY 2022

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 : 23.05.2022
4. Date of Analysis : 24.05.2022 TO 02.06.2022
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameters	Unit	Analysis Results FA-01	Unit	Analysis Results FA-01
Chemical Analysis					
1	Na_2O	%	**0.21**	mg/kg	**2100**
2	MgO	%	**0.92**	mg/kg	**9200**
3	Al_2O_3	%	**21.8**	mg/kg	**218000**
4	SiO_2	%	**51.3**	mg/kg	**513000**
5	P_2O_5	%	**0.023**	mg/kg	**230**
6	SO_3	%	**2.3**	mg/kg	**23000**
7	K_2O	%	**0.81**	mg/kg	**8100**
8	CaO	%	**4.3**	mg/kg	**43000**
9	TiO_2	%		mg/kg	---
10	MnO	%	**0.21**	mg/kg	**2100**
11	Fe_2O_3	%	**9.3**	mg/kg	**93000**
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	%	**0.0162**	mg/kg	**162**
4	Chromium as Cr	%	**< 0.002**	mg/kg	**< 0.002**
5	Vanadium as V	%	**<0.001**	mg/kg	**<0.001**
6	Iron as Fe	%	**5.384**	mg/kg	**53840**
7	Cobalt as Co	%	**<0.001**	mg/kg	**<0.001**
8	Copper as Cu	%	**0.068**	mg/kg	**680**
9	Nickel as Ni	%	**0.088**	mg/kg	**880**
10	Zinc as Zn	%	**0.0534**	mg/kg	**534**
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	**<0.001**	mg/kg	**<0.001**

P. Pati
Prepare by:

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

VISIONTEK CONSULTANCY SERVICES PVT. LTD.

Jagmohan Majhi
Verified by:

Ref: VCSPL/22/R-8489 **Date: 06.06.2022**

ASH ANALYSIS REPORT-MAY 2022

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 : 23.05.2022
4. Date of Analysis : 24.05.2021 TO 02.06.2022
5. Sample Collected By : VCSPL Representative in presence of Aditya Aluminium Representative.

Sl. No.	Parameters	Unit	Analysis Results BA-01	Unit	Analysis Results BA-01
Chemical Analysis					
1	Na_2O	%	0.24	mg/kg	2400
2	MgO	%	2.7	mg/kg	27000
3	Al_2O_3	%	26.4	mg/kg	264000
4	SiO_2	%	48.2	mg/kg	482000
5	P_2O_5	%	0.025	mg/kg	250
6	SO_3	%	11.2	mg/kg	112000
7	K_2O	%	0.94	mg/kg	9400
8	CaO	%	31.8	mg/kg	318000
9	TiO_2	%	0	mg/kg	---
10	MnO	%	0.34	mg/kg	3400
11	Fe_2O_3	%	7.5	mg/kg	75000
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	%	0.0155	mg/kg	155
4	Chromium as Cr	%	< 0.002	mg/kg	< 0.002
5	Vanadium as V	%	<0.001	mg/kg	<0.001
6	Iron as Fe	%	6.2	mg/kg	62000
7	Cobalt as Co	%	<0.001	mg/kg	<0.001
8	Copper as Cu	%	0.028	mg/kg	280
9	Nickel as Ni	%	0.091	mg/kg	910
10	Zinc as Zn	%	0.0672	mg/kg	672
11	Strontium as Sr	%	--	mg/kg	--
12	Barium as Ba	%	<0.001	mg/kg	<0.001

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