



## Power

Ref: APL/APML/EMD/MOEF/EC/282/05/24

Date: 22/05/2024.

To,

**Additional Principal Chief Conservator of Forest  
Ministry of Environment, Forest & Climate Change  
Regional Office (WCZ), Ground Floor, East Wing,  
New Secretariat Building, Civil Line,  
Nagpur-440001 (MH).**

Sub: **Six Monthly Compliance Status report of Environmental Clearance of Tiroda Thermal Power Plant for Phase- I & II along with Environmental Monitoring reports- Reg.**

Ref: Environmental Clearance letter J 13011/4/2008-IA.II (T) dated 29.05.2008 & EC

Amendment letter no. J-13011/4/2008 -IA II (T) dated: 21/03/2012.

Letter No. J-13012/81/2008-1A-II (T) dated - 22.04.2010 & EC Amendment Letter no. J-13012/81/2008 - IA II (T) dated: 30/03/2012 & 13/03/2014. EC Transfer from Adani Power Maharashtra Ltd. to Adani Power Ltd. dated 24.04.2023.

Dear Sir,

With reference to above subject, please find enclosed herewith Six-Monthly Environmental Clearance (EC) compliance status report along with environmental monitoring results like Ambient Air Quality, Stack Emission, Water Quality, Noise level, Soil, CAAQM, CEMS data, Met data, Green belt development and CSR reports etc. for the period of **October'2023 to March'2024** in soft (e-mail).

This is for your kind information & record please.

Thanking you

**Yours faithfully,**  
for **Adani Power Limited, Tiroda**

**(Santosh Kumar Singh)**  
**Head - AESG**

Encl: **As above**

**CC: Member Secretary  
Central Pollution control Board**  
Parivesh Bhavan, East Arjun Nagar  
Kendriya Paryavaran Bhawan  
New Delhi- 110 032.

The Regional Officer,  
**Maharashtra Pollution Control Board**  
Regional Office, 5<sup>th</sup> Floor  
Udyog Bhawan, Civil Lines, Nagpur - 440001

Member Secretary,  
**Maharashtra Pollution Control Board**  
Kalpataru Point, 2<sup>nd</sup> - 4<sup>th</sup> floor, **Mumbai-22**

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Adani Corporate House  
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# SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCES (EC)

## 3300 (5x660) MW TIRODA THERMAL POWER PLANT (PHASE I & II)

At

TIRORA, DISTRICT GONDIA  
MAHARASHTRA

*Submitted to:*

Integrated Regional Office, Nagpur  
Ministry of Environment, Forest & Climate Change,  
Central Pollution Control Board, New Delhi &  
Maharashtra Pollution Control Board, Mumbai and  
Regional Office, Nagpur



*Submitted By:*

Environment Management Department

**Adani Power Limited**

Plot NO: A -1, Tirora Growth Centre  
MIDC, Tirora, Gondia – 441911 (M.H)

**PERIOD: October'2023 – March'2024**

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## 1.0 Introduction

Tiroda Thermal Power Plant of Adani Power Limited has established 3300 (5x660) MW Coal-based Thermal Power Plant at Tiroda, District Gondia in Maharashtra in two phases as below:

Phase I: 2 x 660 MW

Phase II: 3 x 660 MW

The plant site is located at Tiroda Growth Centre of MIDC (Maharashtra Industrial Development Corporation) developed area near Tiroda, District Gondia in Maharashtra. The Villages, Gumadhawra, Khairbodi, Chikhali, Churdi, Bhiwapur, Kachewani and Mendipur, surround the site. The power plant is based on supercritical, energy efficient & environment friendly technology.

Tiroda Thermal Power Plant has been granted Environmental Clearances from Ministry of Environment & Forest, Consent to Establish & Consent to Operate from Maharashtra Pollution Control Board for phase I & II (Unit 1, 2, 3, 4 & 5).

The Hon'ble NCLT vide its order dated 08.02.2023 sanctioning the scheme of amalgamation of Adani power Maharashtra Limited with Adani Power Limited. Subsequently, Environment Clearance for Phase - I & II were transferred from Adani Power Maharashtra Limited to Adani Power Limited vide F. No. J-13012/81/2008-IA.II (T) dated; 24<sup>th</sup> April - 2023. In compliance with statutory requirements, environmental quality monitoring is being done regularly at locations suggested by Sub- Regional Officer, MPCB, Bhandara. Also, three nos. of Continuous Ambient Air Quality Monitoring System have been established in three different locations inside the plant boundary as per wind rose and suggested by SRO, MPCB Bhandara. Also, 3<sup>rd</sup> party Lab (M/s Enviro Analyst & Engineers Pvt. Ltd, Mumbai) carried out environmental monitoring & analysis for the power plant.

Point wise compliance status of Environmental Clearance for Phase - I & II is furnished herewith.



# Compliance Status on Environmental Clearance

## Phase-I: (2x660 MW) Tiroda Thermal Power Plant

Vide Letter No. J-13011/4/2008-1A-II (T) DATED 29.05.2008 &  
Subsequent amendment vide Letter no. J-13011/4/2008-1A-II (T) DATED 21.03.2012 &  
Transferred EC from APML to APL on 24.04.2023.

Sr. No.	Conditions	Compliance Status
(i)	The total land requirement for the project shall be restricted to 210 ha.	Complied. The project has undergone expansion. The total area has changed and the same has been approved by MoEF&CC. The total area required for all two phases are 565.84 ha.
(ii)	Sulphur and ash content in the coal to be used in the project shall not exceed 0.5 % and 29.57 % respectively.	Being Complied. Sulphur and ash content in the coal is being maintained.
(iii)	A bi-flue stack of 275 m height shall be provided with continuous online monitoring equipment's for SO <sub>x</sub> , NO <sub>x</sub> and Particulate matter. Exit velocity of flue gases shall not be less than 22 m/sec.	Complied Bi-flue Stack containing two flues of phase-I of 275 meters is installed with On-line monitoring equipment for SO <sub>2</sub> , NO <sub>x</sub> & PM. Exit velocity of flue gas are more than 22m/sec.
(iv)	High efficiency Electrostatic Precipitator (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm <sup>3</sup> .	Complied Highly efficient Electro-Static Precipitators (ESPs) with designed efficiency of 99.97% have been installed for each boiler to meet particulate emission less than 50 mg/Nm <sup>3</sup> . The monitoring report is enclosed as <b>Annexure – I &amp; II</b> .
(v)	Space provision shall be kept for retrofitting of FGD, if required at a later date.	Noted. Space for installation of FGDs has been provided since construction stage. As per MoEFCC' Notification dated 05.09.2022, Tiroda TPP is falling under Category "C" Non-retiring TPP & the timelines for compliance of SO <sub>2</sub> emission is up to December'2026. Accordingly, the work is under progress & shall be completed within the schedule.
(vi)	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.	Complied Adequate air pollution control measures such as dust extraction system (bag filters followed by Cyclone) in the coal crusher and coal conveying transfer points (JNTs). Rain gun type dust suppression system in coal yard and dry fog type dust suppression system in belt conveyor have been provided.
(vii)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided and its utilization to the maximum extent shall be ensured. 100% fly ash utilization shall be ensured from 5 <sup>th</sup> year onward. Unutilized fly ash shall be disposed-off in the ash pond in the form of High Concentrated Slurry and the bottom ash in conventional slurry mode.	Complied. 6 Nos. of silos have been established for collection of dry fly ash for end users. Railway Rake/bulkers loading facility developed under the silos for bulk ash dispatch to cement manufacturing industries. Please Refer <b>Annexure – V</b> for detail of ash utilization & effort made to maximize ash utilization.

(viii)	Ash pond shall be lined with HDPE lining. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached. Guard drains shall be provided all along the periphery of the ash dyke to avoid contamination of soil and surface water in case of run-off.	Complied. Well-designed ash dykes with LDPE lining have been established as per the guidelines of CPCB & SPCB. Adequate safety measures have been taken for any unforeseen incidents. Guard drains & guard pond established.
(ix)	Water requirement shall not exceed 36 MCM/year. No ground water shall be extracted for this power project, including during construction phase.	Complied. Water withdrawal from the river is well within the allocated quantity of water during reporting period. Comprehensive water audit has been conducted by "Academy of Water Technology & Environment Management" Kolkata in technical collaboration Indian Institute of Social Welfare & Business Management, Kolkata. Average specific water consumption is 2.28 m <sup>3</sup> /MWh for the period from October'2023 – March'2024.
(x)	Closed cycle cooling system with cooling towers shall be provided. Cycle of concentration (COC) of at least 5.5 shall be adopted and the effluents treated as per the prescribed norms.	Being complied. Average CoC is 5.71 during the period.
(xi)	The treated effluents confirming to the prescribed standards shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon for storm water. Arrangements shall be made that effluents and storm water do not get mixed.	All the effluent treated adequately & is being reused within the plant. The concept of "Zero Liquid Discharge" implemented except during monsoon period. Separate drainage network established for storm water.
(xii)	A sewage treatment plant shall be provided, and the treated sewage shall be used for raising green belt/plantation.	Complied 2x120 KL/D of Sewage Treatment Plants have been installed and are under operational. Treated water being reused in green belt development.
(xiii)	Rainwater harvesting should be adopted. Central Ground water Authority / Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.	Rainwater Harvesting study was carried out & report submitted to Regional Director, Central Ground Water Board, Nagpur & Member Secretary-Central Ground Water Authority, New Delhi. We have constructed 3 Nos. of rainwater harvesting structures having capacity of 12m <sup>3</sup> and 01 rainwater harvesting pond of capacity 394m <sup>3</sup> within plant to store the rainwater for further uses. Around 551 m <sup>3</sup> of Rainfall water was captured/stored during the FY 2023-24. Rainwater harvesting details enclosed as <b>Annexure – VI</b> .
(xiv)	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Details of these measures along with location plant layout shall be submitted to Ministry as well as to the regional Office of the Ministry at Bhopal.	Adequate safety Control measures have been implemented to take preventive control measures. Fire hydrant and rain gun type water sprinklers installed in the coal yard. Details of control measures along with locations in the plant layout already submitted.
(xv)	Storage facilities for liquid fuel such as LDO to be used as auxiliary fuel in the project shall	Adequate storage & handling practices of LDO implemented as approved by Chief Controller of

	be made in the plant area where risk is minimum to the storage facilities. Adequate assessment of risk management shall be made in the Disaster management Plan for the same. Mock drills shall be conducted regularly as plan. Necessary clearance, as may be applicable to such storage under HSM Rules shall be obtained.	Explosive, Nagpur. Presently Low Sulphur containing LDO is being used. Disaster Management Plan and On-site Emergency Plan have been prepared. Mock drills are being conducted periodically to check effectiveness of control measures & preparedness of response team.
(xvi)	Regular monitoring of ground water in and around the ash pond area shall be carried out, records maintained, and periodic reports shall be furnished to the Regional Office of this Ministry.	Regular monitoring of ground water was carried out around ash pond area. Monitoring results are being submitted to Regional Officer, MoEF&CC and MPCB regularly. Last monitoring report enclosed as <b>Annexure – I.</b>
(xvii)	A green belt of adequate width and density shall be developed around the plant periphery covering at least 69.64 ha of project area preferably with local species.	Complied, Green belts with local species have been developed on 258 Ha. of land in around the plant periphery, along the internal roads etc. so far 7,13,182 saplings were planted up to March - 24 including 1,39,746 saplings planted during FY 2023-24 in plant area. Around 3,22,194 sq.m area is also covered under the Green Carpet. An in-house nursery has been established to cater our sapling's requirements. The survival rate of trees maintained at more than 90%. Greenbelt details enclosed as <b>Annexure – VII.</b> In addition, we have also planted 7647 trees as part of our CSR efforts in neighboring villages in July to December'2023.
(xviii)	A plan for conservation of fauna reported in the study area shall be prepared in consultation with State Forests and Wildlife Department within 3 months and shall be implemented effectively.	Complied. Conservation plan of Fauna in the study area was prepared in consultation with State Forest dept. and submitted to Wildlife warden, Govt. of Maharashtra with compliance report. The Biodiversity Policy has been formulated to protect the local Flora & fauna. We are the member of India Business & Biodiversity Initiative (IBBI). Various migratory birds & other species have been observed inside the plant premises. A detailed study on Biodiversity is being carried out by reputed agency.
(xix)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	First Aid and sanitation facilities have been provided for the drivers and contract workers during the construction phase.
(xx)	Leq. of Noise levels emanating from gas and steam turbines shall be limited to 75 dBA. For people working in the high noise area, requisite personal protective equipment like earplugs/ear-muffs etc. shall be provided. Workers engaged in noisy areas such as steam & gas turbines etc. shall be periodically examined to maintain audiometric records and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	Necessary actions have been taken care to maintain Ambient Noise levels within 75dB(A) during plant operation. The personal protective equipments have been provided to workers & employees working in noisy areas. Noise level monitoring is being carried out regularly and reports submitted to MoEF&CC, CPCB & MPCB. A complete medical checkup with audiometric test of workers & employees are being carried regularly.

(xxi)	Regular monitoring of ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , SPM and RSPM shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports (six monthly) shall be submitted to the Regional Office of this Ministry.	Complied. Regular monitoring of PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> & NO <sub>x</sub> as per the revised NAAQS-2009. Monitoring reports are being submitted to the MPCB monthly. Ground level concentrations of specified parameters are well within the limits. Monitoring stations have been established in consultation with the MPCB. Please refer <b>Annexure –I &amp; II</b> .
(xxii)	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	Complied. Copy of the same already submitted to your good office.
(xxiii)	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Complied Environment Management Dept. is in place lead by General Manager & supported by qualified Environment Engineers, Chemist, Horticulturist and Ash utilization team for implementation & compliance of environmental standards. <ul style="list-style-type: none"> <li>• Environmental Management System (Standard - ISO 14001:2015) implemented under Integrated Management System.</li> <li>• NABL Accredited Environmental Laboratory (ISO/IEC 17025:2017) established for monitoring &amp; analysis of Ambient Air quality, Water/ wastewater, Stack emission etc.</li> </ul>
(xxiv)	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry/Regional Office /CPCB/SPCB.	Complied. Six monthly compliance reports are being submitted regularly to MoEF&CC, CPCB & MPCB. The last compliance report was submitted vide our letter No. APL/Tiroda/EMD/MoEF&CC/EC/213/11/23. dated 27.11.2023. Compliance reports are also available on <a href="http://www.adanipower.com">www.adanipower.com</a> .
(xxv)	Regional Office of the Ministry of Environment & Forests located at Bhopal will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be	Complied. EIA & EMP reports have been submitted to the Regional Office of MoEF&CC. Additional information is also being submitted as required.

	forwarded to the Regional Office for their use during monitoring.																																		
(xxvi)	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These costs shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	<p>A separate fund has been allocated for Environmental Protection. The budgetary provisions for 2023–2024 are as follows: -</p> <table border="1"> <thead> <tr> <th>Sl.</th><th>Particulars</th><th>Cost (in Lac.)</th></tr> </thead> <tbody> <tr> <td>1</td><td>Pollution control equipment O &amp;M</td><td>786</td></tr> <tr> <td>2</td><td>Pollution Monitoring, Study &amp; analysis</td><td>277</td></tr> <tr> <td>3</td><td>Green belt Development</td><td>278</td></tr> <tr> <td>4</td><td>Rural Development/CSR</td><td>185</td></tr> <tr> <td>5</td><td>Legal &amp; consent fees</td><td>388</td></tr> <tr> <td>6</td><td>Training &amp; Awareness</td><td>4</td></tr> <tr> <td>7</td><td>Waste Management</td><td>15000</td></tr> <tr> <td>8</td><td>Establishment of Ash Utilization Research Park</td><td>67</td></tr> <tr> <td>9</td><td>Energy Conservation Initiatives</td><td>150</td></tr> <tr> <td></td><td><b>Total</b></td><td><b>17,135</b></td></tr> </tbody> </table>	Sl.	Particulars	Cost (in Lac.)	1	Pollution control equipment O &M	786	2	Pollution Monitoring, Study & analysis	277	3	Green belt Development	278	4	Rural Development/CSR	185	5	Legal & consent fees	388	6	Training & Awareness	4	7	Waste Management	15000	8	Establishment of Ash Utilization Research Park	67	9	Energy Conservation Initiatives	150		<b>Total</b>	<b>17,135</b>
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(xxvii)	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Complied.																																	
(xxviii)	Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry at Bhopal /the CPCB/the SPCB who would be monitoring the compliance of environmental status.	Noted. Full cooperation always extended.																																	
(xxix)	The project proponent shall upload the status of compliance of the conditions stipulated in the environmental clearance issued vide this Ministry's letter of even no. dated 30.03.2007, in its website and uploaded periodically and simultaneously send the same by e-mail to the Regional Office of the Ministry of Environment and Forests.	Complied EC Compliance report is available on company web portal <a href="http://www.adanipower.com">www.adanipower.com</a> . Copy of the same has also been submitted to the regional office of MoEF&CC, CPCB & MPPCB by emails.																																	
(xxx)	Criteria pollutant levels including NOx, RSPM, (PM10 & PM2.5), Sox (from Stack & ambient air) shall be regularly monitored and results displayed in your website and also at the main gate of the power plant.	Complied. Online monitoring data of Ambient air quality including PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> & NO <sub>x</sub> . and Stack monitoring of PM, NO <sub>x</sub> , SO <sub>2</sub> . being displayed at main Gate of the Plant.																																	

# Compliance Status of Environmental Clearance

## Phase- II (3X660) MW Tiroda Thermal Power Plant

Vide Letter No. J-13011/4/2008-1A-II (T) DATED 29.05.2008 &  
Subsequent amendment vide Letter no. J-13011/4/2008-1A-II (T) DATED 21.03.2012 &  
EC Transfer from APML to APL on dated 24.04.2023.

Sr. No.	Conditions	Compliance Status
(i)	Only one unit of 1x660 MW shall be run on 100% domestic coal for which coal linkage from SECL is available and the other two units of 2x660 MW shall be run purely on imported coal, as per details in Para 2.	MoEFCC vide letter no. J-13012/81/2008-1A-II (T) dated 13.03.2014 has amended the condition for change of source of coal to indigenous Coal from subsidiary companies of "Coal India Limited" in place of Imported coal.
(ii)	Separate stacking arrangement shall be made for indigenous and imported coal.	Not Required as domestic coal is being used as per amended EC dated 13.03.2014.
(iii)	In case source of fuel supply is to be changed at a later stage for the 2 x 660 MW the project proponent shall come back to the ministry as the appraisal presently was done based on imported coal for 2 x 660 MW unit.	Complied.  Obtained required amendment on 13.03.2014.
<b>A</b>	<b>Water &amp; Wastewater Management</b>	
(iv)	No ground water shall be extracted for use in operation of the power plant even in lean season	Being Complied. We have already obtained permission from Water Resource Department (WRD) Govt. of Maharashtra for withdrawal of 70 MCM water for both phases from Wainganga River. The above quantity is adequate to meet the plant's requirement including lean season. Average specific water consumption is 2.28 m <sup>3</sup> /MWh for the period from October'2023 – March'2024.
(v)	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up / operation of the power plant	Complied There is no water body within plant premises.
(vi)	Minimum required environmental flow suggested by the Competent Authority of the State Govt. shall be maintained in the Channel / Rivers (as applicable) even in lean season.	Not Applicable Water allocation is from Dhapewada Irrigation Project, constructed and maintained by Vidarbha Irrigation Development Corporation. APML has no role in regulating the water flow downstream.
(vii)	Hydro-geological study of the area shall be reviewed annually and results submitted to the Ministry and concerned agency in the State Govt. In case adverse impact on ground water quality and quantity is observed, immediate mitigating steps to contain any adverse impact on ground water shall be undertaken	Complied, Ground water quality is being monitored in and around the plant premises. Ground water level in nearby villages is also being monitored to know the seasonal fluctuations. CSIR – NEERI, Nagpur engaged to carry out Hydro-geological study & review from 2019 – 2022.
(viii)	Closed cycle cooling system with induced draft cooling towers shall be provided and CoC of at least 5.5 shall be adopted.	Complied Average CoC is 5.71 during the period.
(ix)	The treated effluent conforming to the prescribed standards only shall be re-circulated and reused within the plant. There	Effluent treatment plant installed within the plant and treated water is being utilize/reuse within the

	shall be no discharge outside the plant boundary except during monsoon. Arrangements shall be made that effluent and storm water do not get mixed.	premises to meet "Zero Liquid Discharge". Separate drains provided for trade effluent & storm water.
(x)	Effluent from the desalination plant shall be first treated in a guard pond before discharged, if applicable.	Not Applicable The desalination plant is not required
(xi)	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.	Complied. Sewage Treatment Plants have been installed and treated water is being reused for green belt development.
(xii)	Rainwater harvesting should be adopted. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.	Rainwater Harvesting study carried out & report submitted to Regional Director, Central Ground Water Board, Nagpur & Member Secretary, Central Ground Water Board, New Delhi. We have constructed rainwater harvesting structures having capacity 12 m <sup>3</sup> and 01 rainwater harvesting pond of capacity 394 m <sup>3</sup> . Around 551m <sup>3</sup> of Rainfall water was captured/stored during year 2023-24. Please refer to <b>Annexure-VI</b>
(xiii)	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 the 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.	Being Complied. Regular monitoring of ground water quality including heavy metals is being carried out regularly in and around the project area. Piezometric wells are established around the ash pond area. Records are being maintained and the same are submitted to the Regional Office of the Ministry at Nagpur. Please Refer <b>Annexure - I</b> .
<b>B</b>	<b>Air Pollution Control</b>	
(xiv)	Provision for installation of FGD shall be provided.	Noted. Space for installation of FGDs have been provided since construction stage. As per MoEF&CC' Notification dated 05.09.2022, Tiroda TPP is falling under Category "C" Non-retiring TPP & the timelines for compliance of SO <sub>2</sub> emission is up to December 2026. Accordingly, the work is under progress & will be installed within the schedule.
(xv)	High Efficiency Electrostatic Precipitator (ESPs) shall be installed to ensure that particulate emission does not exceed 50mg/ Nm <sup>3</sup> .	ESP designed efficiency of 99.97% (ESPs of 10 fields) installed for each boiler to meet permissible norm for particulate emission of less than 50 mg/Nm <sup>3</sup> .
(xvi)	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.	Complied. Adequate air pollution control measures such as dust extraction system (Cyclone followed by bag filters) in coal crushers and rain gun type dust suppression system in coal yard and dry fog type dust suppression system in the belt conveyor with insertable dust collector at transfer points have

		been installed to meet particulate matter emission within the norms.
(xvii)	Green Belt consisting of 3 tiers plantations of native species around plant and at least 100 m width shall be raised. Wherever 100 m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to the ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 70%.	Complied. Green belts with local species have been developed on 258 Ha. of land in around the plant periphery, along the internal roads etc. so far 7,13,182 saplings were planted up to March - 24 including 1,39,746 saplings planted during FY 2023-24 in plant area. Around 3,22,194 sq.m area is also covered under the Green Carpet. An in-house nursery has been established to cater our sapling's requirements. The survival rate of trees maintained at more than 90%. Greenbelt details enclosed as <b>Annexure - VII</b> . In addition, we have also planted 7,647 trees as part of our CSR efforts in neighboring villages in July to Dec'2023.
(xviii)	Noise level emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75dBA. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressor etc. shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	Necessary actions have been taken care to maintain ambient noise levels within 75 dB(A) during plant operation. The working personals provided with appropriate personal protective equipment and periodic audiometric check-up is being carried out and records are being maintained. Monitoring report is enclosed as <b>Annexure - I &amp; II</b> .
<b>C</b>	<b>Fly Ash Management</b>	
(xix)	Utilization of 100% Fly Ash generated shall be made from 4 <sup>th</sup> year of operation of the plant. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.	Being Complied Fly ash is being utilised as per the Fly Ash Notification 2021 and amendments. We have extended facilities to maximise utilisation of ash. Monthly Ash generation and utilisation status has been updated in the CPCB Coal Ash Portal, and a six-monthly report has also been submitted to CEA. Please refer <b>Annexure- V</b> .
(xx)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed-off in low lying area.	Complied. 6 Nos of silos have been constructed for collection of dry fly ash for downstream user. Railway Rake/bulkers loading facility developed under silos for bulk ash dispatched to user, cement making units. Un-utilized ash disposed-off in ash pond through HCSD mode. Heavy metals are being analyzed in Bottom Ash and Ash Pond effluent, and reports enclosed as <b>Annexure-VIII</b> .
(xxi)	Ash pond shall be lined with HDP/LDP 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.	Complied. Well-designed Ash dyke with HDPE lining have been established as per guidelines of MoEF&CC, and CPCB.



		We have stabilized/reclaimed Ash Dyke-2 and developed greenbelt/ plantation. Please refer the photographs in <b>Annexure -VII</b>
(xxii)	For disposal of Bottom Ash in abandoned mines (if proposed to be undertaken) it shall be ensured that the Bottom and sides of the mined-out area are adequately lined with clay before Bottom Ash is filled up. The project proponent shall inform the State Pollution Control Board well in advance before undertaking the activity.	Being Followed. We will inform Maharashtra Pollution Control Board well in advance. If any scope for.
(xxiii)	Regular monitoring of ground water level 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 quality including heavy metals is being carried out in and around the project area. Piezometric wells are established around the ash pond. Records are maintained and the same being submitted along with compliance report. Please refer <b>Annexure - I</b> . We have engaged CSIR – NEERI, Nagpur to carry out Fly Ash Leachability Study since 2019 up to 2022.
<b>D</b>	<b>Disaster Management</b>	
(xxiv)	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to Ministry as well as to the regional Office of the Ministry.	Adequate safety team with safety control measures is available in the plant site to take preventive control measures. Fire hydrant and rain gun type water sprinklers were established in the coal yard. Details of control measures and location within the plant layout have already been submitted to your good office.
(xxv)	Storage facilities for auxiliary liquid fuel such as LDO and / HFO/LSHS shall be made in the plant area in consultation with Department of Explosive, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster management plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	Adequate storage & handling practices of LDO implemented as approved by Chief Controller of Explosive, Nagpur. Presently Low Sulphur containing LDO is being used. Disaster Management Plan and On-site Emergency Plan have been prepared. Mock drills are being conducted periodically to check effectiveness of control measures & preparedness of response team.
<b>E</b>	<b>CSR/RCR Plan</b>	
(xxvi)	A good action plan for R & R (if applicable) with package for the project affected persons be submitted and implemented as per prevalent R&R policy within three months from the date of the issue of this letter.	Approved R&R plan implemented. Indian Institute of Social Welfare and Business Management (IISWBM), Kolkata carried out R&R audit. The study report has been already submitted along with the EC compliance report.
(xxvii)	An amount of Rs. 66.0 Crores shall be earmarked as one-time capital cost for CSR programme. Subsequently a recurring expenditure of Rs. 13.20 Crore per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.	Under the CSR program Rs. 66.157 Crores has been incurred (including Rs. 2.706 crores during FY 2022-23) and the budget provision of Rs 1.85 Crores for 2023-24 under Community Health promotion & facilitation, Sustainable Livelihood, Creating Rural Infrastructure, Promotion of Education, Skilled development etc. During COVID 19 pandemic, supported to civil hospital by supply & installation of Oxygen Plant, others medical material and

		vaccination drives. CSR Progress report enclosed as <b>Annexure – IX.</b>
(xxviii)	<p>While identifying CSR programme the company shall conduct need-based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruits bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.</p> <p>In addition, a special scheme for upliftment of SC/ST's and marginalized population in the study area out of CSR programme shall be formulated and submitted to the Ministry within six months along with firm commitment of implementation. The scheme shall have an in – built monitoring mechanism.</p>	<p>Need Base Assessment Study for CSR programs prepared, and report already submitted to MoEF&amp;CC.</p> <p>Need Base plan implemented in nearby villages including individuals who are economically weak to undertake some economic activity that would help them to achieve sustainable livelihood and financial independence.</p> <p>We have established a Skill Development Center (ASDC) for skill development of SC/ST and marginalized populations from Gondia and Bhandara districts. As on date, a total of 3,409 candidates have undergone training at our facility. Among these candidates, 1516 were trained in domain-specific trades, while 2,620 received training in non-domain trades. It is noteworthy that all our trained candidates have achieved a 100% pass rate. Furthermore, the placement success rate for candidates trained in domain-specific trades consistently exceeds 90%. ASDC report is enclosed as <b>Annexure- X.</b></p>
<b>F</b>	<b>General</b>	
(xxix)	Additional soil for leveling of the proposed site shall be generated within the site (to the extent possible) so that natural drainage system of the area is protected and improved.	<p>Complied</p> <p>No natural drain disturbed due to plant activities.</p>
(xxx)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	<p>Complied</p> <p>First Aid and sanitation facilities were provided for the drivers and contract workers during the construction period.</p>
(xxxi)	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	<p>Complied</p> <p>Labour hutments have been established with all required facilities &amp; infrastructure during construction phase.</p>
(xxxii)	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment & Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> .	<p>Complied.</p> <p>Copy of the same already submitted to your good office with compliance report.</p>
(xxxiii)	A copy of clearance letter shall be sent by the proponent to concern panchayat, Zila	Complied.

	parisad/municipal corporation, urban local body and the local NG, if any from whom suggestions/representations, if any received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Copy of EC and other required documents have been provided to Zila Parishad & Gram Panchayat.
(xxxiv)	A separate environment management cell with qualified staff shall be setup for implementation of the stipulated safeguards.	<p>A separate Environment Management Dept. is in place lead by the General Manager &amp; supported by qualified Env. Engineers, Chemist, Horticulturist and Ash utilization team for implementation of environmental safeguards</p> <ul style="list-style-type: none"> <li>- Environmental Management System (Standard: ISO 14001:2015) implemented under Integrated Management System.</li> <li>- NABL Accredited Env. Laboratory (ISO/IEC 17025 :2017) established to monitor &amp; analyses Ambient Air, quality Water/wastewater, Stack emission etc.</li> </ul>
(xxxv)	The proponent shall upload the status of compliance of stipulated EC conditions, including the results of monitoring data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MoEF, the respective zone of CPCB & the SPCB. The criteria pollutant level namely; SPM, RSPM (PM10, PM2.5), SO2 and NOx (ambient level and stack emission) shall be displayed at the convenient location near the main gate of the company in the public domain.	<p>Being Complied,</p> <p>Six monthly compliance reports are being submitted regularly to MoEFCC, CPCB &amp; MPCB. The last compliance report was submitted vide our letter No. APL/Tiroda/EMD/MoEFCC/EC/213/11/23. dated 27.11.2023.</p> <p>Compliance reports are also updated and available on <a href="http://www.adanipower.com">www.adanipower.com</a></p> <p>Online monitoring data of Ambient air quality including PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> &amp; NO<sub>x</sub>. and Stack monitoring of PM, NO<sub>x</sub>, SO<sub>2</sub>. being displayed at main Gate of the Plant.</p>
(xxxvi)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well by e-mail) to the respective Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB	<p>Complied,</p> <p>Six monthly compliance reports submitted regularly to the MoEFCC, CPCB &amp; MPCB in soft by email.</p> <p>The last compliance report was submitted vide letter No. APL/Tiroda/EMD/MoEFCC/EC/ 213/11/ 23. dated 27.11.2023.</p>
(xxxvii )	The environment statement for each financial year ending 31 <sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail	Environmental statement of FY 2022 – 23 has been submitted to MPCB on 25.09.2023. Please refer <b>Annexure -XI.</b>
(xxxvii i)	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office,	Six monthly Environmental Clearance compliance status reports are regularly submitted to MoEFCC, CPCB & SPCB. The same is sent by email also.

	Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.	Compliance status is also uploaded on <a href="https://parivesh.nic.in">https://parivesh.nic.in</a> and on company website <a href="http://www.adanipower.com">www.adanipower.com</a> .																																	
(xxxix)	Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six-monthly basis. Criteria pollutants levels including NOx (from stack & ambient air) shall be displayed at the main gate of the power plant.	Complied. EIA & EMP reports have been submitted to the Regional office of MoEF&CC. Additional information also being submitted as required. Compliance reports are available on <a href="https://parivesh.nic.in">https://parivesh.nic.in</a> .																																	
(xi)	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry	<p>A separate fund has been allocated for Environmental Protection. The budgetary provisions for 2023–2024 are as follows: -</p> <table border="1"> <thead> <tr> <th>Sl.</th><th>Particulars</th><th>Cost (in Lac.)</th></tr> </thead> <tbody> <tr> <td>1</td><td>Pollution control equipment O &amp;M</td><td>786</td></tr> <tr> <td>2</td><td>Pollution Monitoring, Study &amp; analysis</td><td>277</td></tr> <tr> <td>3</td><td>Green belt Development</td><td>278</td></tr> <tr> <td>4</td><td>Rural Development/CSR</td><td>185</td></tr> <tr> <td>5</td><td>Legal &amp; consent fees</td><td>388</td></tr> <tr> <td>6</td><td>Training &amp; Awareness</td><td>4</td></tr> <tr> <td>7</td><td>Waste Management</td><td>15000</td></tr> <tr> <td>8</td><td>Establishment of Ash Utilization Research Park</td><td>67</td></tr> <tr> <td>9</td><td>Energy Conservation Initiatives</td><td>150</td></tr> <tr> <td></td><td><b>Total</b></td><td><b>17,135</b></td></tr> </tbody> </table>	Sl.	Particulars	Cost (in Lac.)	1	Pollution control equipment O &M	786	2	Pollution Monitoring, Study & analysis	277	3	Green belt Development	278	4	Rural Development/CSR	185	5	Legal & consent fees	388	6	Training & Awareness	4	7	Waste Management	15000	8	Establishment of Ash Utilization Research Park	67	9	Energy Conservation Initiatives	150		<b>Total</b>	<b>17,135</b>
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(xii)	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant	Complied.																																	
(xiii)	Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry at Bangalore / CPCB/ SPCB who would be monitoring the compliance of environmental status.	Noted. Full cooperation always extended.																																	
<b>Additional Conditions (EC Amendment)</b>																																			
(xiv)	The coal transportation by road shall be through tarpaulin covered trucks for a	Complied																																	

	maximum period of two years and hence forth shall be only through mechanically covered trucks.	Coal is being transported through Rail only and unloaded within plant premises at Wagon Tippers & Track Hopper.
(xv)	Avenue plantation of 2/3 rows all along the road shall be carried out by the project proponent at its own expense.	Thick Plantation has been done all around the Plant boundary.
(xvi)	Periodic maintenance of the road shall be done by the project proponent at its own expense and shall also facilitate the traffic control on the road.	Complied. All internal roads are black topped or concreted and being maintained.
(xvii)	Sulphur and ash contents in the domestic coal to be used in the project shall not exceed 0.4 % and 33% at any given time. In case of variation of coal quantity at any point of time, fresh reference shall be made to the Ministry for suitable amendments to environmental clearance condition wherever necessary.	We are using washed coal from SECL and blended with raw coal. We have also installed Real time Coal Ash Analyzers to monitor ash content. MPCB officials also collected coal samples time to time and analysis results are well within the stipulated limit. Quarterly Ash content report is being submitted to MoEF&CC regional office. During the reporting period, the average ash content for the year 2023-24 it is 32.74%.
(xlvii)	A long-term study of radio activity and heavy metals content on coal to be used shall be carried out through a reputed institute. Thereafter, mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	Being Complied. We have carried out testing of radioactive analysis in coal from Board of Radiation & Isotope Technology (BRIT), Dept. of Atomic Energy, Govt. of India, Mumbai in FY 2017-18, 2018-19, 2019-20 and 2023-24. We have also done Heavy metal analysis in coal from Atomic Minerals Directorate for Exploration and Research, Dept. of Atomic Energy, Govt. of India, Hyderabad.
(xviii)	Harnessing solar power within the premises of the plant particularly at available roof tops shall be undertaken and status of implementation shall be submitted periodically to the regional office of the Ministry.	Solar panels installed at the roof top of Administrative Building to cater domestic power requirement. In addition to above, solar streetlights have been installed along the ash dyke area. Under CSR activities, we have installed more than 200 solar street- lights in nearby villages.
(xix)	Mercury emission from the stack shall also be monitored on periodic basis.	Being complied. Mercury emission from the stack is being monitored & reports are being submitted. Please refer <b>Annexure - I</b> .
(l)	Fugitive emission shall be controlled to prevent impact on agricultural or non-agricultural land.	To control fugitive emission, Rain gun type water sprinkling system has been installed in coal yard. All coal conveying belts conveyors are covered and fog type dust suppression system provided. Adequate water sprinkling arrangements have been made in wagon tippers and track hoopers to mitigate dust emission during coal un-loading by rail. Closed coal conveyor belts have been established. Cyclones followed by bag filters are provided at each coal transfers points (JNT's). Additionally, mobile water sprinklers are deployed at CHP area to suppress fugitive dust while movement of vehicles.

(li)	Source sustainability study of water requirement shall be carried out by an institute of repute. The study shall also specify the source of water for meeting the requirement during lean season. The report shall be submitted to the Regional Office of the Ministry within six months.	VIDC has developed & operating Dhapewada Barrage on River Wainganga for water supply. However, we have undergone source sustainability study of River Wainganga by "Academy of Water Technology Environ Management" Kolkata in technical collaboration Indian Institute of Social Welfare and Business Management – Kolkata and CSIR–CGCRI, Kolkata. The final report already submitted along with compliance report.
(lii)	Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.	Fly Ash is being utilised as per Fly ash Notification. CSIR – NEERI, Nagpur engaged for carry out Fly Ash leachability Study, Bioaccumulation and Magnification study. Details of the same were submitted to Ministry with previous compliance report.
(liv)	Three tire green belt shall be developed all around Ash Pond over and above the Green Belt around the Plant Boundary.	A thick plantation/green belt has been developed around the Ash Pond area. Our efforts are being made to develop more & more greenery inside the plant premises. Closed dyke also covered with soil layer & dense green belts. Please refer <b>Annexure -VII</b>
(lv)	Social audit for the CSR Scheme shall be carried out periodically by reputed university or an institution as per the CSR guidelines of Government of India and Details to be submitted to MoEF besides putting it on company's website.	Social Audit has been carried out by Indian Institute of Social Welfare & Business Management, University of Kolkata. Study report already submitted to your good office along with EC compliance report of April 2019 to Sept 2019.
(lvi)	An Environmental Cell shall be created at the project site itself and shall be headed by an officer of the company of appropriate seniority and qualification. It shall be ensured that the head of the Cell shall directly report to Head of the Organization. The environmental Cell shall be responsible and accountable for implementation of all the conditions given in the EC including in the amendment letter.	Complied A separate Environment Management Dept. is in place lead by the General Manager & supported by qualified Env. Engineers, Chemist, Horticulturist and Ash utilization team for implementation of environmental safeguards <ul style="list-style-type: none"> <li>- Environmental Management System (Standard ISO 14001:2015) implemented under Integrated Management System.</li> <li>- NABL Accredited Env. Laboratory (ISO/IEC 17025:2017) established to monitor &amp; analyses Ambient Air Quality, Water/wastewater, Stack emission monitoring etc.</li> </ul>
(vii)	Monitoring of surface water quantity and quality shall also be regularly conducted, and record maintained. The monitoring data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the	Monitoring of surface water and ground water quality including heavy metals is being done on a regular basis and records maintained. Please refer <b>Annexure – I.</b>

	direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.	
(iviii)	The environmental statement for each financial year ending 31 <sup>st</sup> March in Form – V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliances of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.	Environmental statement of FY 2022 – 23 has been submitted to MPCB on 25.09.2023. Please refer <b>Annexure -XI</b> .
(iix)	The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy stipulated in this clearance letter and other applicable environment laws and regulations.	<p>We have implemented ISO 14001:2015 under Integrated Management System, which consists of Environment, Health &amp; Safety, Quality and Energy Management Systems.</p> <p>We have also formulated a Corporate Policy as per the requirements of the Integrated Management System (IMS). Biodiversity Conservation Policy has already been framed and incorporated into the existing IMS policy. We are members of the Indian Biodiversity Business Initiative (IBBI) as initiated by MoEF&amp;CC. IMS is Integrated with International Finance Corporation (IFC) Performance and complies with IFC standards on Environmental Management. We are pleased to inform you that use of "Single Use Plastics" have been completely restricted in the plant premises. We have also integrated Water Efficiency Management, Business Continuity Management, Asset Management System and IRBC with the IMS system in FY 2021–22.</p>

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# **SIX MONTHLY ENVIRONMENTAL MONITORING REPORT**

## **FOR**

### **The Period of Oct. 2023-Mar.2024**

of

**ADANI POWER LIMITED**  
**Tirora, Growth Center,**  
**MIDC, Gondia – 441 911**

Prepared by



**Recognised by MoEF (GOI) under GSR No. 983 dated. 2.5.2014**  
**NABET Accredited and ISO 9001: 2000 Certified Organisation**

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## Foreword

*The protection of environment plays a crucial role in maintaining the local environment quality for any industry, throughout their production, hence compliance of the statutory requirements becomes very important to conserve the ecological balance within and surrounding the plant area. Therefore, environment protection is becoming a prerequisite for sustainable development. In line with this requirement, the management of **Adani Power Ltd.** has adopted a corporate responsibility of development and top priority is given for environment protection.*

*In order to comply with the Environment protection act, to fulfill statutory requirement and to be in tune with Environmental Preservation and sustainable development **Adani Power Ltd.**, has retained **Enviro Analysts and Engineers Pvt. Ltd.** as Environment Consultants and for various Environmental issues related to their Power Plant.*

*This report presents the Environmental Status for the period **Oct.2023-Mar. 2024** as a compliance to the statutory requirements.*

*The co-operation extended by the Staff and Management of Adani Power Ltd. during the work execution period is gratefully acknowledged.*

For **ENVIRO ANALYSTS & ENGINEERS PVT. LTD.**



**Authorized Signatory**

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### **Annexure I - On site Meteorological Data for OCT. 2023-MAR. 2024**

# **Chapter – 1**

## **Introduction & Scope of work**

## **1.0 INTRODUCTION.**

**M/s. Adani Power Limited (APL)** Tiroda unit is a part of Adani Power Limited has established 3300 MW (5x660) Coal-based Thermal Power Plant at Tiroda, District Gondia in Maharashtra in two phases as below:

Phase I: 2 x 660 MW

Phase II: 3 x 660 MW

## **1.1 Scope of Work.**

The scope of work includes the data generation for various environmental components viz Meteorology, Air, Noise, Water, Stack, Effluent and soil of Adani Power Limited, Tirora.

To monitor the environmental parameters and data analysis in the vicinity of the power plant of 5x660MW at MIDC Area Tiroda, APL awarded the service to M/s Enviro Analysts & Engineers Pvt. Ltd. (EAEPL), Mumbai.

The present report incorporates data of various Environmental parameters for OCT. 2023-MAR. 2024

## **Chapter – 2**

# **Details of sampling Locations & Methodology for sampling and analytical procedures**

## 2.0 DETAILS OF SAMPLING LOCATIONS.

The details of sampling location w. r. t. Air, Water and Noise quality around the power plant are shown in the Sampling location Map as depicted in Figure.2.1

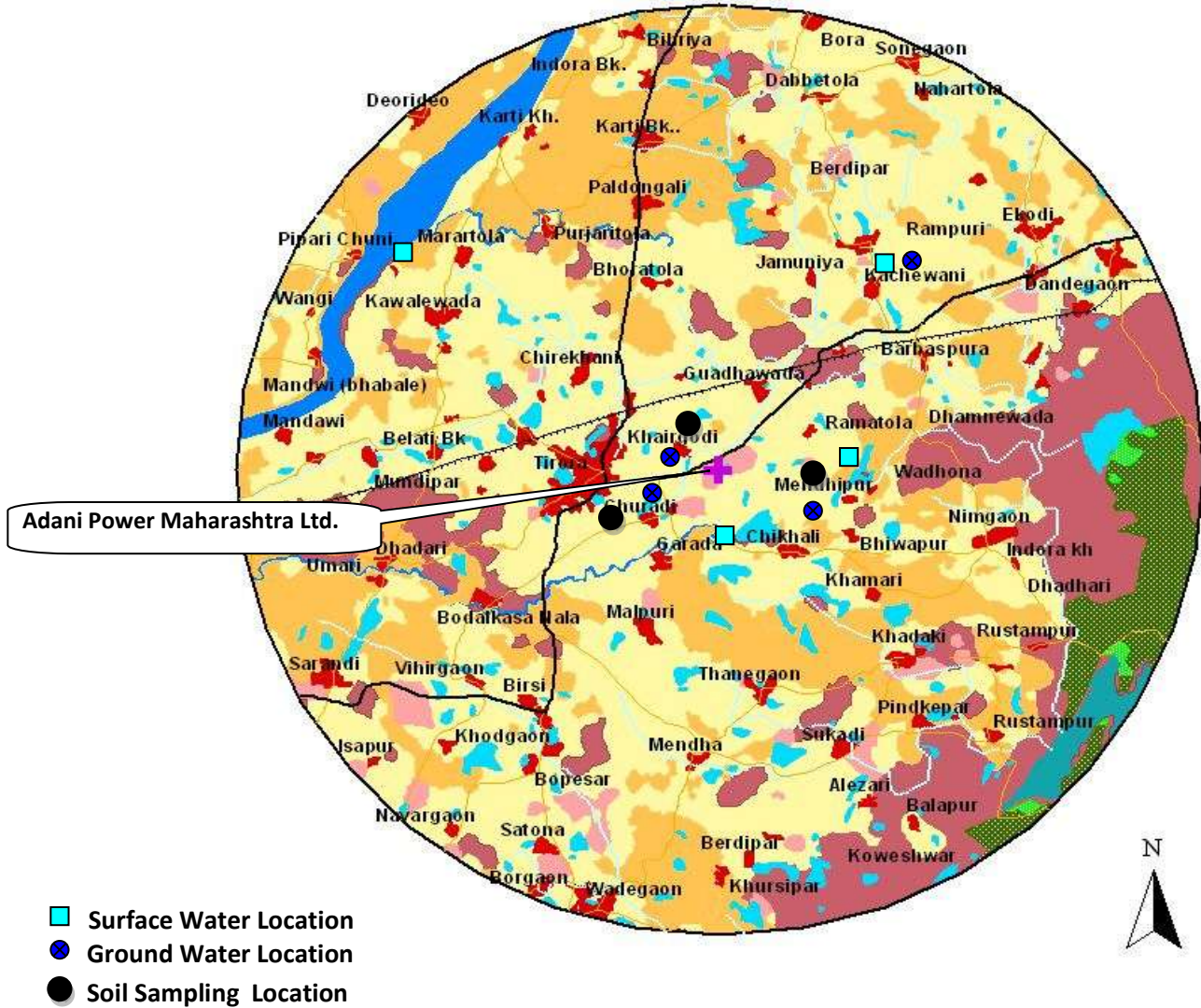
## 2.1 Meteorology and Ambient Air Quality.

Meteorological data was collected at one station concurrently with the ambient air quality monitoring. The weather station was placed on the roof top at a height of 10m. Wind speed, wind direction, relative humidity and temperature & Rainfall were recorded at hourly intervals continuously.

The sampling locations of Ambient Air Quality in the Power plant premises covering upwind and down wind direction . To assess the effect of industrial activity of power plant on the air, environmental parameters like Particulate Matter-PM<sub>10</sub>, Particulate Matter-PM<sub>2.5</sub>, Sulphur Dioxide-SO<sub>2</sub>, Nitrogen Dioxide –NO<sub>2</sub> were monitored Details of the sampling locations with respect to the plant site are given below in **Table-2.1** .

**Table 2.1 Ambient Air Quality Monitoring Location**

Code	Name of the monitoring Station	Distance from plant boundry (km)	Direction with respect to plant	Environmental Setting	Remarks
A1	Near AWRS	Within Plant	-	Within Plant	Industrial area
A2	Near Brick Plant	Within Plant	-	Within Plant	Industrial area
A3	Near China colony	Within Plant	-	Within Plant	Industrial area



**Figure : 2.1 SAMPLING LOCATIONS MAP**



## 2.2 Water Quality

Water samples were collected at various locations within the area of 10 Km radius from the plant to assess the Physico-Chemical quality of Surface and Ground Quality water. Samples were collected as per the standard procedures. On site Parameters like Temperature, Electrical Conductivity, pH and Dissolved Oxygen were analyzed at-site using portable water analysis kit. Samples were collected by taking suitable precautions for preparation and transportation, particularly using sterilized bottles for bacteriological analysis. The details of the sampling locations are given in **Table-2.2** and **Figure.2.1** as depicted.

Water samples were collected on quarterly basis from 8 locations (Ground water 4, Surface water-5). Analytical methods mentioned in IS: 3025 and Standard Methods published by APHA were followed.

**TABLE-2.2 WATER SAMPLING LOCATIONS**

Surface Water				
Code	Name of the monitoring Station	Distance from plant boundry (km)	Direction respect to plant	Source
SW1	Wainganga River Water (Upstream)	7.0	NW	River
SW2	Wainganga River Water (Downstream)	11.2	W	River
SW3	Mendipur Pond Water	2.0	SE	Pond
SW4	Garada Village Nalah water	3.0	SSW	Nalah water
SW5	Kachewani Pond water	3.0	NE	Pond water
Ground Water				
GW1	Kachewani Hand Pump	3.2	NE	Bore well
GW2	Mendipur Hand Pump	2.5	SE	Bore well
GW3	Garada Hand Pump	3.2	SW	Bore well
GW4	Chikhali Hand Pump	2.0	S	Bore well
Waste Water				
WW1	Cooling Tower Blow Down water Unit-1			In Plant
WW2	Cooling Tower Blow Down water Unit-2			In Plant
WW3	Cooling Tower Blow Down water Unit-3			In Plant
WW4	Cooling Tower Blow Down water Unit-4			In Plant
WW5	Cooling Tower Blow Down water Unit-5			In Plant
WW6	Boiler Blow down Water Unit-3			In Plant
Piezometric Well water				
P1	Near AWRPH			In Plant
P2	B/H Ash dyke -1			In Plant
P3	Near Raw Water pump house -02			In Plant

## 2.3 Noise Level:

Noise level at following in plant location and Buffer zone location were recorded by APL for the period of OCT. 2023-MAR. 2024. Location details are given in **Table-2.3.** and as depicted in **Figure.2.1**

**TABLE: 2.3 NOISE LEVEL LOCATIONS FOR THE PERIOD OF Oct.2022- Mar.2022**

Code	Location	Location type	Remarks
NL- 1	Inside the plant	Near Shanti Niketan I, II & III	Industrial
NL- 2		Near Labour Hutment	Industrial
NL- 3		Near Store Area	Industrial
NL- 4		Gate No.1	Industrial
NL- 5		Gate No.2	Industrial
NL- 6		Gate No.3	Industrial
NL-7		Near OHC	Industrial
NL-8		Railway Siding	Industrial
NL-9		Near Reservoir 2	Industrial
NL-10		Near Ash Water Recovery Pump House	Industrial
NL-11		In China Colony	Industrial

## 2.4 Soil Quality:

Soil Samples collected at 3 location around the plant zone on the seasonal basis for the period of Oct.2023-Mar. 2024 Location details are given in **Table-2.4.** and as depicted in **Figure.2.1**

**TABLE: 2.4 SOIL SAMPLING LOCATIONS FOR THE PERIOD OF OCT. 2023-MAR. 2024**

Code	Location	Location type	Remarks
S1	Buffer Zone	Garada Village	Agricultural Field
S2		Mendipur Village	Agricultural Field
S3		Churadi Village	Agricultural Field

## 2.5 Methodology of Monitoring

### 2.5.1 Instruments Used

Samples were collected at ‘Ambient Air’ monitoring locations’ using standard *Fine dust sampler* & RDS sampler for monitoring PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, concentrations and analyzed as per *USEPA / IS* methods in APL Laboratories at Tiroda site

Also Continuous Ambient Air Monitoring station installed (CAAQMS) at APL make Tyledyne and Met One instrument approved by USEPA.

On site Micro-meteorological data for wind direction, wind Speed, Temp, Relative humidity and Rainfall collected from APL.

Ground water, Surface water & Effluent water were analyzed for onsite parameters like Temperature, Electrical Conductivity, pH and Dissolved Oxygen were analyzed on-site using portable water analysis kit. Samples are collected, preserved and sent for further analysis to Enviro Analysts & Engineers Pvt. Ltd, where other parameters like total hardness, chlorides, sulphate etc and heavy metals are analyzed as per requirements IS 3025/APHA methods.

Soil samples were analyzed for physical, chemical and heavy metal concentrations, using analytical methods.

Noise was measured at site locations using a noise level meter to determine sound levels in a scale as dB (A) This is suitable for audible range of 20 to 20,000 Hz for human being. Sound level monitoring done by APL.

Stack Monitoring kit having sensor probe was used to monitor stack data like Flue gas velocity, Volumetric flow of flue gas, Temperature of flue gas, Moisture content and other parameters like SPM, SO<sub>2</sub>, NO<sub>2</sub> make by ECOTECH

### **2.5.2 Method of Analysis**

Air samples were analyzed as per standard methods specified by Central Pollution Control Board (CPCB), EPA & IS method.

#### **2.5.2.1 Meteorology**

Micro-meteorological data was observed for wind direction and speed using wind vane and anemometer using an automatic met logger. The data was recorded at 1 hour interval. Wind speed & wind direction, Temperature, Rain fall, Relative humidity were recorded by Weather Monitoring Station by APL.

#### **2.5.2.2 Ambient Air Quality (AAQ)**

Sampling was carried out at each station during the stipulated study period using pre-calibrated Respirable Dust Samplers and Fine Dust Sampler in each of the stations by APL.

Earmarked samples were collected for Particulate Matter-PM<sub>10</sub>, Particulate Matter-PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>2</sub> for 24 hourly.

The baseline data of air environment is generated for the parameters namely: Particulate Matter-PM<sub>10</sub>, Particulate Matter-PM<sub>2.5</sub>, Sulphur Dioxide SO<sub>2</sub>, and Nitrogen Dioxide NO<sub>2</sub> in APLT.

#### **2.5.2.3 Stack Monitoring**

Stack emission were analyzed with the help of stack Kit (ECOTECH Stack Kit & Prob set, quarterly basis at Boiler Stack situated in plant. Height of the Boiler Stack was noted as, 275 m and I.D. 7.4m. Flue gas, Velocity, Temperature, Volume & Qty, Moisture Content, PM, SO<sub>2</sub>, NO<sub>2</sub>, Hg were analyzed. The values obtained were then compared vis-a-vis with the standards prescribed by CPCB.

Iso-kinetic stack monitoring was conducted as per standard method IS 11255 (Part-3) specified in Emission Regulation Act Part to determine PM, SO<sub>2</sub> and NO<sub>2</sub>, Data was collected and analysis was done for other parameters like Flue gas Velocity, Temperature, Volumetric flow rate, Moisture contents.

#### **2.5.2.4 Water/Waste Water Quality**

Water/Waste water samples were collected for physico-chemical and bacteriological parameters taking suitable Precautions. Temperature, pH, Dissolved Oxygen and Electrical conductivity were measured in the field while collecting the samples. Sterilized bottles were used to collect samples for bacteriological analysis, stored in ice and transported to the Laboratory.

Ground and surface water samples were analysed as per IS: 10500 and Waste Water samples were analysed as per IS: 3025. The analytical methods mentioned in IS: 3025 and Standard Methods published by APHA were followed. MPN Index of coli forms was found as per standard methods (IS: 1622).

#### **2.5.2.5 Noise Level**

Noise is defined as unwanted sound that creates interferences in speech, communication, causes annoyance, disturbance in work concentration and sleep, thus deteriorating the quality of Noise environment. In the present study, Noise monitoring has been conducted regularly by APLT. Since loudness of sound is the important parameter to assess the effects of particular activities

on human being, hence noise level is measured for noise environment assessment. Hourly Sound Pressure level (SPL) was recorded with Sound Level Meter for 24 hours.

## 2.6 Analytical Procedures

### 2.6.1 Meteorology

The data obtained from field is used to ascertain the wind percentage frequencies in the sixteen directions for wind speeds using Beaufort's scale in the range of 0-1.8, 1.8-3.6, 3.6 – 7.2, 7.2 – 14.4, 14.4 – 28.8 and >28.8 kmph. Average wind roses at twenty four hourly are prepared from the data collected. Temperature, Relative Humidity is monitoring by Automatic Weather Monitor (AWS - 10W Rave Innovation) and Rain fall by using Rain Gauge of AWS -10W.

### 2.6.2 Ambient Air Quality

Whatman GF/A & PTFE filter paper was used in Respirable dust sampler RSPM and FDS and weighed in Mettler electronic balance and computed as per standard methods.

Ambient Air samples were analyzed for SO<sub>2</sub> concentration levels by using Improved West-Gaeke method using spectrophotometer (HACH DR 5000) at a wavelength of 560 nm. NO<sub>2</sub> conc. levels were estimated using Jacob and Hochheiser modified (Na-As) method using spectrophotometer (HACH DR 5000) at a wavelength of 540 nm

#### Sampling and Analytical Techniques

The techniques used for ambient air quality monitoring and minimum detectable levels are given in **Table-2.5**

**TABLE- 2.5 (TECHNIQUES USED FOR AMBIENT AIR QUALITY MONITORING)**

Sr. No.	Parameter	Technique	Technical protocol	Minimum detectable limit (µg/m <sup>3</sup> )
1	PM10	Respirable Dust Sampler (Gravimetric Method)	IS-5182 (Part-IV)	5.0
2	PM2.5	Fine Respirable Dust Sampler (Gravimetric Method)	IS-5182 (Part-IV)	5.0
3	Sulphur dioxide	Improved West & Gaeke Method	IS-5182 (Part-II)	4.0
4	Nitrogen dioxide	Modified Jacob & Hochheiser Method	IS-5182 (Part-VI)	4.0

## **Chapter – 3**

# **DATA ANALYSIS**

### 3.0 DATA ANALYSIS

Environmental monitoring for the period of Oct. 2023-Mar. 2024 consisted of collection and analysis of meteorological parameters, ambient air quality and ground water and surface water quality at different locations within study area selected for carrying out environmental monitoring around the plant site.

#### 3.1 Meteorology

Meteorological data was collected by APL on hourly basis for wind speed, Wind direction, temperature and relative humidity continuously. Total Rain fall on monthly basis during the period of OCT. 2023-MAR.2024 was measured and recorded and reported in the Environmental report.

##### **Wind Pattern for the period OCT. 2023-MAR. 2024.**

The data recorded during the study period was analyzed and the daily maximum, minimum and total of all the parameters were observed. The summary of all the meteorological observations is given in **Table-3.1**.

**TABLE- 3.1 METEOROLOGICAL DATA MONITORED AT SITE**  
**(for the period of OCT. 2023-MAR. 2024)**

Month	Temperature ( °C)		Relative Humidity (%)		Rainfall (mm)
	Max	Min	Max	Min	(Total)
Oct. 2023	38.7	16.3	95.7	27.5	0.6
Nov. 2023	33.7	17	98.3	25.5	47.2
Dec. 2023	34.0	9.7	99.9	20.5	18.8
Jan. 2024	32.0	11.0	97.8	24.5	15.0
Feb. 2024	32.4	11.7	94.4	21.6	25.8
Mar. 2024	41.9	17.2	87.4	16.3	2.8



### **Temperature**

The Temperature for the month of OCT. 2023-MAR. 2024 was found to be within range of 9.7°C – 41.9°C.

### **Relative Humidity**

The average relative humidity for the month of OCT. 2023-MAR. 2024 was found to be within range of 16.3-99.9%.

### **Rain Fall**

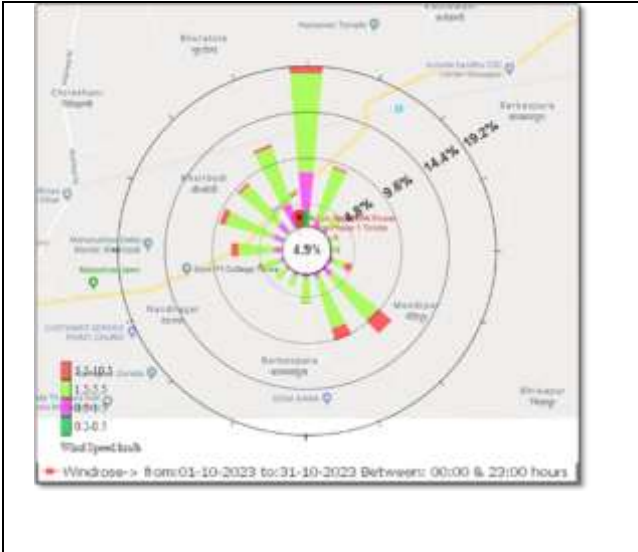
Total Rain fall found the period of OCT. 2023-MAR. 2024 was 110.2mm

### **Wind Speed/Direction**

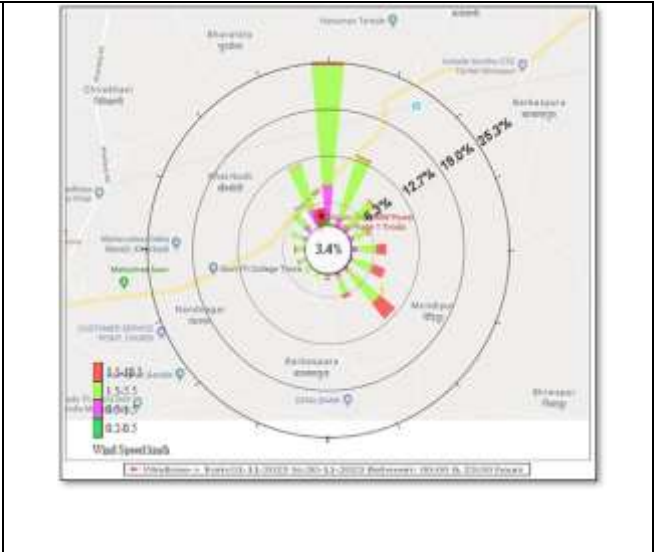
The wind speed and direction data collected during the period of OCT. 2023-MAR. 2024. The wind roses plot using the collected data for OCT. 2023-MAR. 2024 is given in **Figure-3.1**

The first predominant wind direction during OCT. 2023-MAR. 2024 was N. The calm condition ranges from 3.4 to 8.8%.

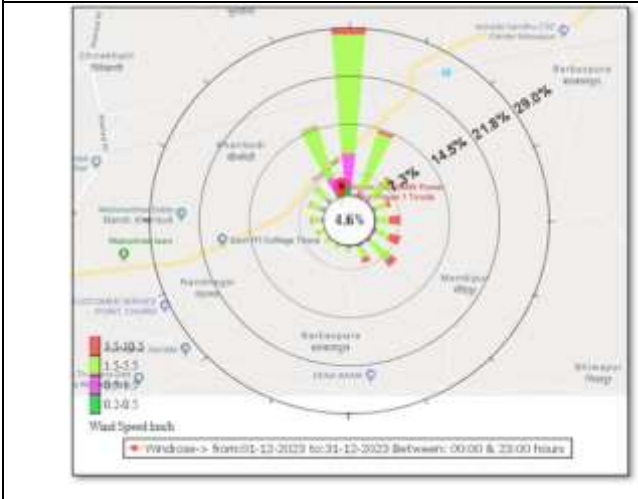
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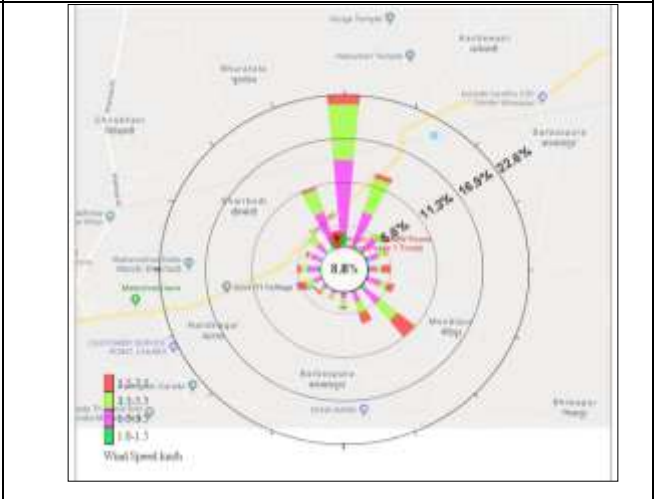
### Wind rose for Oct. 2023



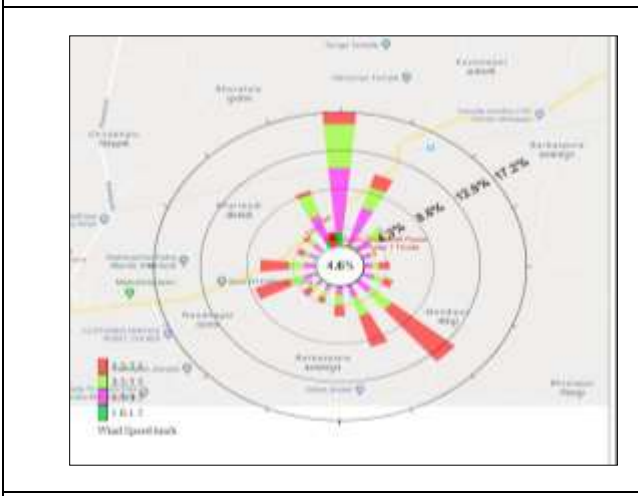
### Wind rose for Nov. 2023



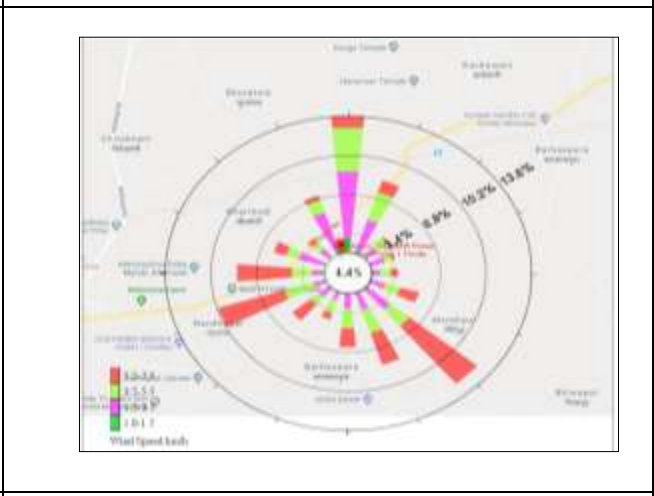
Wind rose for Dec. 2023



### Wind rose for Jan. 2024



### Wind rose for Feb. 2024



### Wind rose for Mar. 2024

**FIGURE-3.1 SITE SPECIFIC WINDROSE FOR OCT. 2023-MAR. 2024**

### **3.2 Ambient Air Quality**

Ambient air quality has been carried out within plant for the period of OCT. 2023-MAR. 2024. PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> & NO<sub>2</sub>, sampling at all the locations is done for 24 hours average twice a week by APL. The values obtained were then compared vis-a-vis the standards prescribed by CPCB for Industrial/ Rural / Residential uses.

#### **3.2.1 Presentation of Results.**

The summary of Ambient Air Quality monitoring results for the period of OCT. 2023-MAR. 2024 are presented in detail in **Table 3.2** for Inside plant area. 98<sup>th</sup> percentile; maximum and minimum values etc have been computed from the collected raw data for all the AAQ monitoring station. The data has been compared with the standards prescribed by Central Pollution Control Board (CPCB)/NAAQ for residential and rural zone.

#### **Particulate Matter-PM<sub>10</sub>**

The minimum and maximum concentrations during OCT. 2023-MAR. 2024 in the plant area location for Particulate Matter-PM<sub>10</sub> were recorded as 22.7 µg/m<sup>3</sup> and 85.7 µg/m<sup>3</sup> respectively. The minimum concentration was recorded at Near AWRS (A1) and maximum concentration at Near Chaina Colony (A3).

#### **Particulate Matter-PM<sub>2.5</sub>**

The minimum and maximum concentrations in the plant area location for PM<sub>2.5</sub> were recorded as 11.5µg/m<sup>3</sup> and 51.4 µg/m<sup>3</sup> respectively. The minimum and Maximum concentration was recorded at Near Brick Plant (A2).

#### **Sulphur Dioxide (SO<sub>2</sub>)**

The minimum and maximum SO<sub>2</sub> concentrations in the plant area location were recorded as 6.9µg/m<sup>3</sup> and 18.5 µg/m<sup>3</sup> respectively. The minimum concentration was recorded at Near AWRS Colony (A3) and maximum concentration was recorded at Near Chaina Colony (A3) respectively.

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### Nitrogen Dioxide (NO<sub>2</sub>)

The minimum and maximum NO<sub>2</sub> concentrations in the plant area location were recorded as 9.4 µg/m<sup>3</sup> and 30.7 µg/m<sup>3</sup> respectively. The minimum concentration was recorded Near Chaina Colony (A3) and maximum concentration was recorded at Near Brick Plant(A2)respectively.

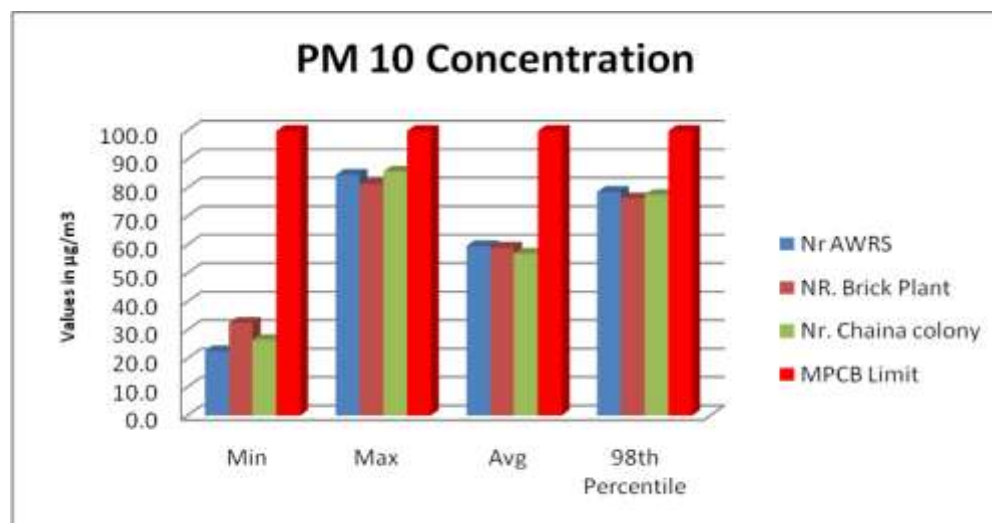
**TABLE- 3.2 SUMMARY OF AMBIENT AIR QUALITY RESULT**

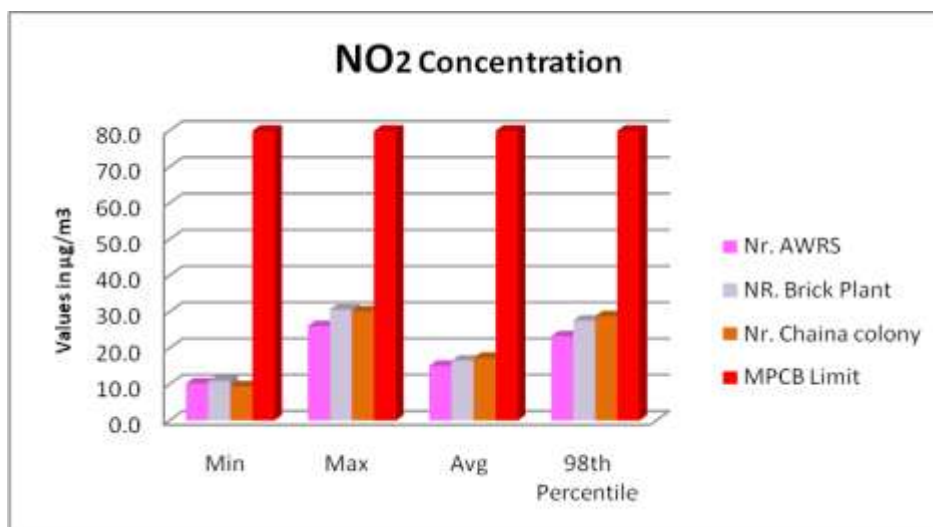
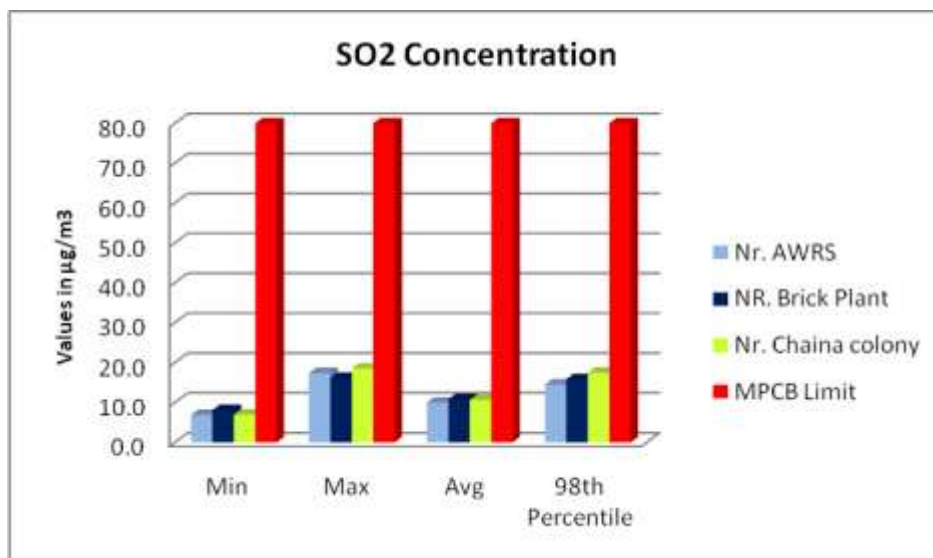
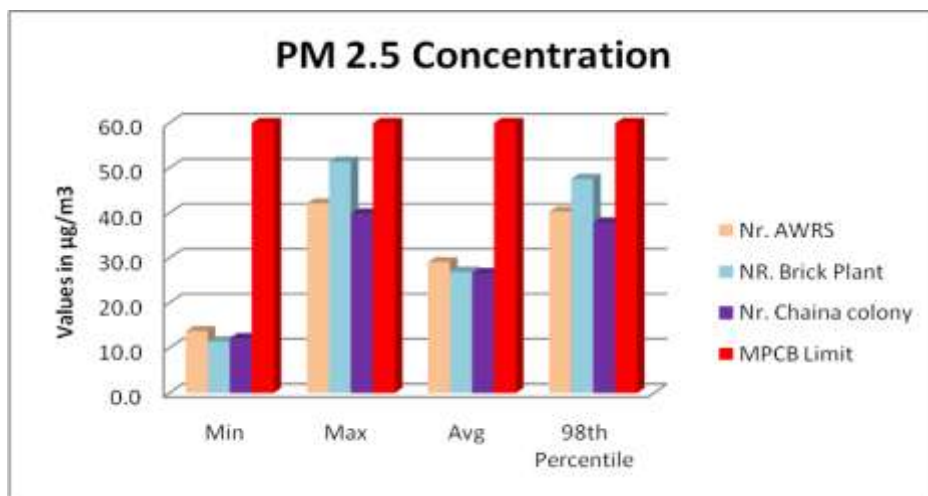
**( Inside Plant Premises)**

**for the period of Oct 2023- Mar. 2024**

All values are µg/m<sup>3</sup>

Location	PM <sub>10</sub>				PM <sub>2.5</sub>				SO <sub>2</sub>				NO <sub>2</sub>			
	Min	Max	Avg	98% tile	Min	Max	Avg	98% tile	Min	Max	Avg.	98% tile	Min	Max	Avg.	98% tile
Near AWRS	22.7	84.6	59.6	78.6	13.8	42.1	29.1	40.3	6.9	17.4	10.0	14.5	10.2	26.1	15.1	23.2
Near Brick Plant	32.6	81.4	59.0	76.3	11.5	51.4	26.9	47.6	8.1	16.2	10.8	15.9	10.9	30.7	16.5	27.6
Near Chaina colony	26.6	85.7	56.9	77.5	12.2	39.9	26.6	37.9	7.0	18.5	10.6	17.4	9.4	30.1	17.3	28.8
MPCB Limit	100				60				80				80			





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### 3.3 Stack Monitoring.

Stack monitoring is done with the help of stack Kit (ECOTECH Stack Kit) & Prob set, once in a quarter at Boiler Stack 1 to 5 situated in plant. Height of the Boiler Stack was noted as, 275m and I.D. 7.4m. Flue gas, Velocity, Temperature, Volume & Qty, PM, SO<sub>2</sub>, NO<sub>x</sub>, Hg are analysed. The values obtained are then compared vis-a-vis with the standards prescribed by CPCB.

#### 3.3.1 Presentation of Results.

The Stack analysis results for the period of OCT. 2023-MAR. 2024 are presented in detail for various parameters like Flue gas, Velocity, Temperature, Volume & Qty, SPM, SO<sub>2</sub>, NO<sub>x</sub>, Hg values etc computed from the collected raw data for the Stack monitoring station. The summary of these results is presented below. The data has been compared with the standards prescribed by Central Pollution Control Board (CPCB)/MPCB

**TABLE- 3.3 Stack Analysis Report for the period of Oct. 2023 - Mar.-2024**

#### Power Plant (Unit-I to Unit 5)

PARAMETERS	CONCENTRATION									
	Unit I		Unit 2		Unit 3		Unit 4		Unit 5	
Date of Sampling	Dec. 2023	Mar. 2024	Dec. 2023	Mar. 2024	Dec. 2023	Mar. 2024	Dec. 2023	Mar. 2024	Dec. 2023	Mar. 2024
Diameter of Stack (M)	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Height of Stack (M)	275	275	275	275	275	275	275	275	275	275
Temp. of exit gas (0 C)	128	122	130	119	129	124	120	123	128	122
Velocity of exit gas (m/sec)	23.28	22.40	23.48	22.13	23.78	23.83	23.28	23.20	23.07	24.27
Flow of exit gas at stack temp. & Press.( m3/hr)	3602620.97	3466439.42	3633571.32	3424656.45	3679996.85	3687734.44	3602620.97	3590240.83	3570123.10	3755825.21
Flow of exit gas at NTP(Nm3/hr)	2543396.50	2484427.85	2552516.23	2473265.92	2591559.97	2629716.93	2595170.47	2566659.54	2520453.49	2691833.21
PM (mg/Nm3)	38.7	41.3	41.6	39.8	42.6	37.7	41.3	44.8	45.5	40.4
Total dust emission (kg/hr)	98.43	102.60	106.18	98.43	110.4	99.14	107.18	114.99	114.68	108.75
SO2 (mg/Nm3)	817.7	862.5	827.2	855.5	821.7	838.9	819.3	805.8	796.4	842.2
SO2 (kg/hr)	2079.73	2142.82	2111.44	2115.88	2129.48	2206.07	2126.22	2068.21	2007.29	2267.06
SO2 (TPD)	49.91	51.42	50.67	50.78	51.11	52.94	51.03	49.64	48.17	54.41
NOx (mg/Nm3)	326.4	331.4	315.5	361.7	321.5	344.6	307.4	325.4	292.8	322.4
Mercury (mg/Nm3)	0.0139	0.0147	0.0149	0.0140	0.0144	0.0149	0.0143	0.0139	0.0137	0.0144

**Note: Values of PM, SO<sub>2</sub> and NO<sub>x</sub> based on 6% O<sub>2</sub>**

### **3.4 Water Quality**

Ground waters were collected at 4 locations and Surface water at 5 locations within the 10 km radial distance of power plant were analyzed as per IS 10500 to assess the quality of water for portability.

#### **Presentation of Results**

The results of the water quality monitored in the period of OCT. 2023-MAR. 2024, that of four surface water and four ground water samples and seven drinking water samples. The surface water quality results are given in **Table-3.4**, the results of ground water quality is given in **Table-3.5** and the results of Waste water quality are given in **Table-3.6** the findings are discussed below.

#### **3.4.1 Ground Water Quality.**

Most of the villages in the Nearby plant area have hand pumps, as most of the residents of these area use of this water for drinking and other domestic uses.

The analysis results indicate that the pH ranges from 7.70 to 8.02 the maximum pH observed at Mendipur Village(GW2) and Minimum pH were observed at Chikhali Village (GW4) which is well within the specified standard of 6.5 to 8.5.

Total hardness was observed to be ranging from 277 to 572 mg/l. The maximum hardness 572 mg/l was recorded at Kachewani Village (GW1) and the minimum hardness of 277 mg/l was recorded at Mendipur village(GW2), Which is well within the specified standard of 200(600) mg/l.

Chlorides were found to be in the range of 53.7 mg/l to 236.2mg/l, the maximum concentration of chlorides was observed at Kachewani Village (GW1) and the minimum concentration of chlorides was observed at Mendipur Village(GW2)

Sulphates were found to be in the range of 32.6 mg/l to 162.4 mg/l. The maximum value observed at Kachewani Village (GW1) and the minimum value observed at Mendipur Village(GW2).

The values of Chlorides and sulphate are acceptable limits.

The analysis results indicate all parameter including bacteriological and heavy metal parameters are well within the drinking water standards.



### **3.4.2 Surface Water Quality.**

The analysis results indicate that the pH values in the range of 7.68 to 7.85 the minimum and maximum value was observed at Wainganga River and Garada nalah water respectively which is well within the specified standard of 6.5 to 8.5.

TDS was observed in the range of 162 mg/l to 520 mg/l, the maximum TDS value was observed at Garada Nalah where as minimum value was observed in Wainganga River, where as TDS is within Desirable limits.

Chlorides and Sulphates were found to be in the range of 10.4 to 32.4 mg/l and 8.6 to 27.0 mg/l respectively. It is observed that value of chlorides and Sulphates are well within acceptable limits. It is evident from the above values that all the parameters are found to comply with the requirements of IS: 10500 specification of surface water except bacteriological parameters. The surface water quality does not indicate any industrial contamination.

Heavy metals concentrations for metals like Arsenic (As), Mercury (Hg), Lead (Pb), Cadmium (Cd), Chromium (Cr) and Copper (Cu) were found to be within the acceptable limits.

### **3.4.3 Waste Water Quality**

Waste water samples were also collected from Cooling Tower Blodown of unit 1 to 5 and Boiler- Blow down collected of Unit 3 in the March. 2024, Analytical methods mentioned in IS: 3025 and Standard Methods published by APHA were followed. The summary of waste water quality collected on quarterly basis for the period of OCT. 2023-MAR. 2024 are given in **Table-3.6**

### **3.4.4 Pizo-Metric water**

There were 3 Pizo metric monitored for water level and collected water samples were analyzed as per IS: 3025 and Standard Methods published by APHA were followed. The summary of pizo-metric water quality collected on quarterly basis for the period of OCT. 2023-MAR. 2024 are given in **Table-3.7**

## **3.5 Noise Level:**

Noise level was measured by APL in basic units of dB(A) at eleven location inside the plant (industrial Area) during day time and Night time for 24Hrs.

Noise level was found within the acceptable limits during daytime as well as night time for all locations with reference to CPCB standard limits for Industrial area and Residential area.

Noise levels at following locations were recorded for the period of OCT. 2023-MAR. 2024 on monthly basis. The summary of Noise Level is given in **Table-3.8**



### 3.6 Soil Quality

Soil samples were collected at 3 locations within the 10 km radial distance of power plant were analyzed as per IS:2720 . The analysis results given in **Table-3.9**.

**TABLE- 3.4 SURFACE WATER QUALITY**

#### **SW1: Wainganga River Water (Up Stream)**

Sr. No.	Test Parameters	Unit	As per IS 10500 : 2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	1.7	1.4
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	-	-
4	Turbidity NTU	NTU	1(5)	1.2	1.0
5	Total Dissolved Solid	mg / l	500 (2000)	204	162
6	Electrical Conductivity	µS/cm	-	328	268
7	Total Alkalinity	mg / l	200 (600)	138	132
8	pH Value at 25°C	-	6.5 to 8.5	7.70	7.68
9	Total Hardness ( CaCO <sub>3</sub> )	mg / l	200 (600)	110	104
10	Calcium (as Ca)	mg / l	75 (200)	30.2	28.5
11	Magnesium (as Mg)	mg / l	30 (100)	8.4	7.96
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.067	0.063
14	Manganese as (Mn)	mg / l	0.1(0.3)	< 0.01	< 0.01
15	Chlorides (as Cl)	mg / l	250(1000)	10.9	10.4
16	Sulphate (as SO <sub>4</sub> )	mg / l	200 (400)	9.5	8.6
17	Nitrates (as NO <sub>3</sub> )	mg / l	45	2.20	2.15
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.30	0.32
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.11	0.12
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	Nil	Nil
30	Total Coliform	MPN/100 ml	Absent	>16	>16
31	E. Coli	Nos./100 ml	Absent	> 16	>16

Note : Standards limit given as Acceptable Limit (Permissible Limit)

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**SW2: Wainganga River Water (Down Stream)**

Sr. No.	Test Parameters	Unit	As per IS 10500 : 2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	2.0	1.6
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	-	-
4	Turbidity NTU	NTU	1(5)	1.2	1.0
5	Total Dissolved Solid	mg / l	500 (2000)	208	170
6	Electrical Conductivity	µS/cm	-	330	278
7	Total Alkalinity	mg / l	200 (600)	139	136
8	pH Value at 25°C	-	6.5 to 8.5	7.71	7.73
9	Total Hardness ( CaCO3)	mg / l	200 (600)	110	108
10	Calcium (as Ca)	mg / l	75 (200)	30.2	28.8
11	Magnesium (as Mg)	mg / l	30 (100)	8.4	8.75
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.0673	0.067
14	Manganese as (Mn)	mg / l	0.1(0.3)	< 0.01	< 0.01
15	Chlorides (as Cl)	mg / l	250(1000)	10.9	10.7
16	Sulphate (as SO4)	mg / l	200 (400)	9.6	9.1
17	Nitrates (as NO3)	mg / l	45	2.20	2.20
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.31	0.32
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.11	0.107
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	Nil	Nil
30	Total Coliform	MPN/100 ml	Absent	>16	>16
31	E. Coli	Nos./100 ml	Absent	> 16	>16

Note : Standards limit given as Acceptable Limit (Permissible Limit)

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**SW3: Mendipur Pond Water**

Sr. No.	Test Parameters	Unit	As per IS 10500 : 2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	2.0	1.5
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	-	-
4	Turbidity NTU	NTU	1(5)	1.5	1.2
5	Total Dissolved Solid	mg / l	500 (2000)	196	210
6	Electrical Conductivity	µS/cm	-	318	340
7	Total Alkalinity	mg / l	200 (600)	135	146
8	pH Value at 25°C	-	6.5 to 8.5	7.71	7.76
9	Total Hardness ( CaCO <sub>3</sub> )	mg / l	200 (600)	132	174
10	Calcium (as Ca)	mg / l	75 (200)	33.2	39.5
11	Magnesium (as Mg)	mg / l	30 (100)	11.9	18.3
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.073	0.076
14	Manganese as (Mn)	mg / l	0.1(0.3)	0.010	0.011
15	Chlorides (as Cl)	mg / l	250(1000)	13.8	16.2
16	Sulphate (as SO <sub>4</sub> )	mg / l	200 (400)	12.2	13.5
17	Nitrates (as NO <sub>3</sub> )	mg / l	45	5.10	4.74
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.50	0.55
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.12	0.14
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	Nil	Nil
30	Total Coliform	MPN/100 ml	Absent	> 16	> 16
31	E. Coli	Nos./100 ml	Absent	> 16	> 16

**Note : Standards limit given as Acceptable Limit (Permissible Limit)**

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**SW4: Garada Village Nalah water**

Sr. No.	Test Parameters	Unit	As per IS 10500 : 2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	1.7	1.5
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	-	-
4	Turbidity NTU	NTU	1(5)	1.2	1.0
5	Total Dissolved Solid	mg / l	500 (2000)	394	520
6	Electrical Conductivity	µS/cm	-	636	840
7	Total Alkalinity	mg / l	200 (600)	172	184
8	pH Value at 25°C	-	6.5 to 8.5	7.82	7.85
9	Total Hardness ( CaCO3)	mg / l	200 (600)	194	236
10	Calcium (as Ca)	mg / l	75 (200)	53.0	62.2
11	Magnesium (as Mg)	mg / l	30 (100)	14.9	19.6
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.081	0.086
14	Manganese as (Mn)	mg / l	0.1(0.3)	< 0.01	< 0.01
15	Chlorides (as Cl)	mg / l	250(1000)	26.8	32.4
16	Sulphate (as SO4)	mg / l	200 (400)	22.4	27.0
17	Nitrates (as NO3)	mg / l	45	3.30	3.65
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.47	0.62
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.17	0.21
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	Nil	Nil
30	Total Coliform	MPN/100 ml	Absent	> 16	> 16
31	E. Coli	Nos./100 ml	Absent	> 16	> 16

**Note : Standards limit given as Acceptable Limit (Permissible Limit)**

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**SW5: Kachewani Pond water**

Sr. No.	Test Parameters	Unit	As per IS 10500 : 2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	1.2	1.0
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	-	-
4	Turbidity NTU	NTU	1(5)	1.0	1.0
5	Total Dissolved Solid	mg / l	500 (2000)	226	252
6	Electrical Conductivity	µS/cm	-	366	408
7	Total Alkalinity	mg / l	200 (600)	142	158
8	pH Value at 25°C	-	6.5 to 8.5	7.77	7.80
9	Total Hardness ( CaCO <sub>3</sub> )	mg / l	200 (600)	148	172
10	Calcium (as Ca)	mg / l	75 (200)	45.0	47.2
11	Magnesium (as Mg)	mg / l	30 (100)	8.63	13.1
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.073	0.076
14	Manganese as (Mn)	mg / l	0.1(0.3)	< 0.01	< 0.01
15	Chlorides (as Cl)	mg / l	250(1000)	18.1	18.6
16	Sulphate (as SO <sub>4</sub> )	mg / l	200 (400)	12.6	14.2
17	Nitrates (as NO <sub>3</sub> )	mg / l	45	3.85	3.70
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.52	0.55
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.11	0.11
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	Nil	Nil
30	Total Coliform	MPN/100 ml	Absent	> 16	> 16
31	E.Coli	Nos./100 ml	Absent	> 16	> 16

**Note : Standards limit given as Acceptable Limit (Permissible Limit)**

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**TABLE- 3.5 GROUND WATER REPORT**

**Monitoring Date:** 30.12.2023

<b>STATIC WATER LEVEL OF OPEN WELL</b>						
<b>Name of village</b>	<b>Plinth Height (m)</b>	<b>Diameter (m)</b>	<b>Water level from G.L. (m)</b>	<b>Shape</b>	<b>Total Depth of well from G.L (m)</b>	<b>Landmark</b>
<b>Mendipur</b>	0.85	1.45	4.65	Round	11.00	<b>Near Vitoba Ahinshak Suryavanshi Residence</b>
<b>Khairbori</b>	1.10	1.83	5.10	Round	10.10	<b>Near Hanuman Temple, Durga Temple</b>
<b>Churadi</b>	1.20	2.60	5.30	Round	11.60	<b>Near Primary School</b>
<b>Kachewani</b>	1.5	4.80	6.70	Round	12.30	<b>Opp. ZP. school</b>

**Monitoring Date:** 19.03.2024

<b>STATIC WATER LEVEL OF OPEN WELL</b>						
<b>Name of village</b>	<b>Plinth Height (m)</b>	<b>Diameter (m)</b>	<b>Water level from G.L. (m)</b>	<b>Shape</b>	<b>Total Depth of well from G.L (m)</b>	<b>Landmark</b>
<b>Mendipur</b>	0.85	1.45	6.85	Round	11.00	<b>Near Vitoba Ahinshak Suryavanshi Residence</b>
<b>Khairbori</b>	1.10	1.83	6.80	Round	10.10	<b>Near Hanuman Temple, Durga Temple</b>
<b>Churadi</b>	1.20	2.60	7.80	Round	11.60	<b>Near Primary School</b>
<b>Kachewani</b>	1.5	4.80	10.60	Round	12.30	<b>Opp. ZP. school</b>

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**GROUND WATER QUALITY**

**GW1: Kachewani Hand Pump water**

Sr. No.	Test Parameters	Unit	As per IS 10500 : 2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	0.1	0.1
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	Agreeable	Agreeable
4	Turbidity NTU	NTU	1(5)	0.1	0.1
5	Total Dissolved Solid	mg / l	500 (2000)	1340	748
6	Electrical Conductivity	µS/cm	-	2160	1214
7	Total Alkalinity	mg / l	200 (600)	242	220
8	pH Value at 25°C	-	6.5 to 8.5	7.96	7.75
9	Total Hardness ( CaCO3)	mg / l	200 (600)	572	482
10	Calcium (as Ca)	mg / l	75 (200)	112.2	94.2
11	Magnesium (as Mg)	mg / l	30 (100)	70.8	59.9
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.26	0.23
14	Manganese as (Mn)	mg / l	0.1(0.3)	0.017	0.013
15	Chlorides (as Cl)	mg / l	250(1000)	236.2	184.4
16	Sulphate (as SO4)	mg / l	200 (400)	157.4	132.6
17	Nitrates (as NO3)	mg / l	45	4.62	3.80
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.87	0.82
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.83	0.74
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	< 0.1	< 0.1
30	Total Coliform	MPN/100 ml	Absent	Absent	Absent
31	E. Coli	Nos./100 ml	Absent	Absent	Absent

**Note : Standards limit given as Acceptable Limit (Permissible Limit)**

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**GW2: Mendipur Hand Pump water**

Sr. No.	Test Parameters	Unit	As per IS 10500 :2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	0.1	0.1
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	Agreeable	Agreeable
4	Turbidity NTU	NTU	1(5)	0.1	0.1
5	Total Dissolved Solid	mg / l	500 (2000)	656	446
6	Electrical Conductivity	µS/cm	-	1062	728
7	Total Alkalinity	mg / l	200 (600)	214	202
8	pH Value at 25°C	-	6.5 to 8.5	7.78	7.70
9	Total Hardness ( CaCO3)	mg / l	200 (600)	332	277
10	Calcium (as Ca)	mg / l	75 (200)	76.5	71.8
11	Magnesium (as Mg)	mg / l	30 (100)	34.2	23.70
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.13	0.117
14	Manganese as (Mn)	mg / l	0.1(0.3)	< 0.01	< 0.01
15	Chlorides (as Cl)	mg / l	250(1000)	68.3	53.7
16	Sulphate (as SO4)	mg / l	200 (400)	41.4	32.6
17	Nitrates (as NO3)	mg / l	45	2.82	2.55
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.81	0.78
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.33	0.27
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	< 0.1	< 0.1
30	Total Coliform	MPN/100 ml	Absent	Absent	Absent
31	E.Coli	Nos./100 ml	Absent	Absent	Absent

**Note : Standards limit given as Acceptable Limit (Permissible Limit)**



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**GW3: Garada Hand Pump water**

Sr. No.	Test Parameters	Unit	As per IS 10500 : 2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	0.1	0.1
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	Agreeable	Agreeable
4	Turbidity NTU	NTU	1(5)	0.1	0.1
5	Total Dissolved Solid	mg / l	500 (2000)	738	882
6	Electrical Conductivity	µS/cm	-	1192	1420
7	Total Alkalinity	mg / l	200 (600)	220	236
8	pH Value at 25°C	-	6.5 to 8.5	7.76	7.80
9	Total Hardness ( CaCO3)	mg / l	200 (600)	302	430
10	Calcium (as Ca)	mg / l	75 (200)	74.2	88.5
11	Magnesium (as Mg)	mg / l	30 (100)	28.3	50.7
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.11	0.142
14	Manganese as (Mn)	mg / l	0.1(0.3)	< 0.01	< 0.01
15	Chlorides (as Cl)	mg / l	250(1000)	126.2	232.7
16	Sulphate (as SO4)	mg / l	200 (400)	88.3	162.4
17	Nitrates (as NO3)	mg / l	45	2.90	4.10
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.82	0.87
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.72	0.85
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	< 0.1	< 0.1
30	Total Coliform	MPN/100 ml	Absent	Absent	Absent
31	E. Coli	Nos./100 ml	Absent	Absent	Absent

**Note : Standards limit given as Acceptable Limit (Permissible Limit)**

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**GW4: Chikhali Hand Pump water**

Sr. No.	Test Parameters	Unit	As per IS 10500 : 2012	Results	
				Dec 2023	Mar. 2024
1	Apparent Colour	Hazen units	5 (15)	0.1	0.1
2	Odour	-	Agreeable	Agreeable	Agreeable
3	Taste	-	Agreeable	Agreeable	Agreeable
4	Turbidity NTU	NTU	1(5)	0.1	0.1
5	Total Dissolved Solid	mg / l	500 (2000)	740	814
6	Electrical Conductivity	µS/cm	-	1196	1316
7	Total Alkalinity	mg / l	200 (600)	212	228
8	pH Value at 25oC	-	6.5 to 8.5	7.85	8.02
9	Total Hardness ( CaCO3)	mg / l	200 (600)	318	394
10	Calcium (as Ca)	mg / l	75 (200)	76.8	88.0
11	Magnesium (as Mg)	mg / l	30 (100)	30.6	42.3
12	Copper as(Cu)	mg / l	0.05(1.5)	< 0.01	< 0.01
13	Iron (as Fe)	mg / l	0.3	0.13	0.182
14	Manganese as (Mn)	mg / l	0.1(0.3)	< 0.01	< 0.01
15	Chlorides (as Cl)	mg / l	250(1000)	142.2	196.6
16	Sulphate (as SO4)	mg / l	200 (400)	90.8	130.5
17	Nitrates (as NO3)	mg / l	45	3.50	3.85
18	Fluoride (as F)	mg / l	1.0 (1.5)	0.85	0.86
19	Phenolic Compounds	mg / l	0.001	BDL	BDL
20	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005
21	Cadmium as (Cd)	mg / l	0.003	< 0.001	< 0.001
22	Selenium as (Se)	mg / l	0.01	< 0.001	< 0.001
23	Arsenic as (As)	mg / l	0.01 (0.05)	< 0.01	< 0.01
24	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005
25	Lead as (Pb)	mg / l	0.01	< 0.001	< 0.001
26	Zinc as (Zn)	mg / l	5 (15)	0.76	0.86
27	Total Chromium as (Cr )	mg / l	0.05	< 0.03	< 0.03
28	Mineral Oil	mg / l	0.05	< 0.01	< 0.01
29	Free Residual Chlorine	mg / l	0.2 (1.0)	< 0.1	< 0.1
30	Total Coliform	MPN/100 ml	Absent	Absent	Absent
31	E. Coli	Nos./100 ml	Absent	Absent	Absent

Note : Standards limit given as Acceptable Limit (Permissible Limit)

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**TABLE- 3.6 WASTE WATER QUALITY (OCT. 2023-MAR. 2024)**

**Sample Category : Unit-1- Cooling Tower Blow Down water (WW-1)**

Sr. No.	Parameters	Unit	MPCB Limit	Results	
				Dec 2023	Mar. 2024
1.	Free Available Chlorine	mg / l	0.5	0.25	0.22
2.	Zinc as (Zn)	mg / l	1.0	0.12	0.10
3.	Total Chromium as (Cr )	mg / l	0.2	0.013	0.011
4.	Phosphate as (PO4)	mg/ l	5.0	1.31	1.15

**Sample Category : Unit-2- Cooling Tower Blow Down water (WW-2)**

Sr. No.	Parameters	Unit	MPCB Limit	Results	
				Dec 2023	Mar. 2024
1.	Free Available Chlorine	mg / l	0.5	0.25	0.30
2.	Zinc as (Zn)	mg / l	1.0	0.11	0.17
3.	Total Chromium as (Cr )	mg / l	0.2	0.015	0.021
4.	Phosphate as (PO4)	mg/ l	5.0	1.37	1.44

**Sample Category : Unit-3- Cooling Tower Blow Down water (WW-3)**

Sr. No.	Parameters	Unit	MPCB Limit	Results	
				Dec 2023	Mar. 2024
1.	Free Available Chlorine	mg / l	0.5	0.21	0.24
2.	Zinc as (Zn)	mg / l	1.0	0.14	0.16
3.	Total Chromium as (Cr )	mg / l	0.2	0.015	0.018
4.	Phosphate as (PO4)	mg/ l	5.0	1.36	1.38

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**Sample Category : Unit-4-Cooling Tower Blow Down water (WW-4)**

Sr. No.	Parameters	Unit	MPCB Limit	Results	
				Dec 2023	Mar. 2024
1.	Free Available Chlorine	mg / l	0.5	0.22	0.27
2.	Zinc as (Zn)	mg / l	1.0	0.12	0.15
3.	Total Chromium as (Cr )	mg / l	0.2	0.011	0.020
4.	Phosphate as (PO4)	mg/ l	5.0	1.30	1.42

**Sample Category : Unit-5- Cooling Tower Blow Down water (WW-5)**

Sr. No.	Parameters	Unit	MPCB Limit	Results	
				Dec 2023	Mar. 2024
1.	Free Available Chlorine	mg / l	0.5	0.26	0.23
2.	Zinc as (Zn)	mg / l	1.0	0.14	0.12
3.	Total Chromium as (Cr )	mg / l	0.2	0.012	0.017
4.	Phosphate as (PO4)	mg/ l	5.0	1.35	1.38

**Sample Category : ETP Water**

**Sampling Date : 20.03.2024**

Sr. No.	Parameters	Measurement Unit	Method	Result	MPCB Standards
1	pH Value at 25°C	-	IS : 3025 (Part 11)-1983	7.71	5.5-9.0
2	TSS	mg / l	IS : 3025 (Part 17) 1984	16	100
3	TDS	mg / l	IS : 3025 (Part 16)-1984	236	2100
4	COD	mg / l	IS : 2488 (Part 5 ) -1976	24.7	250
5	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	5.9	30
6	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4	10
7	Copper as(Cu)	mg / l	IS : 3025 (Part II)-2004	< 0.010	-
8	Iron (as Fe)	mg / l	IS : 3025 (Part II)-2004	0.163	-
9	Manganese as (Mn)	mg / l	IS : 3025 (Part II)-2004	0.035	-
10	Mercury as (Hg)	mg / l	IS : 3025 (Part II)-2004	< 0.001	-
11	Cadmium as (Cd)	mg / l	IS : 3025 (Part II)-2004	< 0.001	-
12	Selenium as (Se)	mg / l	IS : 3025 (Part II)-2004	0.0116	-
13	Arsenic as (As)	mg / l	IS : 3025 (Part II)-2004	< 0.01	-
14	Cyanide as (CN)	mg / l	IS : 3025 (Part 27)-1986	< 0.005	-
15	Lead as (Pb)	mg / l	IS : 3025 (Part II)-2004	< 0.001	-
16	Zinc as (Zn)	mg / l	IS : 3025 (Part II)-2004	1.71	-
17	Total Chromium as (Cr )	mg / l	IS :3025(Part 52)-2003	0.012	-

## TEST RESULT

**Sample Category : Unit 3- Boiler Blow Down Water (WW6)**

Sr. No.	Test Parameters	Unit	MPCB Limit	Results
				Mar. 2024
1.	TSS	mg / l	100	16
2.	Oil & Grease	mg / l	20	< 4
3.	Copper (as Cu)	mg / l	1	0.12
4.	Iron (as Fe)	mg / l	1	0.084

**TABLE- 3.7 Pizo-metric well water Report**

**Monitoring Date:** 20.03.2024

STATIC WATER LEVEL OF PIZO. WELL				
Name of village	Water level from B.G.L. (m)	Total Depth of Pizo well from G.L (m)	Total Depth of Pizo well with Casing (m)	Landmark
Pizo well (P1)	3.8	18.6	19.8	Near AWRPH
Pizo well (P2)	3.6	20.0	21.0	B/H Ash dyke -1
Pizo well (P3)	3.5	20.0	20.7	Near Raw Water pump house -02

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**Pizo-metric well water Analysis Report**

**Sampling Date:** 20.03.2024

Sr. No.	Test Parameters	Unit	As per IS : 10500 : 2012	Pizo well (P1) Near AWRPH	Pizo well (P2) B/H Ash dyke -1	Pizo -well (P3) Near Raw Water pump house -02
1	pH		6.5 to 8.5	7.80	7.81	7.85
2	Total Dissolved Solid	mg / l	500 (2000)	36	46	44
3	Electrical Conductivity	µS/cm	-	712	722	678
4	Copper as(Cu)	mg / l	0.05 (1.5)	< 0.01	< 0.01	< 0.01
5	Iron (as Fe)	mg / l	0.3 (1.0)	0.183	0.191	0.135
6	Manganese as (Mn)	mg / l	0.1 (0.3)	0.067	0.072	0.062
7	Mercury as (Hg)	mg / l	0.001	< 0.0005	< 0.0005	< 0.0005
8	Cadmium as (Cd)	mg / l	0.01	0.0029	0.0034	0.0022
9	Selenium as (Se)	mg / l	0.01	0.0015	0.0017	0.0014
10	Arsenic as (As)	mg / l	0.05	0.013	0.016	0.0122
11	Cyanide as (CN)	mg / l	0.05	< 0.005	< 0.005	< 0.005
12	Lead as (Pb)	mg / l	0.05	0.0013	0.0017	0.0014
13	Zinc as (Zn)	mg / l	5 (15)	1.91	1.93	1.88
14	Total Chromium as (Cr )	mg / l	0.05	< 0.010	< 0.010	< 0.010
15	Oil & Grease	mg / l	10	< 4	< 4	< 4

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**TABLE- 3.8 Noise Level (Within Plant area)**

SL. NO.	LOCATION	RESULT (dBA)					
		DAY					
		Oct. 2023	Nov 2023	Dec. 2023	Jan. 2024	Feb. 2024	Mar. 2024
1	Near Shanti Niketan I, II & III	57.9	57.0	54.9	55.5	49.7	59.5
2	Near Labour Hutment	62.0	64.4	62.5	63.4	65.7	63.2
3	Near Store Area	62.4	58.8	63.4	64.7	60.6	61.3
4	Gate No.1	52.3	53.8	57.0	60.6	50.1	58.1
5	Gate No.2	62.6	59.8	65.7	61.8	62.6	65.1
6	Gate No.3	68.0	67.1	69.1	62.4	62.4	62.4
7	Near OHC	47.3	48.1	48.0	50.3	57.4	50.6
8	Railway Siding	62.0	64.0	63.8	67.0	63.1	63.1
9	Near Reservoir 2	51.9	48.1	53.3	55.6	52.6	53.2
10	Near Ash Water Recovery Pump House	65.3	63.2	63.3	55.5	60.8	59.9
11	In China Colony	37.6	39.2	39.4	45.0	39.4	39.4
CPCB Standards							
Industrial Area		75					

SL. NO.	LOCATION	RESULT (dBA)					
		NIGHT					
		Oct. 2023	Nov 2023	Dec. 2023	Jan. 2024	Feb. 2024	Mar. 2024
1	Near Shanti Niketan I II & III	49.2	45.8	43.1	43.1	44.7	45.4
2	Near Labour Hutment	50.6	53.2	53.6	53.6	54.3	55.2
3	Near Store Area	50.9	51.2	51.4	52.4	53.5	52.6
4	Gate No.1	42.2	41.8	40.1	45.7	42.5	43.5
5	Gate No.2	50.2	50.5	51.0	51.0	53.7	54.6
6	Gate No.3	59.4	56.1	56.0	52.7	54.4	55.1
7	Near OHC	33.5	33.2	33.1	40.5	42.3	43.5
8	Railway Siding	52.4	52.8	53.7	54.1	53.9	54.3
9	Near Reservoir 2	40.2	40.7	39.2	39.7	41.2	45.2
10	Near Ash Water Recovery Pump House	54.9	54.4	56.6	48.8	50.6	52.3
11	In China Colony	29.1	31.8	29.9	31.8	32.5	35.2
CPCB Standards							
Industrial Area		70					

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**TABLE- 3.9 SOIL ANALYSIS as Per IS 2720 for (Dec.2023)**

Sr. No.	Test Parameters	Unit	Khairbodi Village	Mendipur Village	Churdi Village
1	pH	-	7.76	7.76	7.81
2	E. Conductivity	μs/cm	476	476	536
3	Nitrogen as N	Kg/ha	638	638	722
4	Phosphorus as P <sub>2</sub> O <sub>5</sub>	Kg/ha	76.6	76.6	63.3
5	Potassium as K	Kg/ha	64.3	64.3	51.7
6	Calcium (as Ca)	Kg/ha	3.95	3.95	4.82
7	Magnesium (as Mg)	Kg/ha	1.07	1.07	1.12
8	Total Organic Carbon	%	0.624	0.624	0.622
9	Iron as Fe	Kg/ha	2.38	2.38	2.23
10	Boron as B	Kg/ha	1.07	1.07	1.24
11	Natural Moisture Content	%	6.6	6.6	6.4
12	Field Capacity	%	6.1	6.1	6.8
13	Wilting Coefficient	%	0.65	0.65	0.61
14	Available Water Storage Capacity	%	0.60	0.60	0.65
15	Bulk Density	gm/cc	1.37	1.37	1.36
16	Grain size Distribution : a) Sand	%	34.2	34.2	33.7
	b) Silt	%	32.3	32.3	31.5
	c) Clay	%	33.5	33.5	34.8
17	Cation Exchange Capacity	meq/100gm	31.9	31.9	34.7
18	Biological Status:				
	a) Total Heterotrophy	CFU	41.2 x103/gm	41.2 x103/gm	52.2 x103/gm
	b) Azetobacter	CFU	56.6 x103/gm	56.6 x103/gm	44.1 x103/gm
	c) Actinomycetes	CFU	33.7 x102/gm	33.7 x102/gm	56.2 x103/gm
	d) Yeast	CFU	180 x102/gm	180 x102/gm	174.5 x102/gm



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**Annexure I - On site Meteorological Data for OCT. 2023-MAR. 2024**

**Oct. 2023**

Date	Wind Direction (Blowing From)	Wind Speed (Km/hr)		Temperature (°C)			Humidity (%)			Barometric Pressure (mBar)	Rainfall (mm)
		Max.	Avg.	Max	Min	Avg.	Max	Min	Avg	(Average)	
01.10.2023	E	31.1	3.0	35.7	24.6	27.9	95.7	54.5	83.2	979.8	0.6
02.10.2023	S	30.4	2.2	36.9	24.8	30.0	95.5	49.5	74.7	980.1	0.0
03.10.2023	SSE	34.6	2.2	36.3	24.6	29.6	91.3	40.9	68.7	981.5	0.0
04.10.2023	ESE	19.5	2.1	35.5	21.4	27.7	87.3	40.4	65.2	982.8	0.0
05.10.2023	NNW	22.5	3.1	38.5	20.4	28.0	90.5	34.9	67.7	982.8	0.0
06.10.2023	NW	19.0	2.7	38.3	21.8	28.5	92.0	36.6	68.4	982.5	0.0
07.10.2023	SSE	20.5	2.9	37.2	22.2	28.8	94.8	40.3	70.3	983.5	0.0
08.10.2023	SSE	17.8	2.9	38.6	23.6	30.0	88.6	38.0	66.8	984.9	0.0
09.10.2023	NW	18.0	3.4	38.3	23.2	30.3	91.4	38.9	66.0	986.1	0.0
10.10.2023	NW	18.5	2.8	37.9	23.6	30.2	93.1	37.2	67.3	986.4	0.0
11.10.2023	NW	19.5	2.9	38.3	23.1	29.8	94.2	38.0	69.0	986.4	0.0
12.10.2023	NW	22.5	3.2	37.3	23.7	29.9	89.0	38.5	69.9	987.5	0.0
13.10.2023	S	17.0	1.9	37.9	22.8	29.4	94.3	34.8	69.3	988.2	0.0
14.10.2023	SSE	22.0	2.5	38.7	22.4	28.8	94.2	27.5	68.5	987.9	0.0
15.10.2023	SSE	20.7	3.5	36.5	21.8	28.4	93.1	38.4	67.7	986.4	0.0
16.10.2023	NW	30.9	3.7	36.6	22.0	28.4	91.8	37.6	67.7	986.7	0.0
17.10.2023	S	29.6	2.5	36.0	21.6	28.1	94.8	41.2	69.7	987.9	0.0
18.10.2023	ESE	21.7	2.3	36.1	22.5	28.6	85.2	41.0	65.4	988.4	0.0
19.10.2023	S	35.6	3.5	36.0	22.5	27.6	86.1	40.4	67.6	988.4	0.0
20.10.2023	S	29.6	3.3	35.2	21.5	27.5	91.6	37.2	66.6	989.0	0.0
21.10.2023	S	29.6	3.1	34.9	20.0	27.1	90.9	35.6	64.7	989.4	0.0
22.10.2023	S	27.4	3.1	34.7	19.4	26.3	89.5	29.9	61.1	989.2	0.0
23.10.2023	S	27.7	3.8	32.1	18.4	25.3	84.6	33.9	58.5	987.8	0.0
24.10.2023	S	38.8	3.5	31.0	19.8	27.5	82.7	32.3	60.0	987.7	0.0
25.10.2023	S	22.0	2.4	32.0	24.2	29.1	87.1	32.5	63.2	988.5	0.0
26.10.2023	S	25.4	2.9	31.4	21.3	28.8	92.8	29.2	62.8	988.3	0.0
27.10.2023	S	20.5	2.7	30.7	16.3	27.6	91.6	30.7	61.9	987.8	0.0
28.10.2023	S	21.5	2.8	31.1	17.2	28.2	93.3	32.0	63.7	988.1	0.0
29.10.2023	S	20.5	2.6	32.8	20.1	29.1	93.3	29.4	64.3	987.7	0.0
30.10.2023	SSE	38.0	2.9	31.4	19.2	29.1	90.0	33.6	64.3	987.9	0.0
31.10.2023	S	34.3	4.0	30.9	18.7	28.7	89.2	39.5	64.9	988.6	0.0

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**Nov. 2023**

Date	Wind Direction (Blowing From)	Wind Speed (Km/hr)		Temperature (°C)			Humidity (%)			Barometric Pressure (mBar) (Average)	Rainfall (mm)
		Max.	Avg.	Max	Min	Avg.	Max	Min	Avg		
01.11.2023	S	30.4	3.7	32.7	22.1	29	85.9	40	65.4	988.6	0.0
02.11.2023	S	31.6	2.7	32.3	20.5	29.8	90.3	42.3	68.4	987.5	0.0
03.11.2023	S	20.0	2.4	32.4	23.0	30.0	87.4	41.4	68.4	985.5	0.0
04.11.2023	S	23.2	2.4	33.7	21.5	29.5	87.1	33.1	63.4	985.7	0.0
05.11.2023	S	30.1	3.7	32.3	20.4	26.9	80.6	29.3	56.8	987.6	0.0
06.11.2023	S	34.6	4.5	29.9	20.5	25.6	78.6	25.5	57.6	988.8	0.0
07.11.2023	S	18.0	2.3	31.8	18.9	27.3	89.6	26.3	60.8	988.3	0.0
08.11.2023	S	17.8	2.5	32.6	19.3	28.4	88.4	30.9	64.1	988.1	0.0
09.11.2023	S	17.8	2.9	32.1	18.2	27.8	91.2	31.5	64.9	988.4	0.0
10.11.2023	S	20.3	2.4	32.7	21.2	28.0	92.3	31.8	65.7	989.4	0.0
11.11.2023	S	24.2	2.6	32.7	23.3	29.5	93.7	32.8	65.3	989.8	0.0
12.11.2023	S	21.5	2.7	32.2	21.6	29.4	88.3	32.3	62.9	989.6	0.0
13.11.2023	S	25.2	2.8	33.3	19.0	28.0	84.5	31.1	60.6	989.5	0.0
14.11.2023	S	28.4	3.0	29.4	17.2	24.3	85.4	32.2	61.1	989.0	0.0
15.11.2023	S	24.0	2.5	25.5	17.8	25.0	63.7	34.5	62.7	988.6	0.0
16.11.2023	S	31.6	3.0	30.0	25.7	26.7	87.4	34.9	63.0	988.9	0.0
17.11.2023	S	26.9	3.1	30.6	29.9	27.4	80.5	79.9	62.2	988.8	0.0
18.11.2023	S	22.7	2.9	30.8	21.7	27.0	87.9	35.7	62.7	988.3	0.0
19.11.2023	S	27.7	3.3	30.7	23.0	29.1	91.1	36.2	64.9	988.8	0.0
20.11.2023	S	30.6	3.5	30.7	20.8	28.3	86.8	35.1	62.8	988.9	0.0
21.11.2023	S	26.7	2.7	30.4	23.4	27.6	84.9	36.4	63.5	988.2	0.0
22.11.2023	NW	23.2	3.1	32.8	20.2	27.3	84.0	36.2	63.4	987.4	0.0
23.11.2023	S	26.9	2.9	30.7	19.1	26.6	87.1	33.2	62.8	986.5	0.0
24.11.2023	S	29.4	2.9	30.3	17.6	24.8	86.1	33.6	62.9	987.5	0.0
25.11.2023	S	21.5	2.7	30.2	23.4	28.0	85.5	36.7	64.0	989.1	0.0
26.11.2023	SSE	25.4	3.4	29.1	20.5	26.3	80.3	32.7	58.4	989.4	0.0
27.11.2023	SSE	21.5	2.8	29.3	17.0	26.0	83.0	56.9	72.0	988.5	0.0
28.11.2023	W	40.5	3.6	32.0	23.4	30.0	92.8	63.7	89.2	987.5	46.8
29.11.2023	W	21.5	3.5	32.3	18.6	29.2	98.3	54.8	80.4	987.7	0.4
30.11.2023	S	24.9	2.5	32.6	20.4	30.5	91.8	48.9	72.4	987.7	0.0

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**Dec. 2023**

Date	Wind Direction (Blowing From)	Wind Speed (Km/hr)		Temperature (°C)			Humidity (%)			Barometric Pressure (mBar)	Rainfall (mm)
		Max.	Avg.	Max	Min	Avg.	Max	Min	Avg	(Average)	
01.12.2023	S	27.9	2.92	32.9	27.4	31.24	91.1	47.3	73.87	987.089	0.0
02.12.2023	S	31.4	3.4	33.0	21.2	30.4	94.6	42.2	69.9	987.1	0.0
03.12.2023	S	32.1	3.9	32.0	21.7	28.9	92.2	43.5	68.1	987.6	0.0
04.12.2023	S	25.4	3.54	31.4	20	28.02	90.8	50	70.12	986.41	0.0
05.12.2023	W	39.0	5.7	32.6	23.1	29.9	94.4	65.7	83.4	986.0	5.6
06.12.2023	S	28.9	3.3	33.6	20.9	31.5	99.97	85.7	94.3	986.1	9.6
07.12.2023	S	20.7	2.1	34.0	23.7	31.0	99.99	70.2	92.2	986.0	3.6
08.12.2023	S	24.9	1.6	31.7	19.1	29.5	97.2	59.8	84.8	987.6	0.0
09.12.2023	SSE	29.4	2.2	32.1	16.8	26.7	99.98	40.2	73.3	989.0	0.0
10.12.2023	S	26.2	2.2	27.5	14.3	20.6	90.6	37.1	66.8	987.9	0.0
11.12.2023	S	25.4	2.3	29.9	13.7	22.9	93.6	36.9	66.9	988.2	0.0
12.12.2023	S	26.4	2.5	28.7	15.7	23.9	90.2	36.7	68.3	986.9	0.0
13.12.2023	S	31.6	2.5	28.9	17.4	27.1	90.9	39.9	69.1	988.1	0.0
14.12.2023	S	20.5	2.6	28.4	17.2	26.0	84.6	37.6	63.7	989.9	0.0
15.12.2023	S	30.4	2.7	27.4	15.8	24.1	84.6	32.1	61.4	990.6	0.0
16.12.2023	S	30.1	3.8	27.7	17.1	23.7	81.2	30.3	58.3	989.7	0.0
17.12.2023	S	29.9	2.7	27.2	14.7	24.5	87.8	35.6	63.5	989.6	0.0
18.12.2023	SSE	39.0	4.0	26.7	13.5	23.0	86.1	29.1	58.2	991.3	0.0
19.12.2023	S	36.6	3.7	24.3	9.7	19.0	77.1	29.4	52.8	992.1	0.0
20.12.2023	S	24.9	3.2	25.1	10.3	20.3	77.9	28.0	54.8	992.0	0.0
21.12.2023	S	24.9	3.2	26.6	14.4	22.0	80.5	20.5	57.2	990.4	0.0
22.12.2023	S	21.7	2.7	25.9	15.3	22.2	82.7	27.1	56.2	989.7	0.0
23.12.2023	S	20.3	3.2	28.0	14.2	24.8	78.0	32.3	56.2	990.6	0.0
24.12.2023	SSE	20.5	2.9	29.3	12.6	21.3	90.4	36.0	66.9	992.1	0.0
25.12.2023	S	18.5	2.7	29.6	15.5	25.8	93.7	30.9	66.2	991.3	0.0
26.12.2023	S	20.7	2.4	29.6	20.0	26.6	82.5	33.6	62.0	990.9	0.0
27.12.2023	S	23.5	2.9	30.0	20.6	27.0	86.1	37.6	64.4	991.4	0.0
28.12.2023	S	21.5	2.6	29.4	21.2	27.3	90.9	36.9	68.1	990.2	0.0
29.12.2023	SSE	19.8	2.7	30.3	22.4	27.2	92.4	41.6	70.7	990.3	0.0
30.12.2023	S	18.8	3.1	29.7	19.8	27.6	93.6	38.6	70.3	989.7	0.0
31.12.2023	S	18.8	2.5	29.6	14.7	22.8	94.5	40.2	71.5	989.2	0.0

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**Jan. 2024**

Date	Wind Direction (Blowing From)	Wind Speed (Km/hr)		Temperature (°C)			Humidity (%)			Barometric Pressure (mBar)	Rainfall (mm)
		Max.	Avg.	Max	Min	Avg.	Max	Min	Avg	(Average)	
01.01.2024	S	21.7	2.7	30.0	22.8	27.5	93.9	40.0	70.2	989.2	0.0
02.01.2024	S	29.1	3.0	30.5	22.0	27.3	94.0	39.2	68.6	988.5	0.0
03.01.2024	S	21.0	2.8	30.1	22.1	27.2	92.6	42.2	68.8	988.0	0.0
04.01.2024	NW	18.3	2.9	30.9	22.7	27.1	89.8	48.5	70.9	988.1	0.0
05.01.2024	NW	23.5	3.2	30.9	22.0	27.4	92.4	47.5	71.8	987.9	0.0
06.01.2024	S	28.7	4.0	30.5	25.2	28.1	89.2	56.4	73.7	989.0	0.0
07.01.2024	S	22.7	3.1	30.7	19.3	28.5	97.8	45.1	75.2	989.8	0.0
08.01.2024	SSW	25.9	3.1	30.2	22.3	28.0	94.0	36.3	67.6	990.1	0.0
09.01.2024	S	24.9	2.7	31.3	21.8	28.9	85.9	39.4	66.0	989.5	0.0
10.01.2024	S	24.5	2.8	31.1	21.8	28.7	85.9	40.2	67.4	988.9	0.0
11.01.2024	S	28.9	4.0	29.8	23.8	28.4	90.6	43.6	70.1	990.0	0.0
12.01.2024	S	26.2	2.9	29.6	19.7	27.7	84.6	37.8	63.2	989.3	0.0
13.01.2024	E	25.4	3.4	29.7	19.1	26.8	76.6	36.9	59.4	989.0	0.0
14.01.2024	S	24.5	3.1	29.2	23.1	27.7	83.2	38.1	59.5	988.0	0.0
15.01.2024	S	31.4	3.5	28.6	17.7	25.7	80.2	36.4	59.7	987.4	0.0
16.01.2024	SSW	26.2	3.5	28.8	14.0	21.7	81.1	41.5	62.1	986.1	0.0
17.01.2024	S	24.5	3.1	32.0	15.4	25.5	91.2	55.7	74.8	985.0	0.0
18.01.2024	S	25.4	4.4	31.5	23.5	27.7	91.4	49.3	66.6	986.5	0.0
19.01.2024	S	25.7	4.1	28.6	19.0	25.8	78.2	48.5	61.0	988.0	0.0
20.01.2024	NW	29.1	4.6	29.7	23.5	27.7	82.4	51.7	67.7	988.0	0.0
21.01.2024	S	25.4	4.0	30.1	22.8	27.8	84.6	52.6	70.3	988.4	0.0
22.01.2024	SSW	30.9	4.8	28.9	22.8	26.0	73.8	42.4	62.2	989.2	0.0
23.01.2024	SSW	55.6	3.7	31.1	18.8	29.3	94.3	68.9	84.1	988.2	15.0
24.01.2024	S	26.2	3.0	30.9	14.7	24.8	93.5	41.7	66.3	988.8	0.0
25.01.2024	S	31.6	3.9	23.7	11.3	18.4	72.3	29.0	49.8	991.3	0.0
26.01.2024	S	25.7	3.1	24.9	11.0	18.1	85.4	26.6	57.0	992.6	0.0
27.01.2024	S	25.9	3.1	24.4	12.3	18.6	84.9	29.3	56.3	992.4	0.0
28.01.2024	S	27.4	2.9	26.2	12.1	19.5	86.5	24.5	57.4	991.2	0.0
29.01.2024	S	25.2	4.0	27.8	13.1	23.7	91.2	33.2	61.5	989.9	0.0
30.01.2024	S	20.5	3.0	29.2	15.9	23.5	85.9	35.1	62.3	988.8	0.0
31.01.2024	NW	32.4	4.8	29.8	18.6	25.3	80.5	43.8	63.8	987.8	0.0

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**Feb. 2024**

Date	Wind Direction (Blowing From)	Wind Speed (Km/hr)		Temperature (°C)			Humidity (%)			Barometric Pressure (mBar)	Rainfall (mm)
		Max.	Avg.	Max	Min	Avg.	Max	Min	Avg	(Average)	
01.02.2024	NW	25.9	3.8	30.7	20.9	26.0	90.3	42.0	66.3	987.9	0.0
02.02.2024	S	26.7	3.9	32.1	18.8	24.3	90.5	32.8	59.1	989.2	3.2
03.02.2024	S	26.9	3.5	27.0	15.4	21.4	75.1	26.7	51.9	990.6	0.0
04.02.2024	NW	24.7	3.2	27.8	14.6	22.5	87.5	26.3	51.4	990.8	0.0
05.02.2024	NW	31.4	4.6	29.8	19.1	27.7	88.9	39.7	61.9	989.4	0.0
06.02.2024	S	39.8	5.2	31.2	21.7	28.1	88.0	36.3	62.4	989.2	0.0
07.02.2024	S	32.1	3.8	29.9	22.6	27.5	88.2	36.7	61.4	990.3	0.0
08.02.2024	S	36.6	5.0	25.9	15.9	22.3	67.5	30.3	46.2	991.0	0.0
09.02.2024	SSW	29.9	3.1	24.9	11.7	19.5	66.8	21.6	42.9	991.0	0.0
10.02.2024	SSW	25.4	4.5	27.9	14.8	22.4	70.3	38.4	55.2	990.9	0.0
11.02.2024	NW	62.2	4.5	31.9	17.5	26.9	84.3	50.5	68.2	990.8	1.8
12.02.2024	NW	56.8	5.2	31.0	22.3	29.2	94.4	43.9	70.4	990.5	20.8
13.02.2024	NW	46.2	7.7	31.8	25.7	28.7	88.3	39.5	63.4	989.5	0.0
14.02.2024	NW	32.9	4.7	30.9	25.6	29.0	86.7	43.5	64.7	988.8	0.0
15.02.2024	S	32.1	3.8	31.9	26.6	29.9	90.5	44.2	68.1	989.9	0.0
16.02.2024	S	28.7	3.8	32.2	27.1	28.7	76.4	41.5	59.8	990.4	0.0
17.02.2024	S	32.9	4.6	31.7	25.7	28.8	76.1	36.0	59.7	987.9	0.0
18.02.2023	NW	27.9	4.9	31.8	26.3	28.5	87.1	29.4	57.8	986.2	0.0
19.02.2024	NW	32.1	6.4	30.0	18.9	26.2	86.2	31.6	53.7	986.2	0.0
20.02.2024	NW	25.2	5.0	29.9	24.3	27.0	71.0	23.7	47.3	985.7	0.0
21.02.2024	ENE	35.8	5.1	29.3	18.9	27.2	78.7	29.6	52.7	984.2	0.0
22.02.2024	ENE	40.8	4.7	28.8	21.1	25.7	79.4	31.6	50.0	985.0	0.0
23.02.2024	S	34.6	3.1	27.5	17.3	23.3	73.9	29.7	50.4	986.5	0.0
24.02.2024	NW	33.1	4.3	28.2	17.2	24.4	68.4	30.9	49.4	986.1	0.0
25.02.2024	S	29.4	5.8	29.7	17.1	26.1	69.3	45.5	57.2	986.6	0.0
26.02.2024	NNW	39.3	6.0	32.4	28.2	30.1	79.4	48.7	66.0	987.6	0.0
27.02.2024	ENE	43.5	5.5	32.0	26.8	30.3	84.6	43.2	64.1	987.7	0.0
28.02.2024	S	25.4	3.1	29.7	27.0	28.9	82.0	36.4	61.5	987.3	0.0
29.02.2024	S	28.2	3.3	29.9	24.5	28.2	80.7	29.0	53.9	987.2	0.0

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**Mar. 2024**

Date	Wind Direction (Blowing From)	Wind Speed (Km/hr)		Temperature (°C)			Humidity (%)			Barometric Pressure (mBar)	Rainfall (mm)
		Max.	Avg.	Max	Min	Avg.	Max	Min	Avg	(Average)	
01.03.2024	SSE	28.9	4.1	30.6	23.7	27.9	82.9	22.5	49.6	987.2	0.0
02.03.2024	S	34.6	5.2	29.3	25.3	27.8	73.9	38.1	52.6	986.0	0.0
03.03.2024	NW	37.8	4.6	31.0	26.4	28.9	73.0	35.7	55.0	984.7	0.0
04.03.2024	S	31.4	4.0	31.0	22.8	27.2	81.1	27.9	49.7	986.3	0.0
05.03.2024	S	33.6	4.0	29.1	17.2	24.1	64.5	27.2	42.2	987.0	0.0
06.03.2024	S	34.8	4.0	32.3	19.5	25.8	62.3	32.2	45.8	985.7	0.0
07.03.2024	SSW	32.1	3.6	34.1	23.5	27.8	69.1	27.3	47.6	985.6	0.0
08.03.2024	S	25.2	3.6	29.4	19.9	24.8	54.5	26.1	40.5	986.4	0.0
09.03.2024	S	34.6	4.6	29.7	21.4	25.5	58.0	23.2	39.5	986.7	0.0
10.03.2024	NNW	45.2	5.5	30.7	23.9	27.6	63.6	30.0	44.4	987.2	0.0
11.03.2023	NW	40.8	5.2	32.2	26.6	29.6	76.4	33.2	52.0	987.5	0.0
12.03.2024	ENE	32.6	3.5	33.9	25.7	28.5	76.3	23.8	44.5	986.3	0.0
13.03.2024	E	35.1	3.9	31.2	23.9	27.9	74.9	23.8	43.0	984.9	0.0
14.03.2024	S	27.2	3.3	31.0	22.2	26.3	65.8	16.3	37.3	985.9	0.0
15.03.2024	ESE	27.9	3.7	29.6	20.5	24.6	60.8	18.7	36.7	985.2	0.0
16.03.2024	S	55.8	4.7	34.3	24.0	27.7	72.6	32.8	48.1	985.9	0.0
17.03.2024	S	46.7	4.0	33.5	27.3	29.7	80.2	32.8	57.1	986.3	0.0
18.03.2024	NEN	36.3	5.3	32.1	23.1	30.4	87.4	39.5	62.4	985.6	0.0
19.03.2024	NW	63.0	7.3	34.2	21.7	26.1	75.6	41.3	60.4	986.1	0.0
20.03.2024	ENE	59.3	6.1	33.9	21.8	27.5	53.6	20.1	40.2	986.7	0.0
21.03.2024	NW	43.7	5.9	35.7	17.9	26.6	71.8	26.2	48.3	986.2	0.0
22.03.2024	NW	28.2	4.8	38.4	20.6	29.1	74.5	21.2	44.2	983.9	0.0
23.03.2023	ENE	38.5	4.9	39.7	20.5	30.0	70.8	20.0	44.5	983.6	0.0
24.03.2024	NW	31.9	5.3	39.7	21.9	30.9	76.8	23.5	43.7	985.0	0.0
25.03.2024	ENE	37.0	4.7	40.0	23.6	31.2	69.1	23.8	45.4	985.5	0.0
26.03.2024	NW	25.7	3.9	40.4	23.3	31.5	73.6	29.5	47.7	986.0	0.0
27.03.2024	NW	39.8	6.0	38.8	26.5	32.4	65.4	29.5	43.5	987.7	0.0
28.03.2024	NW	35.3	5.9	40.9	25.9	33.1	61.9	26.7	40.9	985.6	0.0
29.03.2024	NW	52.1	6.1	41.9	25.6	33.8	61.6	23.0	38.8	984.0	0.0
30.03.2024	ESE	56.1	5.1	40.3	26.5	32.6	67.0	27.2	43.5	985.9	0.6
31.03.2024	NEN	42.5	5.6	38.1	23.5	31.7	78.7	31.7	49.7	986.7	2.2

## Waste Water Analysis Report

S.N.	Parameters	Unit	MPCB Standards	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24	
				STP-1	STP-2	STP-1	STP-2	STP-1	STP-2	STP-1	STP-2	STP-1	STP-2	STP-1	STP-2
1	TSS	mg / l	50	31	23	38	44	22	15	23	31	18	20	28	37
2	COD	mg / l	100	61	41	39.2	58.8	71.4	20.4	78	59	86	92	41	51
3	BOD at 27 OC for 3 days	mg / l	30	15	11	15	12	14	16	15	17	16	18	24	20

S.N.	Parameters	Unit	MPCB Standards	Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24	
				ETP	Ash Pond	ETP	Ash Pond	ETP	Ash Pond	ETP	Ash Pond	ETP	Ash Pond	ETP	Ash Pond
1	pH Value	----	5.5-9.0	8.4	7.8	8.4	7.9	8.8	7.9	8.4	8.3	8.1	8.37	8.0	8.43
2	TSS	mg / l	100	30.7	52.0	43.0	57.0	71	89	46	83	49	89	25.4	40.0
3	COD	mg / l	250	41	—	74.0	—	31	—	102	—	92	—	40.8	—
4	BOD at 27 OC for 3 days	mg / l	30	14.0	—	18.0	—	17	—	16	—	13	—	12	—
5	Oil & Grease	mg / l	10	BDL	BDL	3.3		3.6	BDL	3	BDL	2.7	BDL	3.3	BDL

**Note :- Test Methods,**

TSS - APHA-24th - 2540 D,

COD-APHA-24th Ed 2017- 5220B Open Reflux Method,

BOD (at 27OC for 3 days) - IS: 3025 (P-44)-1993 R-1999 Ad.1 BOD 3-days at 27 °C,

pH - APHA-24th -4500-H+B Electrometric Method

O & G - APHA-24th Ed 2023- 5520 B Liquid Liquid Partition Gravimetric method

## Manual Ambient Air Quality Data (In-House Monitoring)

Sampling Station/ Location		AAQ 1 : Near AWRS				AAQ - 2 : Near Brick Plant				AAQ -3 : China Colony			
Sampling Date	Analysis Starting Date	Parameters				Parameters				Parameters			
		PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>x</sub>
		µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
03.10.2023	04.10.2023	45.3	30.4	8.7	13.7	43.6	25.4	10.2	16.9	41.2	35.2	11.6	16.9
06.10.2023	07.10.2023	53.0	34.3	10.0	15.4	64.5	47.6	9.9	17.5	49.5	28.1	11.2	16.4
09.10.2023	10.10.2023	50.8	39.7	7.7	14.3	32.6	12.7	9.3	17.7	46.6	30.2	10.2	18.6
13.10.2023	14.10.2023	76.8	36.8	10.3	15.9	48.9	18.8	10.6	18.9	26.6	17.8	9.1	20.7
16.10.2023	17.10.2023	49.7	31.3	10.0	15.4	58.7	24.7	10.7	14.3	49.4	28.7	8.5	19.5
20.10.2023	21.10.2023	22.7	15.4	10.5	18.1	66.8	16.7	9.8	17.1	43.2	19.4	9.7	16.8
27.10.2023	28.10.2023	54.0	27.7	9.6	17.6	43.4	23.4	8.6	16.3	56.9	15.5	13.6	23.2
30.10.2023	31.10.2023	42.6	30.7	9.2	16.3	45.3	16.9	8.8	15.8	51.3	18.0	9.2	19.2
03.11.2023	04.11.2023	49.4	30.5	10.6	18.8	56.3	19.9	12.3	20.5	47.9	23.1	11.7	19.4
06.11.2023	07.11.2023	43.8	26.0	10.8	16.6	41.4	28.0	11.0	21.7	50.8	22.7	10.6	15.1
10.11.2023	11.11.2023	38.7	14.7	8.3	15.3	47.6	14.3	12.7	22.0	67.9	26.1	13.6	24.4
13.11.2023	14.11.2023	33.1	27.7	11.4	17.6	64.8	16.1	15.9	23.5	45.9	23.1	15.8	26.9
17.11.2023	18.11.2023	76.9	13.8	13.7	23.2	60.5	26.5	13.9	30.7	33.3	18.0	16.8	28.8
20.11.2023	21.11.2023	55.7	17.9	14.1	26.1	58.1	22.3	16.2	24.4	44.9	29.2	17.4	30.1
24.11.2023	25.11.2023	59.7	27.1	11.0	18.7	67.4	33.6	14.2	27.6	69.2	30.2	16.2	25.1
27.11.2023	28.11.2023	69.9	30.7	9.2	15.6	64.4	22.9	9.1	15.0	52.9	24.5	9.3	20.8
01.12.2023	02.12.2023	50.2	27.8	10.2	16.6	59.0	25.9	11.6	20.0	45.2	25.1	10.2	27.4
04.12.2023	05.12.2023	46.3	26.5	8.0	14.6	43.9	29.3	10.0	16.6	55.7	16.2	9.9	15.9
08.12.2023	09.12.2023	55.0	14.7	12.3	17.3	64.5	25.1	12.7	17.8	51.1	19.7	11.2	18.0
11.12.2023	12.12.2023	42.4	19.2	9.0	11.5	61.3	16.9	10.2	15.0	38.1	16.3	7.1	13.0
15.12.2023	16.12.2023	78.6	23.6	10.3	14.6	49.5	25.7	14.0	21.5	62.6	25.8	13.8	20.8
18.12.2023	19.12.2023	50.0	31.4	9.9	17.4	53.5	12.4	8.7	13.7	43.9	14.5	10.1	14.5
22.12.2023	23.12.2023	47.6	24.9	10.7	20.2	43.1	11.5	10.6	14.3	47.3	15.7	11.0	15.0
25.12.2023	26.12.2023	55.2	37.8	9.6	15.0	32.6	17.8	11.4	18.4	35.2	12.2	9.7	12.7
29.12.2023	30.12.2023	64.6	27.2	9.2	15.6	43.4	17.1	9.1	14.3	42.5	15.3	18.5	26.4
01.01.2024	02.01.2024	57.0	37.1	14.5	20.8	59.8	30.2	9.7	15.0	53.6	32.2	11.5	23.9
05.01.2024	06.01.2024	56.5	29.8	9.2	14.0	55.1	31.5	10.0	16.6	57.8	33.9	13.5	20.1
08.01.2024	09.01.2024	58.9	30.5	6.9	10.6	54.6	29.3	11.6	14.2	55.3	34.0	9.4	15.3
12.01.2024	13.01.2024	48.8	31.0	8.6	15.6	54.1	26.2	10.5	16.9	62.2	37.9	8.2	16.2
15.01.2024	16.01.2024	58.7	27.7	8.9	13.3	61.1	33.7	8.8	13.2	56.6	35.9	11.5	27.2
19.01.2024	20.01.2024	57.6	15.3	10.2	15.6	60.6	34.9	11.0	13.4	61.1	36.7	8.7	11.4
22.01.2024	23.01.2024	61.4	36.6	8.1	10.9	53.0	27.3	13.1	15.6	58.2	32.6	10.8	11.7
24.01.2024	25.01.2024	59.5	42.1	11.0	12.2	59.1	30.7	9.9	14.6	59.9	36.8	10.2	12.7
29.01.2024	30.01.2024	59.2	28.7	17.4	11.3	56.9	28.4	12.1	18.6	54.2	30.9	8.1	9.4
02.02.2024	03.02.2024	68.2	32.1	8.1	12.8	62.1	29.7	9.7	12.4	73.6	22.7	9.9	13.5
05.02.2024	06.02.2024	74.4	34.5	7.9	13.9	67.0	34.2	8.7	13.0	71.3	34.4	7.2	11.4
09.02.2024	10.02.2024	76.3	35.8	8.8	13.2	71.2	38.4	12.7	15.6	57.2	23.3	7.1	15.9
12.02.2024	13.02.2024	70.2	32.7	9.3	14.5	76.3	34.9	11.9	15.4	69.7	27.0	9.8	15.4
16.02.2024	17.02.2024	67.8	27.2	11.3	13.1	69.7	36.8	9.3	13.8	72.6	36.4	8.5	12.8
19.02.2024	20.02.2024	78.0	37.1	10.7	14.4	81.4	51.4	10.2	12.4	70.7	29.8	12.0	14.2
23.02.2024	24.02.2024	75.3	35.3	7.6	10.2	73.4	30.3	10.9	14.7	85.7	39.9	8.2	12.0
26.02.2024	27.02.2024	84.6	40.3	10.6	11.6	67.9	28.5	9.8	13.9	77.5	32.5	11.2	12.6
01.03.2024	02.03.2024	68.2	28.7	7.9	13.9	72.0	31.3	8.1	10.9	64.7	23.6	9.6	12.6
04.03.2024	05.03.2024	63.4	26.7	9.8	13.2	66.4	27.4	8.2	12.2	73.6	32.4	7.2	12.7
08.03.2024	09.03.2024	71.9	29.1	8.7	13.0	65.3	28.5	12.1	15.6	67.9	24.7	7.0	15.6
11.03.2024	12.03.2024	63.6	28.8	9.2	14.3	70.1	32.2	10.6	14.3	69.9	29.8	9.7	14.5
15.03.2024	16.03.2024	67.0	27.3	10.4	12.1	63.3	28.8	9.5	12.8	62.1	28.5	7.9	12.0
18.03.2024	19.03.2024	69.3	29.8	10.4	14.0	67.8	30.0	10.4	12.6	61.6	27.6	10.4	12.3



22.03.2024	23.03.2024	64.8	24.2	9.2	12.4	62.7	25.3	10.7	14.3	72.6	30.5	8.7	12.0
26.03.2024	27.03.2024	71.8	32.7	8.9	14.9	68.3	29.8	10.7	14.3	66.6	27.7	9.9	16.1
29.03.2024	30.03.2024	73.8	32.9	11.1	15.0	74.6	32.1	10.1	14.3	67.5	26.6	10.7	13.9
<b>Max</b>		<b>84.6</b>	<b>42.1</b>	<b>17.4</b>	<b>26.1</b>	<b>81.4</b>	<b>51.4</b>	<b>16.2</b>	<b>30.7</b>	<b>85.7</b>	<b>39.9</b>	<b>18.5</b>	<b>30.1</b>
<b>Min</b>		<b>22.7</b>	<b>13.8</b>	<b>6.9</b>	<b>10.2</b>	<b>32.6</b>	<b>11.5</b>	<b>8.1</b>	<b>10.9</b>	<b>26.6</b>	<b>12.2</b>	<b>7.0</b>	<b>9.4</b>
<b>Average</b>		<b>59.6</b>	<b>29.1</b>	<b>10.0</b>	<b>15.1</b>	<b>59.0</b>	<b>26.9</b>	<b>10.8</b>	<b>16.5</b>	<b>56.9</b>	<b>26.6</b>	<b>10.6</b>	<b>17.3</b>
<b>NAAQMS Standard</b>	<b>24 Hourly</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>	<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>
	<b>Annual</b>	<b>60</b>	<b>40</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>40</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>40</b>	<b>20</b>	<b>30</b>

**Note :-**

1. Schedule monitoring not done due to rain on 18-19.08.2023, 08-09.09.2023 and 15-16.10.2023
2. Tested results are well within the permissible limits of National Ambient Air Quality Monitoring Stanadard (NAAQMS )
3. The data is referring only to the tested sample and for applicable parameter and report submitted to MPCB Board  
monthwise
4. This data is not to be reproducing wholly or in part, and can

**ISO-KINETIC STACK MONITORING DATA (IN-HOUSE LAB)**

Power Plant				Unit # 1						Unit # 2					
SI	Parameters	Units	MPCB Standards	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
1	Height of Stack	Meter	-	275	275	275	275	275	275	275	275	275	275	275	275
2	Diameter of Stack	Meter	-	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
3	Flue Gas Temperature	0 C	-	129	122	124	119	121	120	130	125	125	120	122	121
4	Flue Gas Velocity	m/sec :	-	22.75	22.61	22.83	23.11	23.02	22.25	22.69	22.63	23.06	23.48	23.69	22.67
5	Flow of Exit Gas at NTP	Nm3/Hr	-	2512917	2541693	2553554	2616808	2593538	2513896	2499482	2524100	2572165	2652352	2662782	2554339
6	PM	Mg/Nm3	50	39.9	38.2	40.3	40.0	39.0	35.0	34.0	37.2	39.0	38.8	37.4	40.0
7#	SO2	Mg/Nm3	200#	849.1	756.9	865.2	864.6	812.4	815.1	859.7	798.0	898.0	898.2	848.2	780.4
8	NOx	Mg/Nm3	450	319.9	311.3	329.2	330.4	331.5	315.2	286.0	325.8	293.7	294.1	304.9	270.7
9##	Mercury	Mg/Nm3	0.03	0.0146	0.0146	0.0146	0.0139	0.0139	0.0147	0.0151	0.0151	0.0151	0.0149	0.0149	0.014
Power Plant				Unit # 3						Unit # 4					
SI	Parameters	Units	MPCB Standards	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
1	Height of Stack	Meter	-	275	275	275	Shutdown	275	275	275	275	275	275	275	275
2	Diameter of Stack	Meter	-	7.4	7.4	7.4		7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
3	Flue Gas Temperature	0 C	-	134	123	125		120	122	118	122	120	120	120	123
4	Flue Gas Velocity	m/sec :	-	22.78	22.41	23.03		22.90	23.73	22.09	22.95	22.21	23.11	22.44	22.56
5	Flow of Exit Gas at NTP	Nm3/Hr	-	2484831	2511979	2568926		2586614	2667278	2507800	2579128	2509581	2611171	2534886	2529049
6	PM	Mg/Nm3	50	38.2	30.2	37.0		36.1	30.1	39.8	39.7	40.9	41.2	38.2	32.6
7#	SO2	Mg/Nm3	200#	799.4	805.1	788.6		824.7	841.5	818.7	835.6	840.8	839.9	787.4	749.7
8	NOx	Mg/Nm3	450	327.4	293.0	320.1		324.4	301.2	302.4	304.6	300.3	299.8	318.4	292.1
9##	Mercury	Mg/Nm3	0.03	0.0153	0.0153	0.0153		0.0144	0.0149	0.0138	0.0138	0.0138	0.0143	0.0143	0.0139
Power Plant				Unit # 5											
SI	Parameters	Units	MPCB Standards	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24						
1	Height of Stack	Meter	-	275	275	275	275	275	275						
2	Diameter of Stack	Meter	-	7.4	7.4	7.4	7.4	7.4	7.4						
3	Flue Gas Temperature	0 C	-	119	124	124	121	125	125						
4	Flue Gas Velocity	m/sec :	-	22.12	22.28	22.40	22.57	22.98	23.00						
5	Flow of Exit Gas at NTP	Nm3/Hr	-	2505081	2492128	2505485	2543028	2562902	2565221						
6	PM	Mg/Nm3	50	30.7	41.8	43.3	42.7	41.4	38.9						
7#	SO2	Mg/Nm3	200#	736.4	865.8	803.2	812.5	886.9	799.7						
8	NOx	Mg/Nm3	450	342.0	342.6	353.7	365.5	359.0	335.4						
9##	Mercury	Mg/Nm3	0.03	0.0150	0.0150	0.0150	0.0137	0.0137	0.0144						

**Note:** 1. Test Method : PM - IS 11255 (Part- 1):1985, SO2- IS 11255 (Part 2) 1985, NOx- IS 11255 (Part 7) 2005, Hg -USEPA - 0060  
2. The report is referring only to the tested sample and for applicable parameter.  
3. The sample will be destroyed after retention time unless otherwise specified specially.  
4. This report is not to be reproducing wholly or in part, and can't be used as evidence in court of law.  
5 # As per MoEF&CC Notification the SO2 Limit will be applicable after installation of FGD (March 2023-March 2024)  
6## Mercury monitoring & analysis is being done on quaterly basis through third party.

# Maharashtra Pollution Control Board

Site Name: M/s.Adani Power Limited

From Date: 2023/10/01 To Date: 2024/03/31

Report Name: Custom Report

Report Created by APMPL on 2024-05-11 10:12:43

Sl No.	Time	CAAQMS-1 PM10 - (ug/m3)	CAAQMS_1- PM2.5 - (ug/m3)	CAAQMS_1- NOx - (ug/m3)	CAAQMS_1- SO2 - (ug/m3)	CAAQMS_2- PM10 - (ug/m3)	CAAQMS_2- PM2.5 - (ug/m3)	CAAQMS_2- NOx - (ug/m3)	CAAQMS_2- SO2 - (ug/m3)	CAAQMS_3- PM10 - (ug/m3)	CAAQMS_3- PM2.5 - (ug/m3)	CAAQMS_3- NOx - (ug/m3)	CAAQMS_3- SO2 - (ug/m3)
1	2023-10-01	67.28	28.72	25.08	16.24	41.58	21.37	21.01	16.13	58.94	38.49	24.28	20.13
2	2023-10-02	66.3	28.46	24.81	16.05	41.76	20.75	20.88	15.99	66.17	36.9	23.95	19.96
3	2023-10-03	55.36	23.64	22.12	13.69	40.88	19.88	19.44	13.99	56.99	37.96	22.21	18.72
4	2023-10-04	57.17	20.99	20.83	15.21	39.22	20.14	13.69	12.57	72.34	42.23	25.57	22.99
5	2023-10-05	55.04	18.62	21.95	15.61	46.54	19	15.77	9.73	80.43	47	29.49	26.55
6	2023-10-06	62.14	25.89	28.06	19.31	59.47	21.58	15.77	12.91	73.43	NA	31.45	22.35
7	2023-10-07	67.48	28.95	33.96	21.79	59.11	20.67	19.14	10.14	69.42	NA	26.66	20.46
8	2023-10-08	67.52	28.93	33.83	21.48	58.79	20.56	21.45	10.2	72.53	NA	26.69	20.44
9	2023-10-09	73.21	29.21	30.55	18.54	58.92	21.59	19.52	12.17	79.25	NA	30.55	17.55
10	2023-10-10	73.22	28.71	30.59	18.56	59.18	21.71	19.51	12.23	78.12	NA	30.59	17.55
11	2023-10-11	73.23	28.62	30.5	18.59	59.74	22.25	19.56	12.33	79.26	NA	34.63	17.49
12	2023-10-12	68.01	28.62	28.04	16.52	59.7	20.48	17.2	10.84	73.25	NA	27.41	16.49
13	2023-10-13	73.67	28.77	30.6	18.81	59.87	21.38	19.45	14.5	74.67	NA	31.97	18.86
14	2023-10-14	69.4	34.46	30.62	16.04	60.17	28.83	21.24	16.47	79.6	NA	34.72	21.68
15	2023-10-15	69.66	34.43	30.74	16.29	60.13	28.94	21.09	16.65	79.61	NA	33.87	21.8
16	2023-10-16	75.2	34.46	34.49	20.89	59.97	29.4	24.93	19.34	80.71	NA	30.09	24.58
17	2023-10-17	62.82	34.34	30.12	15.88	59.62	27.55	22.15	16.15	81.53	NA	30.1	24.57
18	2023-10-18	62.81	34.2	30.1	15.94	59.08	26.93	22.02	16.17	81.47	NA	30.43	24.57
19	2023-10-19	59.24	34.46	27.4	13	58.91	25.61	19.34	13.39	81.76	NA	30.11	24.57
20	2023-10-20	59.23	34.46	27.35	13.1	58.98	25.72	19.56	13.41	81.1	NA	30.07	24.55
21	2023-10-21	57.26	34.46	26.81	12.78	58.44	24.76	18.24	12.57	72.97	NA	26.09	22.11
22	2023-10-22	53.87	34.46	25.61	12.03	58.67	23.87	16	11.14	69.21	NA	24.23	21.2
23	2023-10-23	53.87	34.46	25.59	12.16	58.84	23.88	15.98	11.15	69.01	NA	24.27	21.2
24	2023-10-24	56.92	35.55	26.61	13.69	57.83	23.99	16.01	11.16	69.22	NA	24.24	21.21
25	2023-10-25	62.51	37.38	31.29	18.7	55.43	21.6	14.66	12.29	75.37	NA	30.68	31.31
26	2023-10-26	64.64	38.9	32.3	19.8	56.54	21.58	14.58	12.3	77.01	NA	31.61	29.93
27	2023-10-27	67.19	40.7	33.4	20.69	55.86	21.52	14.65	12.32	78.84	NA	32.63	28.43
28	2023-10-28	71.31	41	31.92	18.97	61.4	23.58	12.41	11.04	82.83	NA	30.62	25.78
29	2023-10-29	73.14	41.16	31.25	18.59	63.51	25	11.41	10.46	84.61	NA	29.71	24.59
30	2023-10-30	73.14	41.17	31.22	19.99	63.92	26.02	11.43	10.47	84.62	NA	30.62	24.58
31	2023-10-31	73.24	45.5	32.24	15.85	65.69	27.51	13.25	11.25	83.35	50.37	30.57	25.87
32	2023-11-01	73.37	50.88	33.57	16.97	67.81	28.96	15.4	12.18	81.77	49.81	31.63	27.47
33	2023-11-02	71.06	46	31.87	15.83	64.95	27.15	14.45	12.59	79.55	49.19	30.1	26.61
34	2023-11-03	68.25	40	29.72	14.43	61.81	25.59	13.24	13.12	76.76	49.54	28.19	25.55
35	2023-11-04	65.8	38.45	31.21	15.66	60.24	24.54	14.38	14.44	74.7	46.49	26.94	24.01
36	2023-11-05	64.42	37.58	32.02	16.33	59.04	23.06	15.16	15.37	73.37	42.33	26.25	23.14
37	2023-11-06	59.92	34.65	30.6	15.28	56.81	23.15	15.04	13.5	69.83	41.61	27.66	21.73
38	2023-11-07	58.31	33.61	30.12	14.91	55.89	23.38	15	12.76	68.44	42.33	28.19	21.22
39	2023-11-08	60.6	35.23	31.25	16.39	56.98	24.69	16.6	13.92	70.72	42.2	30.07	21.22
40	2023-11-09	64.41	42.25	31.95	17.79	54	23.55	19.99	13.13	72.97	46.44	30.56	21.02
41	2023-11-10	67.61	45.53	33.35	18.62	71.03	42.41	20.19	19.17	76.16	49.06	31.62	21.51
42	2023-11-11	70.05	47.16	36.84	20.2	69.1	44.55	13.19	18.91	77.31	49.22	30.54	22.57
43	2023-11-12	72.37	48.78	39.74	21.64	67.74	44.95	10.99	18.7	82.69	46.17	30.94	28.41
44	2023-11-13	84.33	58.45	43.25	27.2	67.74	41.84	10.89	18.7	89.85	52.02	34.25	34.4
45	2023-11-14	84.33	58.45	43.24	27.22	67.74	41.56	10.86	18.71	89.85	52.04	34.24	34.4
46	2023-11-15	78.66	52.14	39.17	24.14	67.74	40.87	10.7	18.7	89.85	52.07	34.26	34.4
47	2023-11-16	75.56	48.84	36.94	22.45	78.68	37.68	18.42	12.17	89.84	52.01	34.25	34.4
48	2023-11-17	75.56	48.84	36.95	22.47	78.51	33.06	22.42	14.72	88.91	51.13	34.24	34.4
49	2023-11-18	75.56	48.84	36.96	22.46	78.55	31.47	22.51	14.72	89.45	50.61	34.23	34.4
50	2023-11-19	75.56	48.84	36.94	22.47	78.58	30.5	22.62	14.73	89.68	50.67	34.25	34.4
51	2023-11-20	75.56	47.69	35.87	21.35	73.13	30.57	18.93	14.48	89.58	51.11	34.24	34.41
52	2023-11-21	75.56	45.92	34.24	19.61	64.07	26.06	12.74	14.08	89.85	52.08	34.23	34.42
53	2023-11-22	75.56	45.92	34.24	19.63	64.17	29.68	12.71	14.08	89.85	52.08	34.25	34.42
54	2023-11-23	74.12	44.63	33.86	18.95	62.74	33.1	13.23	14.65	87.55	50.88	33.05	33.83
55	2023-11-24	70.89	41.69	33.06	17.4	59.45	34.8	14.65	15.96	82.29	48.09	30.34	32.49
56	2023-11-25	70.88	41.68	33.06	17.41	59.45	35.72	14.65	15.96	82.29	48.09	30.36	32.49
57	2023-11-26	70.88	41.67	33.06	17.41	59.45	33.94	14.56	15.96	82.29	48.09	30.36	32.49
58	2023-11-27	70.88	41.68	33.07	17.42	59.45	35.97	14.34	15.97	82.3	48.09	30.35	32.49
59	2023-11-28	63.39	34.98	30.55	16.38	59.43	32.33	14.24	15.98	70.22	39.25	28.51	29.11

60	2023-11-29	53.77	26.54	27.24	15.08	58.02	24.03	14.58	15.99	52.31	28.09	26.17	24.79
61	2023-11-30	53.76	26.54	27.33	15.08	59.15	27.75	14.85	16	60.52	28.09	26.15	24.79
62	2023-12-01	53.77	26.52	27.25	15.09	59.45	31.6	15.02	16.02	60.61	28.09	26.15	24.79
63	2023-12-02	53.76	26.5	27.25	15.09	58.95	26.46	14.9	16.03	60.19	28.09	26.17	24.79
64	2023-12-03	53.76	26.54	27.2	15.09	59.45	32.39	14.71	16.03	60.61	28.09	26.15	24.79
65	2023-12-04	57.19	29.31	28.74	16.13	58.65	30.47	16.37	16.92	62.98	31.66	28.27	27.43
66	2023-12-05	61.14	32.56	30.36	17.34	55.03	16.79	19.98	17.91	45.65	32.72	30.73	30.57
67	2023-12-06	63.83	32.73	33.14	19.49	52.98	12.67	22.25	17.9	51.19	29.03	32.19	29.11
68	2023-12-07	64.74	32.8	34.06	20.21	52.57	10.06	22.93	17.91	62.7	27.88	32.68	28.64
69	2023-12-08	64.74	32.8	34.14	20.21	54.19	13.14	22.95	17.91	76.93	31.11	32.69	28.64
70	2023-12-09	62.11	30.64	32.83	19.06	56.72	15.47	23.84	19.31	80.49	30.67	31.7	27.64
71	2023-12-10	59.7	28.72	31.62	18.02	56.13	15.74	23.36	20.01	79.37	30.38	30.75	26.72
72	2023-12-11	61.65	30.4	30.24	16.06	56.66	18.89	23.46	20.02	79.64	31.55	30.76	26.73
73	2023-12-12	65.09	33.3	29.49	14.68	58.57	20.49	24.44	20.64	80.92	32.99	31.46	27.53
74	2023-12-13	68.15	35.9	31.89	16.98	63.05	19.17	26.79	22.25	84.02	35.32	33.2	29.62
75	2023-12-14	68.14	35.9	31.85	17.11	62.86	17.26	26.48	22.25	84.02	33.81	33.18	29.62
76	2023-12-15	70.85	34.23	33.76	19.84	65.01	15.92	25.4	20.32	86.24	35.1	35.14	30.9
77	2023-12-16	72.28	33.38	34.77	21.32	64.72	13.7	24.71	19.46	87.28	34.6	36.11	31.54
78	2023-12-17	72.41	33.49	34.71	21.56	66.43	16.6	24.9	19.52	87.17	36.25	36	31.46
79	2023-12-18	75.88	36.29	32.22	23.57	67.84	18.41	27.64	21.32	82.41	36.11	32.21	28.66
80	2023-12-19	75.89	36.29	32.21	23.76	67.25	17.37	27.77	21.32	82.31	35.23	32.21	28.66
81	2023-12-20	72.97	33.31	30.46	21.68	63.75	17.82	25.2	19.14	78.72	33.57	30.29	25.51
82	2023-12-21	71.47	31.81	29.54	20.64	63.03	19.25	24.63	18.53	76.74	33.39	29.3	23.85
83	2023-12-22	71.47	31.81	29.56	20.58	63.04	19.33	24.65	18.53	76.74	33.21	29.29	23.85
84	2023-12-23	68.75	29.61	30.56	22.78	59.89	23.62	22	19.06	73.58	31.89	27.99	25.78
85	2023-12-24	67.43	28.55	31.02	23.81	58.29	26.58	21.63	18.58	72.02	31.1	27.38	26.73
86	2023-12-25	67.43	28.55	31	23.77	58.29	25.96	21.23	18.59	72.02	31.1	27.36	26.74
87	2023-12-26	65.5	27.77	30.02	22.59	57.04	25.03	19.58	17.85	69.81	29.08	27.35	24.82
88	2023-12-27	62.4	26.55	28.37	20.72	55.08	22.03	18.83	16.67	68.69	28.1	27.34	23.86
89	2023-12-28	64.03	27.59	29.54	22.21	56.59	24.01	20.78	17.68	70.64	30.26	28.66	24.84
90	2023-12-29	67.16	29.59	31.93	25.08	59.52	26.48	22.72	19.6	74.37	34.49	31.26	26.75
91	2023-12-30	67.16	29.59	31.93	25.05	59.52	26.48	23.01	19.61	74.36	34.49	31.25	26.74
92	2023-12-31	67.16	29.59	31.94	25.03	59.52	26.48	22.95	19.62	74.37	34.49	31.26	26.75
93	2024-01-01	70.06	29.64	33.46	25.98	62.3	28.5	24.1	21.52	76.07	36.5	32.57	28.03
94	2024-01-02	71.56	29.66	34.24	26.48	63.77	29.47	24.56	22.53	76.91	37.49	33.19	28.68
95	2024-01-03	71.57	29.67	34.26	26.45	63.77	29.03	24.82	23.23	76.92	37.49	33.21	28.68
96	2024-01-04	68.89	29.61	32.7	23.97	61.29	27.75	22.74	22.33	73.07	34.59	31.74	26.9
97	2024-01-05	66.72	29.57	32.1	22.19	59.45	26.83	21.17	21.68	70.67	32.89	30.24	25.81
98	2024-01-06	63.84	29.49	33.79	20.93	57.54	6.68	22.42	20.14	70.67	32.89	30.25	25.8
99	2024-01-07	63.84	29.49	33.77	20.91	57.54	NA	21.46	20.23	70.67	32.86	30.62	25.79
100	2024-01-08	67.49	29.57	35.18	22.79	57.54	NA	23.14	20.14	72.24	34.75	32.24	27.41
101	2024-01-09	70.22	29.63	36.16	24.17	57.54	NA	24.52	20.07	73.5	36.18	33.82	28.68
102	2024-01-10	68.95	29.53	34.5	23.28	57.66	NA	28.33	21.12	68.04	49.43	26.42	17.38
103	2024-01-11	70.48	29.51	34.62	25.2	57.73	NA	32.67	22.02	69.44	49.3	26.59	21.44
104	2024-01-12	71.83	36.33	33.36	24.59	69.25	NA	28.48	20.37	79.72	47.89	26.42	19.98
105	2024-01-13	74.49	45.53	32.62	23.71	78.46	NA	25	19.29	89.99	47.09	26.42	19.98
106	2024-01-14	74.5	45.56	32.62	23.71	79.33	NA	25.03	19.32	91.66	45.98	26.41	20.01
107	2024-01-15	74.5	45.56	32.58	23.72	80.85	NA	24.95	19.33	76.86	43.27	28.78	26.02
108	2024-01-16	71.17	40.28	32.51	24.89	69.68	NA	24.16	20.91	74.48	40.52	29.7	25.25
109	2024-01-17	67.96	35.09	32.5	26.03	60.74	17.13	23.51	22.52	72.43	41.03	30.62	24.51
110	2024-01-18	67.96	35.09	32.23	25.98	60.73	33.48	23.61	22.51	72.43	40.97	30.62	24.58
111	2024-01-19	67.96	35.09	31.92	25.87	60.47	31.88	23.59	22.63	72.43	39.99	30.62	24.62
112	2024-01-20	67.97	35.1	32.11	25.92	60.74	33.7	23.55	22.86	72.43	40.88	30.62	24.6
113	2024-01-21	67.97	35.09	31.94	25.92	60.74	34.26	23.51	23.16	72.44	41.07	30.61	24.72
114	2024-01-22	66.07	33.42	30.33	26.6	59.23	32.09	22.23	22.7	70.56	40.77	29.73	22.5
115	2024-01-23	53.29	27.91	27.53	25.07	50.18	27.29	19.84	20.84	56.9	40.91	26.93	20.43
116	2024-01-24	45.62	25.06	25.66	23.63	44.33	24.1	19.21	19.7	48.56	41.12	25.74	20.04
117	2024-01-25	50.45	25.11	26.65	22.51	45.83	24.67	19.72	21.14	54.28	32.29	27.34	21.16
118	2024-01-26	54.32	25.16	27.39	21.83	49.25	26.8	19.93	22.23	58.59	30.84	27.56	22
119	2024-01-27	57.57	25.2	25.7	23.61	50.42	27.43	17.6	22.21	64.14	30.54	25.74	23.77
120	2024-01-28	57.56	25.19	25.72	23.61	50.63	27.2	17.62	22.14	64.14	30.46	25.75	23.9
121	2024-01-29	59.84	25.21	28.85	23.31	52.37	27.69	25.38	18.34	65.85	31.34	27.78	23.28
122	2024-01-30	64.44	27.11	30.75	23.81	51.92	27.37	31.98	14.4	67.82	31.84	31.17	21.22
123	2024-01-31	66.04	28.55	29.36	24.49	50.91	26.9	29.59	15.13	67.82	31.74	31.28	21.23
124	2024-02-01	65.86	28.46	29.34	24.39	50.18	25.58	29.49	14.37	67.93	30.48	29.5	21.15
125	2024-02-02	62.17	26.52	27.93	22.55	50.02	23.59	27.07	12.62	70.65	28.26	27.92	19.25
126	2024-02-03	62.17	26.53	27.92	22.55	49.52	22.36	27.06	12.61	70.66	26.97	27.92	19.24
127	2024-02-04	62.17	26.53	27.92	22.54	49.77	23.04	27.09	12.61	69.13	27.42	27.93	19.25
128	2024-02-05	63.18	27.16	28.43	22.88	50.85	24.46	26.53	13.14	70.74	29.87	27.33	19.65

129	2024-02-06	64.09	28.46	30.77	23.34	51.92	23.88	24.69	14.86	72.19	32.13	26.07	21.72
130	2024-02-07	61.37	27.55	31.62	22.62	52.69	22.74	24.66	15.25	69.82	30.16	26.96	22.68
131	2024-02-08	61.36	27.55	31.55	22.61	47.92	20.83	24.62	11.49	69.81	28.07	26.96	22.67
132	2024-02-09	61.37	27.55	31.58	22.6	46	20.84	24.63	9.2	69.57	27.85	26.95	22.66
133	2024-02-10	61.55	27.76	31.68	23.02	51.61	23.02	24.65	9.88	69.58	29.64	26.97	22.68
134	2024-02-11	63.17	29.55	32.57	26.45	52.09	24.04	24.66	0.15	68.44	30.89	26.98	22.67
135	2024-02-12	63.17	29.56	32.63	26.44	47.8	22.25	24.68	10.88	57.69	28.46	26.97	22.67
136	2024-02-13	63.17	29.55	32.72	26.44	50.23	22.52	24.68	14.24	63.72	28.87	26.97	22.68
137	2024-02-14	65.37	30.97	34.43	27.8	49.66	22.57	26.12	17.43	68.49	28.48	27.89	24.96
138	2024-02-15	67.83	32.55	36.37	29.31	53.11	27.14	27.72	18.93	75.49	32.07	28.94	27.54
139	2024-02-16	66.45	31.83	35.23	28.28	53.04	25.84	27.73	19.01	74.12	31.04	28.25	26.5
140	2024-02-17	63.97	30.55	33.4	26.44	51.73	24.31	27.73	19.12	71.2	30.96	27.03	24.64
141	2024-02-18	63.97	30.55	33.33	26.45	51.92	24.66	27.76	19.2	68.97	30.97	27.05	24.64
142	2024-02-19	65.2	31.17	33.98	27.08	52.85	23.68	27.77	19.75	67.87	31.82	27.73	25.28
143	2024-02-20	67.35	31.75	34.92	27.09	56.46	25.41	26.7	23.1	74.72	33.5	31.66	28.85
144	2024-02-21	68.97	32.59	35.43	27.37	58.53	26.94	24.97	24.76	75.8	34.52	34.23	28.3
145	2024-02-22	66.06	31.26	34.32	24.46	64.19	25.08	22.75	23.6	73.66	34.8	33.15	24.62
146	2024-02-23	66.06	31.27	34.35	24.45	64.29	25.43	22.72	23.61	74.75	34.81	33.14	24.61
147	2024-02-24	68.08	30.8	33.56	23.29	63.06	23.99	24.75	19.55	72.95	32.96	32.1	23.77
148	2024-02-25	69.21	30.54	33.13	22.63	62.73	23.97	25.92	17.3	71.91	31.88	31.49	23.26
149	2024-02-26	69.21	30.54	33.18	22.62	62.73	24.56	26	17.35	71.91	31.88	31.49	23.26
150	2024-02-27	66.79	29.21	34.27	24.13	62.73	25.86	26.94	18.03	74.1	32.89	30.1	21.74
151	2024-02-28	64.89	28.17	35.1	25.3	61.09	25.3	27.42	18.43	71.09	33.55	29.16	20.72
152	2024-02-29	66.22	28.74	35.68	26.12	61.95	26.63	28.04	17.9	76.81	34.1	29.69	21.51
153	2024-03-01	69.66	30.2	36.75	28.19	60.28	28.54	29.78	16.56	78.11	35.56	31.11	23.65
154	2024-03-02	68.27	29.32	35.56	27.35	60.2	27.19	28.46	15.81	77.7	33.53	28.55	23.64
155	2024-03-03	66.51	28.18	33.99	26.28	60.17	27.52	26.82	14.87	75.84	30.93	25.29	23.66
156	2024-03-04	66.51	28.19	34.06	26.27	59.69	25.16	26.81	14.91	72.24	30.94	25.28	23.65
157	2024-03-05	66.51	28.19	34.01	26.27	59.38	25.24	26.84	13.21	74.79	30.95	25.29	23.66
158	2024-03-06	66.51	28.19	34.04	26.27	59.62	25.4	26.81	14.3	73.58	30.95	25.29	23.67
159	2024-03-07	69.61	29.93	37.28	28.79	63.16	27.89	28.17	11.94	77	36.91	29.26	21.66
160	2024-03-08	71.04	30.73	38.6	29.95	64.64	28.57	28.8	10.8	78.5	39.72	31.13	20.72
161	2024-03-09	68.35	29.21	36.27	28.5	62.92	27.23	26.95	11.99	73.97	36.2	31.1	20.72
162	2024-03-10	66.78	28.32	34.97	27.64	62.17	27.19	25.84	12.73	72.9	33.22	31.08	20.73
163	2024-03-11	66.77	28.32	34.92	27.63	62.17	27.2	25.88	12.86	72.88	32.81	31.08	20.72
164	2024-03-12	66.78	28.31	35.16	27.64	62.14	27.92	25.78	13.03	72.9	33.23	31.07	20.73
165	2024-03-13	66.78	28.31	34.94	27.67	62.13	26.57	27.77	5.18	72.8	32.35	31.08	20.73
166	2024-03-14	66.78	28.31	35	27.66	62.13	26.04	29.33	8.66	72.85	31.27	31.06	20.73
167	2024-03-15	66.78	28.32	35.07	27.66	62.13	26.32	29.13	8.81	72.9	32.38	31.06	20.74
168	2024-03-16	66.78	28.32	35.01	27.67	62.17	26.96	28.84	8.92	72.9	33.63	31.08	20.72
169	2024-03-17	66.77	28.31	34.97	27.67	61.91	26.5	28.84	8.96	71.73	32.26	31.08	20.72
170	2024-03-18	66.13	29.71	33.12	26.04	60.26	23.67	27.39	10.08	66.72	29.48	30.29	20
171	2024-03-19	63.39	26.82	27.35	22.76	60.41	20.38	32.65	9.98	55.43	26.49	29.07	17.86
172	2024-03-20	67.25	23.34	24.91	16.17	65.99	21.69	36.56	9.76	61.72	28.99	32.29	13.78
173	2024-03-21	71.32	27.9	24.57	14.84	72.74	27.28	20.46	9.68	69.77	32.13	23.84	11.14
174	2024-03-22	71.19	30.91	21.66	17.92	73.51	31.22	22.31	9.53	72.52	35.74	24.63	11.92
175	2024-03-23	71.19	30.59	21.67	17.92	73.54	31.61	22.4	9.54	72.56	37.04	24.58	11.93
176	2024-03-24	71.18	31.35	21.66	17.9	73.54	32.81	22.68	9.53	72.57	37.63	24.63	11.97
177	2024-03-25	71.18	32.7	21.67	17.9	73.49	32.85	23.03	9.52	72.29	37.01	24.41	11.96
178	2024-03-26	71.18	29.02	21.72	17.9	73.43	31.24	22.04	9.5	71.4	36.41	24.59	11.96
179	2024-03-27	71.18	29.01	21.62	17.9	73.54	30.83	19.68	9.5	72.56	36.06	24.35	11.96
180	2024-03-28	71.18	30.18	21.66	17.9	73.53	30.63	19.61	9.5	72.46	36.63	24.55	11.97
181	2024-03-29	71.18	33.63	23.21	17.92	73.54	32.3	19.59	9.47	72.57	38.32	24.69	11.95
182	2024-03-30	71.18	30.65	21.6	17.94	73.54	29.16	19.22	9.44	72.37	35.03	24.55	11.97
183	2024-03-31	71.18	27.91	21.65	17.94	73.54	28.24	19.07	9.43	63.42	33.55	24.58	11.97
184	Prescribed Standards	100	60	80	80	100	60	80	80	100	60	80	80
185	Maximum Value	84.33	58.45	43.25	29.95	80.85	44.95	36.56	24.76	91.66	52.08	36.11	34.42
187	Minimum Value	45.62	18.62	20.83	12.03	39.22	0.02	10.7	0.15	45.65	26.49	22.21	11.14
189	Geometric Mean	66.7	32.89	31.36	21.41	60.18	24.39	21.86	15.85	73.78	36.63	29.44	23.94
190	Median	67.16	30.54	31.95	22.21	59.62	25.4	22.68	15.99	72.95	34.49	30.1	23.9
191	Standard Deviation	6.11	6.93	4.18	4.36	7.72	8.22	5.22	4.43	8.37	7.24	3.01	5.17
194	Data Availability %	100	100	100	100	100	100	100	100	100	86.89	100	100

## ADANI POWER LIMITED

CEMS DAYWISE VALUES FOR THE PERIOD FROM DATE 2023/10/01 TO DATE: 2024/03/31

From Date: 2023/10/01 To Date: 2024/03/31

S. NO.	DATE	UNIT# 1 SOx (mg/nm3)	UNIT# 1 NOx (mg/nm3)	UNIT# 1 PM (mg/nm3)	UNIT# 2 SOx (mg/nm3)	UNIT# 2 NOx (mg/nm3)	UNIT# 2 PM (mg/nm3)	UNIT# 3 SOx (mg/nm3)	UNIT# 3 NOx (mg/nm3)	UNIT# 3 PM (mg/nm3)	UNIT# 4 SOx (mg/nm3)	UNIT# 4 NOx (mg/nm3)	UNIT# 4 PM (mg/nm3)	UNIT# 5 SOx (mg/nm3)	UNIT# 5 NOx (mg/nm3)	UNIT# 5 PM (mg/nm3)						
1	1-Oct-23	795.66	312.16	35.06	SD			777.57	313.29	33.35	772.24	302.01	35.21	785.95	343.64	37.39						
2	2-Oct-23	770.19	303.47	33.64				750.46	305.08	31.63	747.96	295.41	33.86	761.7	336.32	35.9						
3	3-Oct-23	799.93	314.72	35.27				782.88	315.17	33.77	775.02	302.75	35.39	792.33	345.57	37.76						
4	4-Oct-23	844.1	327.21	37.74				819.68	326.78	36.18	813.59	315.01	37.8	821.93	354.15	39.45						
5	5-Oct-23	SD			827.67	300.15	37.7	819.6	326.75	36.18	817.68	316.73	38.13	819.56	352.73	39.08						
6	6-Oct-23				834.85	302.59	38.04	814.64	324.72	35.82	809.42	312.94	37.39	822.81	354.39	39.51						
7	7-Oct-23	812.08	316.83	35.81	788.75	291.96	35.61	821.61	327.12	36.31	822.54	318.4	38.52	837.91	360	40.78						
8	8-Oct-23	851.68	326.67	38.16	744.12	268.09	33.59	838.18	332.67	37.52	832.21	321.07	39.01	839.65	359.55	40.56						
9	9-Oct-23	865.66	330.87	38.92	770.66	279.68	34.94	845.3	334.41	37.84	842.87	323.84	39.54	845.49	360.68	40.63						
10	10-Oct-23	857.96	329.51	38.45	863.08	316.11	39.35	838.26	332.29	37.33	832.6	320.29	38.87	845.87	361.57	40.92						
11	11-Oct-23	874.17	333.67	39.44	864.35	313.59	39.39	854.02	337.52	38.48	837.7	321.47	39.11	851.84	364.23	41.63						
12	12-Oct-23	862.36	334.86	38.6	868.94	318.23	39.6	845.06	334.23	37.81	844.64	324.43	39.69	853.04	363.75	41.41						
13	13-Oct-23	857.7	328.86	38.49	858.14	312.88	39.13	839.5	332.65	37.46	844.97	324.77	39.72	842.69	359.83	40.47						
14	14-Oct-23	854.6	332.01	38.15	850.4	310.15	38.74	842.03	333.92	37.7	840.75	323.01	39.39	840.47	359.18	40.34						
15	15-Oct-23	864.13	331.5	38.89	858.7	311.93	39.17	847.08	335.76	38.06	840.98	323.36	39.48	847.45	361.34	40.79						
16	16-Oct-23	862.61	329.69	38.71	857.89	312.46	39.14	833.83	330.64	37.02	834.69	320.67	38.92	844.9	361.1	40.82						
17	17-Oct-23	851.52	327.78	38.14	849.4	308.81	38.66	831.91	330.53	36.99	815.8	315.05	37.82	832.99	357.63	40.17						
18	18-Oct-23	846.11	328.09	37.72	851.35	313.33	38.79	833.1	330.77	37.01	825.56	317.79	38.36	832	356.72	39.87						
19	19-Oct-23	849.05	327.95	37.9	865.91	319.48	39.41	845.37	335	37.92	848.16	326.26	40.07	849.76	363.22	41.35						
20	20-Oct-23	839.55	325.25	37.33	852.75	312.45	38.79	830.52	330.03	36.89	824.9	317.72	38.35	829.02	356.51	39.94						
21	21-Oct-23	813.69	320.71	36.01	816.79	296.54	37.18	802.97	322.03	35.16	797.61	310.35	36.84	805.22	349.06	38.34						
22	22-Oct-23	836.94	321.32	37.5	835.6	303.11	38.15	813.19	324.38	35.66	812.74	314.81	37.77	821.29	353.97	39.39						
23	23-Oct-23	826.79	323.64	36.65	842.52	311.04	38.33	816.96	325.98	35.98	808.52	313.29	37.41	822.87	355.41	39.8						
24	24-Oct-23	790.83	309.81	34.86	789.79	285.3	35.84	772.84	312.02	33.07	765.91	300.44	34.89	780.19	342.23	37.13						
25	25-Oct-23	799.97	314.47	35.04	813.1	295.96	36.9	790.23	317.4	34.23	787.79	306.76	36.15	803.45	348.96	38.43						
26	26-Oct-23	806.22	315.17	35.57	818.16	299.89	37.14	796.62	319.49	34.66	787.33	306.53	36.14	793.85	345.63	37.67						
27	27-Oct-23	798.23	314.42	35.17	804.04	293.44	36.43	777.82	313.24	33.35	776.9	303.73	35.55	781.45	341.42	36.76						
28	28-Oct-23	799.45	313	35.12	813.46	298.27	36.93	787.65	316.66	34.04	780.9	304.7	35.71	792.5	344.88	37.5						
29	29-Oct-23	808.3	315.43	35.68	803.15	292.37	36.5	787.47	316.8	34.06	780.3	304.87	35.77	788	343.77	37.36						
30	30-Oct-23	809.91	316.09	35.8	819.15	300.7	37.23	793.22	318.27	34.46	791.75	308.34	36.47	805.84	349.09	38.34						
31	31-Oct-23	820.89	317.91	36.37	820.45	296.93	37.3	811.93	324.3	35.66	784.04	304.38	35.65	797.35	346.45	37.84						
32	1-Nov-23	803.96	314.99	35.95	801.26	299.5	37.25	783.39	322.1	35.15	785.41	306.18	36.07	789.2	343.48	37.86						
33	2-Nov-23	817.51	325.3	37.06	820.09	309.39	38.4	810.25	325.23	35.92	808.46	313.67	37.52	802.76	344.81	39.48						
34	3-Nov-23	818.24	323.48	37.35	817.44	306.48	38.16	802.5	327.24	36.27	803.68	313.49	37.5	816.43	347.58	39.35						
35	4-Nov-23	817.87	324.14	37.08	823.06	303.63	38.27	819.82	328.9	36.6	813.09	315.6	37.93	816.97	348.64	39.74						
36	5-Nov-23	804.87	314.77	36.02	800.88	290.71	36.32	782.65	314.86	33.68	780.28	305.04	35.87	791.5	344.63	37.91						
37	6-Nov-23	790.94	313.8	35.53	797.34	292.89	36.52	785.5	317.12	34.15	778.2	306.59	36.1	790.08	342.73	38.07						
38	7-Nov-23	783.25	313.64	34.81	781.82	292.16	36.13	771.55	314.22	33.51	763.99	301.25	35.06	776.69	339.1	37.07						
39	8-Nov-23	798.28	317.65	36.3	798.86	299.09	37.24	784.96	319.17	34.6	787.58	306.8	36.1	791.16	344.72	37.94						
40	9-Nov-23	793.93	315.23	35.49	805.75	294.48	36.72	785.48	316.89	34.07	777.94	304.95	35.79	790.69	344.98	38.05						
41	10-Nov-23	794.92	315.21	35.42	806.62	298.4	37.38	796.06	320.45	34.83	784.43	306.29	36.03	789.04	343.96	38.11						
42	11-Nov-23	783.96	308.41	35.12	786.33	288.22	35.82	755.89	308.36	32.3	757.91	299.22	34.65	776.82	340.66	37.49						
43	12-Nov-23	770.42	304.83	33.63	SD			SD			752.71	297.49	34.32	759.9	334.56	35.78						
44	13-Nov-23	SD									743.11	293.22	33.42	758.6	335.15	35.61						
45	14-Nov-23										762.69	301.46	35.08	768.68	336.76	36.46						
46	15-Nov-23										749.88	296.27	34.06	762.06	336.39	35.89						
47	16-Nov-23	SD			799.6	297.22	37.79	775.44	312.98	33.25	776.2	303.71	35.53	775.34	339.36	36.83						
48	17-Nov-23				786.33	294.7	37.1	794.02	320.31	34.79	790.26	308.35	36.51	SD								
49	18-Nov-23				825.54	299.92	38.38	820.56	328.91	36.68	811.43	316.86	38.14									
50	19-Nov-23				816.23	303.13	37.54	801.53	321.05	34.99	794.15	308.86	36.53									
51	20-Nov-23	SD			800.61	302.66	37.84	797.57	323.01	35.42	796	311.16	37.06									
52	21-Nov-23				779.44	313.46	34.56	786.67	288.1	36.3	773.69	313.34	33.34	774.91	304.27	35.65	SD					
53	22-Nov-23				809.19	321.47	37.01	809.42	305.42	37.83	804.36	322.62	35.27	798.46	311.15	36.98						
54	23-Nov-23				810.96	323.11	37.03	815.5	308.4	38.12	802.83	324.49	35.71	795.81	312.52	37.36						
55	24-Nov-23	806.87	317.44	36.4	809.23	301.42	37.42	799.26	320.95	34.97	791.62	308	36.43	SD								
56	25-Nov-23	802.85	317.77	35.99	809.35	298.32	37.05	793.74	319.02	34.55	785.75	307.12	36.19									
57	26-Nov-23	783.38	310.4	34.45	791.35	291.15	36.02	775.78	313.28	33.27	764.8	299.84	34.74									
58	27-Nov-23	766.36	302.76	33.43	766.15	276.75	34.77	752.12	305.97	31.72	723.71	285.14	31.86									
59	28-Nov-23	766.62	302.39	33.39	773.85	281.96	35.07	752.75	306.08	31.76	SD			SD								
60	29-Nov-23	SD			783.38	287.74	36.09	767.59	311.47	32.95												
61	30-Nov-23				770.98	282.84	35.25	760.47	308.07	32.19												
62	1-Dec-23				790.34	289.58	35.81	764.49	309.19	32.45												
63	2-Dec-23	SD			781.64	284.37	35.42	760.95	308.51	32.25	SD											
64	3-Dec-23				772.33	282.07	34.98	744.55	302.93	31.14												
65	4-Dec-23				787.73	285.29	35.75	765.14	309.51	32.55												
66	5-Dec-23				794.48	287.7	36.05	773.73	312.29	33.16												
67	6-Dec-23	SD			804.08	293.04	36.48	780.43	314.58	33.58	SD											
68	7-Dec-23	SD			789.13	287.48	35.74	771.77	312.28	33.13												
69	8-Dec-23				794.23	292.29	36	771.93	312.12	33.06												
70	9-Dec-23				788.24	285.89	35.76	762.53	308.79	32.39												
71	10-Dec-23	SD			799.43	290.57	36.23	775.8	312.95	33.32												
72	11-Dec-23				805.58	294.25																

76	15-Dec-23	788.3	313.43	34.56	801.62	291.31	36.46	785.81	316.51	33.98	763.56	299.33	34.67	784.78	342.75	34.34									
77	16-Dec-23	862.22	331.3	38.83	864.1	316.83	39.37	840.53	332.95	37.52	824.71	318.59	38.49	850.51	362.88	38.83									
78	17-Dec-23	869.88	333.54	39.25	867	316.16	39.6	837.23	331.71	37.28	835.29	323.05	39.44	846.58	362.07	39.25									
79	18-Dec-23	852.87	329.14	38.24	860.11	313.85	39.13	832.21	330.54	37	819.71	317.06	38.17	837.9	358.59	38.24									
80	19-Dec-23	859.75	332.38	38.53	864.77	316.58	39.36	838.87	332.56	37.43	828.64	320.77	38.98	840.55	359.9	38.53									
81	20-Dec-23	856.74	328.83	38.51	861.27	313.92	39.25	833.73	331	37.12	827.4	318.38	38.48	847.15	361.95	38.51									
82	21-Dec-23	868.8	332.35	39.19	872.15	320.11	39.77	842.87	333.93	37.69	831.11	324.13	39.62	851.48	363.27	39.19									
83	22-Dec-23	862.06	331.13	38.64	871.12	319.67	39.63	837.81	332.11	37.38	835.49	323.55	39.5	861.72	366.87	38.64									
84	23-Dec-23	870.44	332.79	39.25	865.97	316.72	39.52	853.87	337.86	38.5	833.31	323.55	39.49	858.34	365.31	39.25									
85	24-Dec-23	871.19	333.39	39.33	875.18	324.04	39.84	852.4	337.33	38.43	833.92	321.88	39.25	845.55	360.82	39.33									
86	25-Dec-23	860.19	329.83	38.63	865.02	315.33	39.39	836.91	332.06	37.35	828.03	322.66	39.32	850.81	363	38.63									
87	26-Dec-23	872.68	332.78	39.36	877.76	321.48	40.09	837.51	332.12	37.32	834.35	322.29	39.26	849.05	361.77	39.36									
88	27-Dec-23	867.29	334.47	39	874.99	321.23	39.87	842.16	333.46	37.57	833.38	325.08	39.78	851.73	363.09	39									
89	28-Dec-23	863.51	332.06	38.82	873.69	319.02	39.83	847.76	335.59	38.05	836.28	324.95	39.74	848.13	361.77	38.82									
90	29-Dec-23	866.99	333.18	38.94	873.16	319.93	39.78	835.46	331.13	37.16	838.23	324.24	39.7	852.36	363.54	38.94									
91	30-Dec-23	866.09	332	38.99	833.25	306.43	37.89	841.3	333.38	37.58	805.77	318.37	38.5	854.74	364.17	38.99									
92	31-Dec-23	864.24	330.99	38.91	859.15	311.93	39.19	841.22	333.63	37.65	835.24	322.11	39.22	856.16	365.07	38.91									
93	1-Jan-24	834.29	326.4	37.01	866.7	313.04	39.59				849.66	325.8	39.94	859.59	365.5	41.7									
94	2-Jan-24	SD				873.55	318.03				39.87	846.67	325.26	39.89	859.8	365.65	41.75								
95	3-Jan-24					877.24	321.86				40							851.34	326.93	40.21	860.84	366.52	41.89		
96	4-Jan-24	863.59	333.1	38.84	861.35	316.48	39.27				842.32							323.31	39.47	855.63	363.96	41.31			
97	5-Jan-24	870.82	334.64	39.23	860.43	314.84	39.18				840.53							322.11	39.23	853.01	363.57	41.33			
98	6-Jan-24	869.8	334.97	39.17	856.89	310.58	39.02				842.9							323.54	39.5	855.05	364.42	41.53			
99	7-Jan-24	864.28	331.33	38.83	872.2	322.14	39.76				841.15							323.32	39.47	851.19	362.83	41.15			
100	8-Jan-24	863.24	331.97	38.74	855.19	311.21	38.91				832.45							319.92	38.79	846.11	361.03	40.77			
101	9-Jan-24	856.71	331.48	38.29	872.23	319.71	39.77				844.33							324.63	39.72	848.61	361.39	40.75			
102	10-Jan-24	865.16	329.56	39.04	867.74	317.81	39.51				843.05							324.2	39.65	860.87	366.75	42.09			
103	11-Jan-24	871.81	333.06	39.3	864.12	315.36	39.44				835.7							320.52	38.91	849.18	361.76	40.81			
104	12-Jan-24	875.03	332.38	39.56	869.55	318.22	39.59				835.37							321.1	39.04	854.63	364.45	41.52			
105	13-Jan-24	873.74	334.11	39.4	870.27	317.31	39.71				836.9							321.04	39.04	848.55	362.7	41.17			
106	14-Jan-24	869.15	331.56	39.16	872.86	321.16	39.76				842.95							323.9	39.57	849.44	362.5	41.1			
107	15-Jan-24	871.16	331.28	39.28	873.43	319.87	39.78				842.66							323.5	39.5	846.94	361.81	41.03			
108	16-Jan-24	865.11	332.48	38.93	818.42	296.99	37.28				831.26							318.99	38.61	853.96	364.07	41.48			
109	17-Jan-24	875.29	334.45	39.55	SD						810.56							313.53	37.6	854.75	364.38	41.45			
110	18-Jan-24	863.75	333.54	38.74							816.38							314.9	37.76	846.16	361.47	40.91			
111	19-Jan-24	860.32	331.77	38.49							840.4							323.36	39.46	851.94	363.49	41.34			
112	20-Jan-24	856.51	327.99	38.49	840.21	304.48	38.35				844.03							324.19	39.67	852.19	363.32	41.27			
113	21-Jan-24	857.54	329.15	38.45	852.08	311.84	38.79				835.89							321.88	39.18	841.65	359.9	40.54			
114	22-Jan-24	857.99	328.46	38.52	841.21	303.3	38.3	836.94	322.13	39.22	846.07							361.51	40.87						
115	23-Jan-24	860.82	330.59	38.67	854.59	315.07	38.87	835.39	321.64	39.06	841.95							359.7	40.45						
116	24-Jan-24	859.66	329.45	38.52	846	311.81	38.51	831.69	320.05	38.78	852.6	364.18	41.55												
117	25-Jan-24	852.5	327.65	38.15	845.22	308.86	38.47	836.97	322.15	39.22	847.99	362.06	41.04												
118	26-Jan-24	844.79	327.66	37.68	812.44	297.95	36.87	827.84	319.39	38.66	836.76	358.37	40.25												
119	27-Jan-24	862.34	329.66	38.8	829.37	301.6	37.74	828.55	319.35	38.67	847.87	361.83	40.96												
120	28-Jan-24	853.03	328.99	38.23	836.11	305.45	38.03	841.56	323.2	39.44	850.92	362.91	41.13												
121	29-Jan-24	821.93	310.86	36.83	865.25	318.11	39.46	840.85	322.02	39.18	859.73	365.44	41.67												
122	30-Jan-24	SD				870.27	316.36	39.77	850.29	326.26	40.05	858.25	364.82	41.53											
123	31-Jan-24					872.91	318.94	39.85	848.15	325.14	39.82	859.32	365.58	41.74											
124	1-Feb-24	844.41	327.63	37.79	839.58	307.44	38.19	842.94	324.09	39.64	855.46	364.86	41.69												
125	2-Feb-24	851.15	329.31	38.08	827.46	302.74	37.5	781.14	314.53	33.6	836.36	321.85	39.15	848.98	362.42	41.12									
126	3-Feb-24	857.57	329.91	38.36	833.87	305.96	37.87	787.58	316.66	34.01	834.75	321.66	39.1	840.84	360.17	40.61									
127	4-Feb-24	850.4	327.27	38.22	820.77	297.43	37.3	795.52	319.23	34.58	826.22	319.28	38.64	834.11	356.82	39.83									
128	5-Feb-24	845.71	326.78	37.82	833.4	305.87	37.89	805.25	322.09	35.19	825.69	319.08	38.63	838.04	358.67	40.25									
129	6-Feb-24	859.43	329.86	38.69	856.3	314.83	39.06	838.33	332.95	37.46	833.18	320.7	38.92	851.72	363.37	41.31									
130	7-Feb-24	856.15	328.73	38.38	845.94	310.1	38.42	827.91	328.89	36.68	830.61	319.68	38.69	845.45	361.42	40.84									
131	8-Feb-24	859.5	326.13	38.76	832.33	301.9	37.89	815.7	325.47	35.88	831.46	319.73	38.74	844.22	361.34	41									
132	9-Feb-24	853.86	331.95	38.24	850.25	310.41	38.67	829.46	329.59	36.76	835.67	321.37	39.11	831.62	357.34	40.1									
133	10-Feb-24	876.38	337.01	39.63	874.92	322.58	39.81	853.12	336.95	38.32	850.28	325.83	39.96	SD											
134	11-Feb-24	868.05	333.44	39.07	857.6	313.81	39.14	837.32	331.65	37.27	839.82	322.91	39.37												
135	12-Feb-24	864.67	330.88	38.83	855.54	310.33	39.01	843.93	334.04	37.73	843.85	323.59	39.53	841.15	361.17	41.06									
136	13-Feb-24	846.64	327.67	37.8	838.76	304.47	38.17	826.88	328.62	36.6	832.05	320.73	38.96	831.43	356.52	39.83									
137	14-Feb-24	854.06	329.85	38.27	860.66	315.67	39.22	841.06	333.16	37.55	842.4	324.16	39.63	842.99	360.73	40.82									
138	15-Feb-24	860.11	328.2	38.74	848.84	307.11	38.71	840.86	333.31	37.59	840.98	323.58	39.55	851.4	363.24	41.27									
139	16-Feb-24	835.78	323.79																						

160	8-Mar-24	794.97	312.38	35.03	827.91	300.25	37.69	842.37	333.6	37.67	794.97	312.38	35.03	771.18	339.42	36.59
161	9-Mar-24	830.44	322.68	37	837.15	305.46	38.12	849.67	335.83	38.11	830.44	322.68	37	SD		
162	10-Mar-24	857.77	329.01	38.54	854.91	313.18	38.9	850.44	336.03	38.19	857.77	329.01	38.54			
163	11-Mar-24	842.22	324.57	37.59	849.36	311.35	38.71	847.01	335.19	37.97	842.22	324.57	37.59	821.28	353.64	39.29
164	12-Mar-24	837.38	325.93	37.29	843.31	307.96	38.36	844.36	334.72	37.88	837.38	325.93	37.29	831.35	357.04	39.98
165	13-Mar-24	845.95	324.36	37.93	849.89	311.49	38.7	849.15	335.8	38.1	845.95	324.36	37.93	830.27	357.32	40.16
166	14-Mar-24	840.28	323.82	37.63	850.97	309.62	38.77	839.62	332.96	37.53	840.28	323.82	37.63	821.46	353.25	39.09
167	15-Mar-24	796.47	310.83	35.06	818.04	296.59	37.2	829.12	329.36	36.75	796.47	310.83	35.06	785.62	343.54	37.37
168	16-Mar-24	837.18	323.79	37.37	837.76	309.52	38	851.45	336.74	38.28	837.18	323.79	37.37	824.12	355.19	39.73
169	17-Mar-24	815.31	318.45	36.11	848.76	309.93	38.74	850.49	336.57	38.28	815.31	318.45	36.11	798.7	346.74	37.89
170	18-Mar-24	826.15	319.03	36.87	851.07	307.47	38.83	854.62	338.04	38.57	826.15	319.03	36.87	815.4	352.67	39.2
171	19-Mar-24	845.4	324.11	37.86	832.9	305.11	37.89	847.09	335.04	37.94	845.4	324.11	37.86	834.07	358.21	40.28
172	20-Mar-24	839.89	324.97	37.4	854.94	314.58	38.88	848.06	335.46	38.03	839.89	324.97	37.4	838.89	359.77	40.65
173	21-Mar-24	853.66	326.45	38.31	858.87	314.83	39.09	852.33	337.06	38.37	853.66	326.45	38.31	834.04	357.66	40.08
174	22-Mar-24	854.23	330.05	38.34	861.93	316.95	39.27	846.13	334.85	37.9	854.23	330.05	38.34	843.5	360.64	40.68
175	23-Mar-24	856.51	331.92	38.4	854.72	313.91	38.87	844.5	334.55	37.81	856.51	331.92	38.4	848.9	362.23	41.04
176	24-Mar-24	844.56	326.89	37.83	803.6	290.96	36.51	844.8	334.42	37.86	844.56	326.89	37.83	852.76	364.19	41.55
177	25-Mar-24	818.53	317.7	36.35	815.34	297.69	37.03	831.45	330.44	36.92	818.53	317.7	36.35	800.64	347.99	38.18
178	26-Mar-24	835.24	323.67	37.23	844.35	310.37	38.43	842.81	333.7	37.67	835.24	323.67	37.23	811.84	350.6	38.64
179	27-Mar-24	851.74	328.39	38.03	861.91	316.33	39.25	850.33	336.26	38.2	851.74	328.39	38.03	819.19	353.42	39.27
180	28-Mar-24	854.94	328.74	38.37	857.1	315.73	38.94	849.89	336	38.15	854.94	328.74	38.37	840.54	359.46	40.46
181	29-Mar-24	848.6	327	38.03	852.49	312.19	38.79	841.49	333.15	37.6	848.6	327	38.03	845.48	361.59	40.97
182	30-Mar-24	822.33	320.79	36.39	848.52	311.9	38.65	841.58	333.18	37.51	822.33	320.79	36.39	823.33	354.37	39.43
183	31-Mar-24	803.92	315.08	35.48	829.81	301.34	37.7	848.88	335.99	38.12	803.92	315.08	35.48	791.74	345.12	37.66
184	MAX	876.38	337.01	39.63	877.76	324.04	40.09	854.62	338.04	38.57	857.77	331.92	40.21	861.72	366.87	42.09
185	MIN	766.36	302.39	33.39	744.12	268.09	33.59	744.55	302.93	31.14	723.71	285.14	31.86	756.06	334.04	34.34
186	AVG	834.65	323.61	37.28	831.96	304.48	37.94	813.75	325.09	35.84	815.59	316.10	37.62	824.66	354.92	39.38

SD : Unit under shutdown for maintenance



**Monthly Abstract of Ash Generation and Utilization**  
(For the Period from 1<sup>st</sup> Oct 2023 to March 2024)

Ash generation and utilization (in LMT)					Mode of ash utilization and utilization in each mode (in LMT)					
Sl. No.	Month	Ash Generation	Ash Utilization	% age Utilization	Fly ash-based products viz. bricks, blocks, tiles, fibre cement sheets, pipes, boards, panels.	Cement manufacturing, ready mix concrete (RMC- Fine Ash)	Construction of road and fly over embankment, Ash and Geo-polymer based construction material	Filling up of low lying area;	Filling of mine voids;	Export of ash to other countries (Cenosphere)
1	Oct' 23	4.14147	2.27707	54.98	0.21402	1.11463	0.04618	0.88602	0.01621	-
2	Nov' 23	2.87278	2.29658	79.94	0.12259	0.92573	0.08858	1.15136	0.00827	0.00005
3	Dec' 23	3.38273	2.88897	85.40	0.19363	0.92827	0.22425	1.51541	0.02741	-
4	Jan' 24	3.44840	4.20134	121.83	0.33918	1.11872	0.33352	2.06319	0.34673	-
5	Feb' 24	3.77082	4.72127	125.21	0.31068	0.94468	0.43890	2.93607	0.09068	0.00027
6	Mar' 24	4.17068	5.66792	135.90	0.28014	1.49591	0.69881	2.53454	0.65828	0.00024
<b>TOTAL</b>		<b>21.7869</b>	<b>22.0532</b>	<b>101.22%</b>	<b>1.46024</b>	<b>6.52794</b>	<b>1.83024</b>	<b>11.0866</b>	<b>1.14758</b>	<b>0.00056</b>

#### EFFORTS TO MAXIMIZE ASH UTILIZATION

A separate Ash Handling System (AHS) has been provided to collect, transport, and dispose of all types of ash. We have made the following practices/efforts to maximize the utilization of ash: -

- Ash Collection, Storage, Loading & Transportation Facilities:
- Dry Ash collected from ESP through pneumatically conveying system & stored in Silos (6 x 1700MT) and (2 x 700MT)
- Railway line with rapid loading system (Telescopic chutes) provided under Silos for fast loading to Bulklers, Rail wagons & tippers with ash conditioners to add moisture in each silo. Bulk quantity of ash dispatched through Rail wagons to various cement manufacturers. With the above measures, pollution-free loading & transporting activities are being taken place.
- Parallel Rail loading and bulker/truck loading is being done in Silos.
- In-motion weighbridge provided for rake weighment and static weighbridge for truck/bulker
- A dedicated LOCO Diesel Engine was procured for fast ash rake loading.
- An Ultra-Fine ash separation system was also installed for bagging fine ash.
- Bottom Ash Collection Pit provided for utilisation of Bottom ash.
- HCSD System along with Silos provided.



**Ash loading in BTAP rake**



**Tarpaulin covering in BOXEN rake loaded with Fly Ash**

## **Ash Utilisation Avenue/user base**

- Long-term agreements were signed with various cement manufacturers in Maharashtra, CG, Andhra Pradesh, Karnataka, MP, UP, Rajasthan & Gujarat etc. During FY 2023-24, dry ash was supplied to more than 12 cement plants in 389 rail rakes across India.
- Fly ash is being used by ash brick manufacturers (more than 180 nos.) located in the districts of Gondia, Bhandara of Maharashtra and Balaghat & Seoni districts of Madhya Pradesh for making Fly Ash based products like Bricks /Paver blocks etc. Bottom Ash is being provided to Red Brick manufacturers to "Use of Bottom Ash in place of sand".
- Pond Ash and Bottom Ash are being utilized in the construction of flyovers, embankments, and roads. We have done agreements and are currently supplying ash to various road projects such as Balaghat to Gondia section 4-lane for NH-543 by NHAI - 9 (under Bharat Mala project by M/s. KCPL), Barbik Road Project, Atcon Road Project, JMC Road Project Limited, HG Infra.
- We also supply bottom ash to MOIL India for mine void stowing and Panchgaon mine backfilling.
- We have received request letters from nearby landowners to provide ash for land reclamation/low-lying area filling. Suitable protection measures like Ash filing pattern, Surface Run-off control, compaction, soil covering & water sprinkling followed by plantation are being done as per the MoEF&CC and CPCB guidelines.
- We also promote research to maximize ash utilization & monitor the impact on the local Environment:
- A feasibility study was carried out by CIMFR–Dhanbad for Bottom Ash Stowing in Underground Mines of MOIL in place of sand. More than 1.0 lac MT of Bottom ash was provided to MOIL as a pilot project.
- CSIR – NEERI, Nagpur engaged to carry out a Hydrogeological & fly ash leachability study around the ash dyke area and Land Reclamation site.
- Bioaccumulation & Biomagnification study is also being carried out by NEERI Nagpur.
- Bottom ash provided to local progressive farmers as per the guidance & supervision of Scientists from AMPRI–Bhopal (CSIR– GOI).

## **Awareness /Publicity:**

- Awareness sessions conducted to Self-help groups under LRP program coming from Balaghat (MP) on fly ash & ash-based product manufacturing like brick & paver blocks etc.
- Awareness and demonstration to nearby Farmers for use of Ash in Agriculture with the engagement of AMPRI–Bhopal (CSIR– GOI).
- Regular awareness training & awareness programs organized for ash Transporters, Users & vendors who are engage in Fly ash handling, storage, loading & use in Land reclamation, brick manufacturing etc.
- We also conducted meeting with Transporters, User & other vendors to resolve any issues raised and discussion on maximisation of Ash utilisation.
- Awareness Session conducted on Solution to Plastic Pollution, Ash Utilisation in Forestry, Agriculture & Other Avenues by Eminent Speakers from CSIR-NEERI, Nagpur, ICFRE - TFRI, Jabalpur & Fly Ash Cluster, Chandrapur.

## **Way Forward for Maximize Ash Utilization**

- We are developing Ash Research Park and engaged Tropical Forest Research Institute (TFRI) – Jabalpur for "Implementable Forestry Research for Ash Utilization Promotion and Development of Research Park" at APML. It will create potential to ash utilisation in the agroforestry sector.

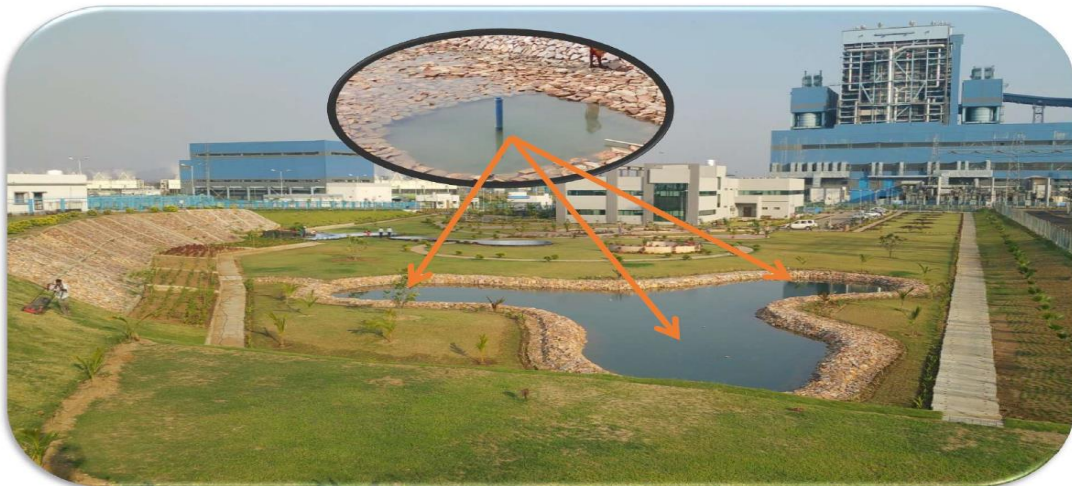
Exploring ash requirements of project Samruddhi Expressway nearest and discuss with proposed vendor.

### Groundwater Recharge through Rainwater Harvesting -at APL, Tiroda

Sr. No.	Month	Rainfall (mm)	Rainwater Harvesting (m3)
1	Apr-23	50.7	18.53
2	May-23	4	1.46
3	Jun-23	204.6	74.76
4	Jul-23	478.8	174.95
5	Aug-23	267.8	97.85
6	Sep-23	392.2	143.31
7	Oct-23	0.6	0.22
8	Nov-23	47.2	17.25
9	Dec-23	18.8	6.87
10	Jan-24	15	5.48
11	Feb-24	25.8	9.43
12	Mar-24	2.8	1.02
<b>Total</b>		<b>1508.3</b>	<b>551.13</b>

### Rainwater Harvesting Structure within plant premises

#### RAIN WATER HARVESTING AT ADMIN BUILDING



#### RAIN WATER HARVESTING AT UNIT#5



# ADANI POWER LIMITED, TIRORA

Annexure - VII

## GREEN BELT & PLANTATION DETAILS

- **Total Area Covered:** 258 HA
- **Total Tree Planted:** 713182 Nos.
- **FY 2023-24: 139746 Nos.**
- **Shrubs Planted:** 60418 Sq. Meter
- **Green Carpet:** 3,22,194 Sq. Meter
- **Palm Tree:** 5882 Nos.

### Plant & Shrubs Species used for Green Belt Development

Tree Species		Shrubs species
Scientific Name	Common Name	Common Name
<i>Psidium guavajava</i>	Amarud	Bogunvella
<i>Punica granatum</i>	Anar	Rose
<i>Manilkara zapota</i>	Chikoo	Furcaria
<i>Phyllanthus emblica</i>	Anola	Cassia biflora
<i>Tamarindus indica</i>	Imali	Lagerstromia indica
<i>Mangifera indica</i>	Mango	Shrubs
<i>Citrus Limon</i>	Lemon	Flower Beds.
<i>Carissa carandas</i>	Karaunda	Lawn
<i>Callistemon Lanceolatus</i>	Bottle Brush	Exora Tall
<i>Casuarina</i>	Beach She-Oak	Golden Ficus
<i>Samania saman</i>	Monkey pod tree	Ficus panda
<i>Ficus religeosa</i>	Sacred Fig	Group plants
<i>Casia siamia</i>	Kassod	Nerium Bell
<i>Bauhinia purpuria</i>	Kachnar	(Yellow Ghanti Kanher)
<i>Ficus bengalensis</i>	Bargadh	Hibiscus
<i>Delonix regia</i>	Gulmohar	Musanda
<i>Azadiracta Indica</i>	Neem	Nolino
<i>Spathodia</i>	kadam	Furcaria
<i>Peltaphorum</i>	Pila Gulmohar	Junifer
<i>Acacia auriculiformis</i>	Babul	Ficus Golden
<i>Jackranda</i>	Neela Gulmohar	Ficus blackiana
<i>Neolamarckia cadamba</i>	Kadam	Headge
<i>Arecaceae</i>	Coconut, Fistal palm, Royal Palm, etc	
<i>Ficus Golden</i>	Pilkhan	
<i>Mimusops elengii</i>	Bakul	
<i>Cassia fistula</i>	Kaisiya Phistula	
<i>Tectona grandis (Teak)</i>	sagoan	
<i>Ficus Religiosa</i>	Peepal	
<i>Bambusa Vulgaris</i>	Bamboo	
<i>Alstonia Scholaris</i>	Satparni	
<i>Earleaf Acacis</i>	Australian babul	
<i>Conocarpus Erectus</i>	Buttonwood	
<i>Eucalyptus Teriticornis</i>	Neelgiri	
<i>Pongame Oiltree</i>	Karanj	
<i>Hardwicka</i>	Anjan	
<i>Nyctanthes arbor-tristis</i>	Parijat	
<i>Syzygium Cumini</i>	Jamun	
<i>Annona Squamosa</i>	Sitaphal	
<i>Psidium</i>	Guava	
<i>Milletia Pinnata</i>	Karanj	
<i>Terminalia Arjuna</i>	arjuna	
<i>Erythrina Variegata</i>	Pangara	



## ADANI POWER LIMITED, TIRORA



**Plantation under 100 million trees programme around Ash Dyke & Plant Boundary during 2023-24.**



**Gap filling in Ash pond-2 Reclaimed Dyke.**



## ADANI POWER LIMITED, TIRORA



**Front and surrounding View of the Admin Building**



**Near Unit 4 & 5 and Switchyards**



**Towrds Reservoir - 1 site**



## ADANI POWER LIMITED, TIRORA



**Near Switch Yards**

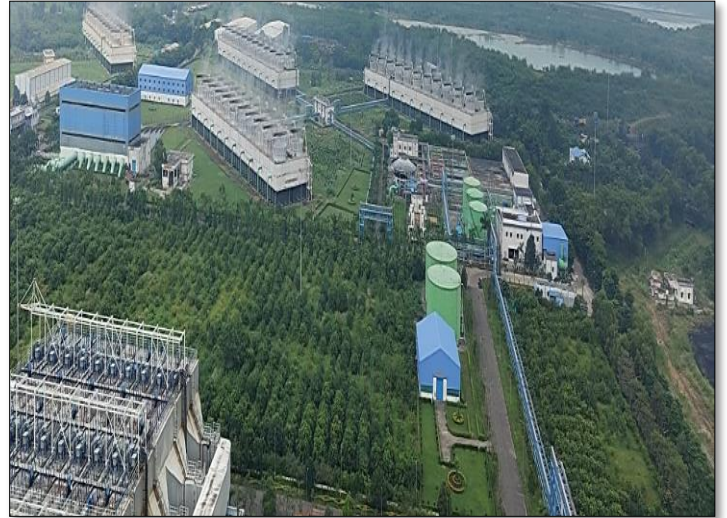


**BGT to Electrical Workshop**





## ADANI POWER LIMITED, TIRORA



**Aerial View of Cooling Tower Area**



**Ash Dyke 2 Reclaimed with Green Belt**



## ADANI POWER LIMITED, TIRORA



**OHC & Main Canteen Site**



**Near Cooling Tower**



**Avenue Plantation near BTG Area**



## ADANI POWER LIMITED, TIRORA



**Near BTG area Unit # 5**



**DM Plant Road**



**BTG#1 to Store Road**



**Ash Slurry Pump House Unit# 4 & 5 Area**



## ADANI POWER LIMITED, TIRORA



**Mango Orchard**



**CHP to BTG Road**



**From Gate # 3 (Material Road) to Ash Pond**



**Main Gate # 2**





# ENVIRO ANALYSTS & ENGINEERS PVT. LTD.

NABET Accredited & MoEF (Govt. of India) approved

CIN No. : U28900MH1995PTC093129

Annexure -VIII



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• Tel. : +91 22 2854 1647 / 48 / 49 / 67 / 68 • E-mail : info@eaepl.com • Website : www.eaepl.com

ENV/SWT/2023-24/128

Date: 10.01.2024

**ISSUED TO:**

**M/s ADANI POWER LIMITED**

Plot no. - A1, Tirora Growth Center, MIDC, Tirora,

Dist.: Gondia, Maharashtra – 441 911. India

**Sample Particulars : Fly Ash Sample**

Sample Registration Date	: 28.12.2023	Analysis Starting Date	: 1.01.2024
Quantity received	: 2 kg	Analysis Completion Date	: 10.01.2024
Sample Type:	: Solid Waste	Sampled by	: EAEPL Representative

**Toxicity Characteristic Leaching Procedure (TCLP)**

**TEST RESULTS**

Sr. No.	Test Parameters	Measurement Unit	Results	Standards as per Schedule II of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
1	pH Value (1:2.5 ration in water)	-	9.1	-
2	Alumina (as Al <sub>2</sub> O <sub>3</sub> )	% by mass	22.3	-
3	Iron Oxide (as Fe <sub>2</sub> O <sub>3</sub> )	% by mass	4.84	-
4	Silica (as SiO <sub>2</sub> )	% by mass	47.9	-
5	Reactive Silica	% by mass	0.011	-
6	Magnesium Oxide (as MgO)	% by mass	1.414	-
7	Sulphur Trioxide (as SO <sub>3</sub> )	% by mass	0.039	-
8	Alkalies (as Na <sub>2</sub> O)	% by mass	3.17	-
9	Chloride (as Cl)	% by mass	0.029	-
10	Loss on ignition (as LOI)	% by mass	0.021	-
11	Cadmium	mg/kg	0.13	1.0
12	Chromium	mg/kg	2.86	5.0
13	Arsenic	mg/kg	0.761	5.0
14	Mercury	mg/kg	0.0281	0.2
15	Selenium	mg/kg	Nil	1.0
16	Cyanide	mg/kg	Nil	20
17	Cobalt	mg/kg	12.2	80.0
18	Copper	mg/kg	10.7	25
19	Lead	mg/kg	1.82	5.0
20	Molybdenum	mg/kg	Nil	350
21	Nickel	mg/kg	10.5	20.0
22	Tin	mg/kg	Nil	-

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

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**Lab :**  
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Opp. Kanakia College,  
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Tel. : 022-2811 6442

**Workshop :**  
Plot No. E - 122,  
MIDC Tarapur,  
Boisar,  
Dist. - Thane - 401 506.



SERVING FOR A BETTER ENVIRONMENT





# ENVIRO ANALYSTS & ENGINEERS PVT. LTD.

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Page 2 of 2

ENV/SWT/2023-24/128

Date: 10.01.2024

**ISSUED TO:**

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Quantity received	: 2 kg	Analysis Completion Date	: 10.01.2024
Sample Type:	: Solid Waste	Sampled by	: EAEPL Representative

**Toxicity Characteristic Leaching Procedure (TCLP)**

Sr. No.	Test Parameters	Measurement Unit	Results	Standards as per Schedule II of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
23	Barium	mg/kg	49.3	100
24	Calcium	mg/kg	122892	-
25	Iron	mg/kg	33831.6	-
26	Zinc	mg/kg	59.8	-
27	Aluminium	mg/kg	421550	-
28	Manganese	mg/kg	7.75	10.0
29	Antimony	mg/kg	Nil	-
30	Beryllium	mg/kg	Nil	-

**Note:** 1. Results relate to tested sample only.  
2. Test report should not be reproduced partially.

**REMARKS:** Based upon request of party, sample was tested for above mentioned parameters only.

**For Enviro Analysts & Engineers Pvt. Ltd.**

Authorized Signatory

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Plot No. E - 122,  
MIDC Tarapur,  
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SERVING FOR A BETTER ENVIRONMENT





# ENVIRO ANALYSTS & ENGINEERS PVT. LTD.

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CIN No. : U28900MH1995PTC093129



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ENV/SWT/2023-24/128/2

Date: 10.01.2024

## ISSUED TO:

**M/s ADANI POWER LIMITED**

Plot no. - A1, Tirora Growth Center, MIDC, Tirora,

Dist.: Gondia, Maharashtra – 441 911. India

## Sample Particulars : Bottom Ash Sample

Sample Registration Date	: 28.12.2023	Analysis Starting Date	: 1.01.2024
Quantity received	: 2 kg	Analysis Completion Date	: 10.01.2024
Sample Type:	: Solid Waste	Sampled by	: EAEPL Representative

## Toxicity Characteristic Leaching Procedure (TCLP)

### TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Results	Standards as per Schedule II of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
1	pH Value (1:2.5 ratio in	-	8.7	-
2	Alumina (as Al <sub>2</sub> O <sub>3</sub> )	% by mass	17.30	-
3	Iron Oxide (as Fe <sub>2</sub> O <sub>3</sub> )	% by mass	4.26	-
4	Silica (as SiO <sub>2</sub> )	% by mass	46.12	-
5	Reactive Silica	% by mass	0.012	-
6	Magnesium Oxide (as MgO)	% by mass	1.37	-
7	Sulphur Trioxide (as SO <sub>3</sub> )	% by mass	0.051	-
8	Alkalies (as Na <sub>2</sub> O)	% by mass	3.13	-
9	Chloride (as Cl)	% by mass	0.066	-
10	Loss on ignition (as LOI)	% by mass	0.029	-
11	Cadmium	mg/kg	0.124	1.0
12	Chromium	mg/kg	2.68	5.0
13	Arsenic	mg/kg	0.15	5.0
14	Mercury	mg/kg	0.0119	0.2
15	Selenium	mg/kg	Nil	1.0
16	Cyanide	mg/kg	Nil	20
17	Cobalt	mg/kg	11.14	80.0
18	Copper	mg/kg	11.68	25
19	Lead	mg/kg	3.72	5.0
20	Molybdenum	mg/kg	Nil	350
21	Nickel	mg/kg	11.87	20.0
22	Tin	mg/kg	Nil	-

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

**Nagpur Branch :**  
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## Sample Particulars : Bottom Ash Sample

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Quantity received	: 2 kg	Analysis Completion Date	: 10.01.2024
Sample Type:	: Solid Waste	Sampled by	: EAEPL Representative

## Toxicity Characteristic Leaching Procedure (TCLP)

### TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Results	Standards as per Schedule II of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
23	Barium	mg/kg	61.9	100
24	Calcium	mg/kg	123998	-
25	Iron	mg/kg	29777.4	-
26	Zinc	mg/kg	56.8	-
27	Aluminium	mg/kg	91517.0	-
28	Manganese	mg/kg	6.84	10.0
29	Antimony	mg/kg	Nil	-
30	Beryllium	mg/kg	Nil	-

Note: 1. Results relate to tested sample only.  
2. Test report should not be reproduced partially.

REMARKS: Based upon request of party sample was tested for above mentioned parameters only.

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Dist.: Gondia, Maharashtra - 441 911. India

**Sample Particulars : Pond Ash Sample**

Sample Registration Date	: 28.12.2023	Analysis Starting Date	: 1.01.2024
Quantity received	: 2 kg	Analysis Completion Date	: 10.01.2024
Sample Type:	: Solid Waste	Sampled by	: EAEPL Representative

**Toxicity Characteristic Leaching Procedure (TCLP)**

**TEST RESULTS**

Sr. No.	Test Parameters	Measurement Unit	Results	Standards as per Schedule II of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
1	pH Value (1:2.5 ration in water)	-	8.4	-
2	Alumina (as Al <sub>2</sub> O <sub>3</sub> )	% by mass	20.58	-
3	Iron Oxide (as Fe <sub>2</sub> O <sub>3</sub> )	% by mass	4.53	-
4	Silica (as SiO <sub>2</sub> )	% by mass	52.66	-
5	Reactive Silica	% by mass	0.012	-
6	Magnesium Oxide (as MgO)	% by mass	1.06	-
7	Sulphur Trioxide (as SO <sub>3</sub> )	% by mass	0.043	-
8	Alkalies (as Na <sub>2</sub> O)	% by mass	3.15	-
9	Chloride (as Cl)	% by mass	0.057	-
10	Loss on ignition (as LOI)	% by mass	0.026	-
11	Cadmium	mg/kg	0.121	1.0
12	Chromium	mg/kg	2.84	5.0
13	Arsenic	mg/kg	0.61	5.0
14	Mercury	mg/kg	0.019	0.2
15	Selenium	mg/kg	Nil	1.0
16	Cyanide	mg/kg	Nil	20
17	Cobalt	mg/kg	11.55	80.0
18	Copper	mg/kg	12.96	25
19	Lead	mg/kg	2.64	5.0
20	Molybdenum	mg/kg	Nil	350
21	Nickel	mg/kg	11.51	20.0
22	Tin	mg/kg	Nil	-

For Enviro Analysts & Engineers Pvt. Ltd.

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Dist.: Gondia, Maharashtra - 441 911. India

**Sample Particulars : Pond Ash Sample**

Sample Registration Date	: 28.12.2023	Analysis Starting Date	: 1.01.2024
Quantity received	: 2 kg	Analysis Completion Date	: 10.01.2024
Sample Type:	: Solid Waste	Sampled by	: EAEPL Representative

**Toxicity Characteristic Leaching Procedure (TCLP)**

**TEST RESULTS**

Sr. No.	Test Parameters	Measurement Unit	Results	Standards as per Schedule II of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
23	Barium	mg/kg	81.3	100
24	Calcium	mg/kg	128377	-
25	Iron	mg/kg	31664.7	-
26	Zinc	mg/kg	87.7	-
27	Aluminium	mg/kg	389035.9	-
28	Manganese	mg/kg	6.36	10.0
29	Antimony	mg/kg	Nil	-
30	Beryllium	mg/kg	Nil	-

**Note:** 1. Results relate to tested sample only.  
2. Test report should not be reproduced partially.

**REMARKS:** Based upon request of party sample was tested for above mentioned parameters only.

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SERVING FOR A BETTER ENVIRONMENT

# **Adani Foundation**

**CSR TIRODA**

**Six monthly report**

**(October 2023 – March 2024)**

**FY- 2023-24**



## Education Programmes

### ▪ Aamchi Shala Aadrash Shala

To improve the quality of education in Government schools and foster community engagement, the Adani Foundation has launched the "Aamchi Shala Aadrash Shala" competition in collaboration with the District Education department. This initiative is designed to motivate and rejuvenate Government schools in various districts.

The competition has been implemented since 2016-17, starting with 19 Zillah Parishad schools in the Tirora block. The competition continues to impact the education system in the region positively.

Overall, the "Aamchi Shala Aadrash Shala" competition is a unique community engagement initiative that significantly improves the quality of education in Government schools, particularly in the Gondia district.

- 595 Schools were evaluated based on the program parameters by evaluation committees.
- Felicitated and awarded: **3** district winners, **16** 1st and 2nd schools from the block and **85** schools from cluster.

Even though government authorities are also honored for their valuable contribution to successful implementation.



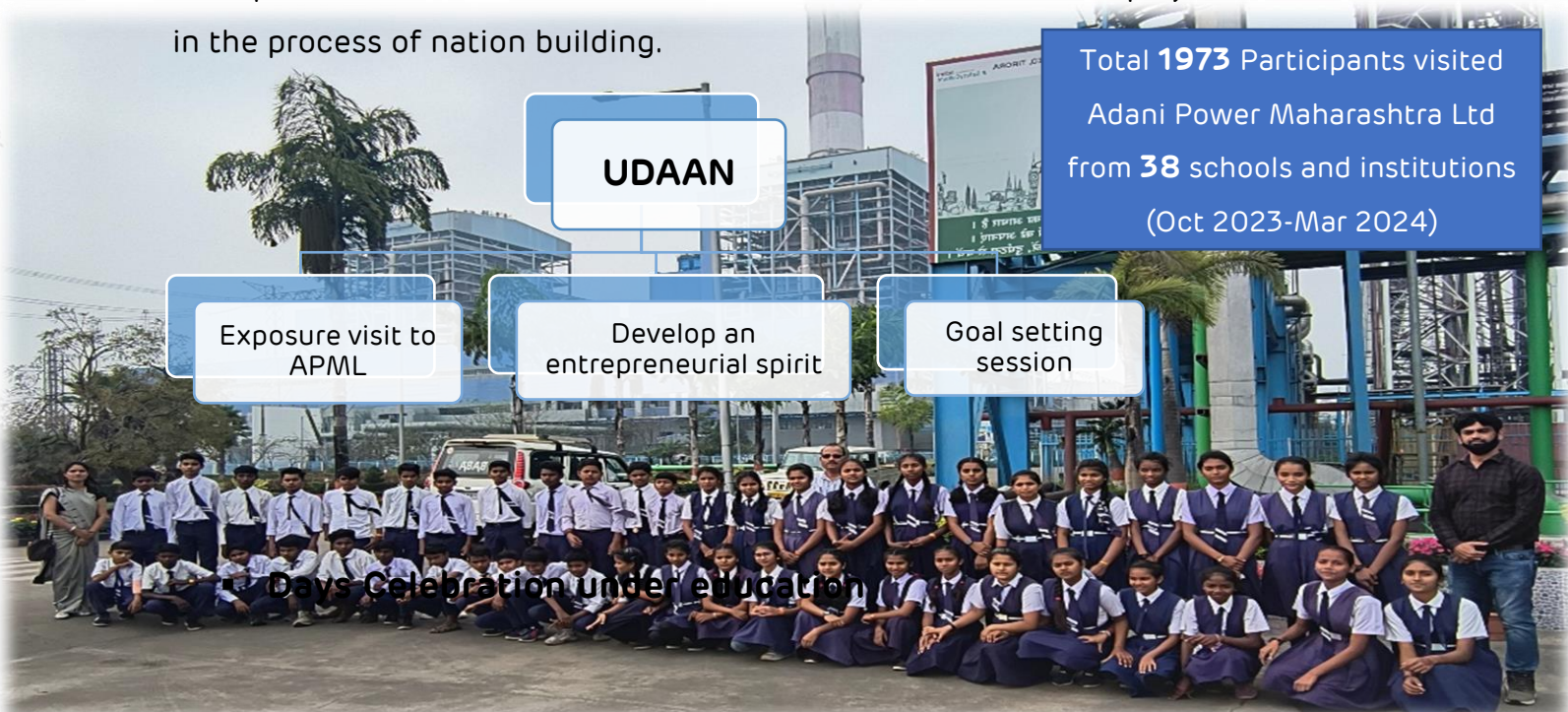
- **Scholarship distribution for meritorious students.**

Due to low income, most people in the area rely on farming as their primary source of income, and as a result, they can only afford the fees charged by institutions and colleges to educate their children by 10th grade. This has led to students needing help to obtain an education from reputable institutions. To support these students, Adani Foundation has initiated a Scholarship Distribution program to appreciate students who excel academically and encourage other students to excel in their studies and exams. As part of this program, we award a scholarship of Rs. 6,000 per student per year for two years to standard 10th students who score outstanding marks in the SSC exam. In 2023-24, we awarded scholarships to **80** students (40 FY 2022-23 and 40 FY 2023-24) from five villages. This scholarship has motivated merit students, inspired them to work hard, and encouraged other students to do their best in their studies.

- **Udaan Program**

Under this project, exposure tours are organized wherein school students are giving chance to visit the APML Tirora, to get an insight into the large-scale business operations and thus get inspired to dream big in life.

The exercise stimulates the young minds to dream big and help them become entrepreneurs, innovators and achievers of tomorrow, and thus play an active role in the process of nation building.





## Science Day Celebration

Science Day at Z.P. Upper Primary School Satona, Tirora, was a remarkable event that highlighted the creativity and ingenuity of young minds. The exhibition featured 50 students from grades 3 to 8, each presenting a unique science model that they had crafted. These models not only demonstrated the students' understanding of scientific concepts but also their ability to apply this knowledge practically.

The event served as an inspiring platform for students to engage with science beyond the classroom. It encouraged them to think critically and innovatively, fostering a love for science and discovery. Such exhibitions are crucial in nurturing the next generation of scientists, engineers, and innovators. They provide a space for students to showcase their talents, receive feedback, and learn from their peers.



## International Women's Day

This year's theme was: "Invest in women: Accelerate progress "We hosted cultural programs dedicated to mothers on occasion of Women's Day at Z.P. upper primary

school Chikhli, in this program total 85 students were participated from class 1st to 8th. Students prepare and represented skits, dance, and song in this program.

We awarded school bags to participant students, facilitate 03 or 05 Mothers who attended maximum Mothers' meet, and also honored women faculty members and staff.



## Community Health Programme

### ▪ Mobile health care Unit (MHCU) and Health Check Up camps

MHCUs are operational and provide quality healthcare service at the doorstep of 25 nearby villages of APML in Tirora block at free of cost.

**General Medical Health Camp- Organized** 14 General Medical Health camps in 14 villages. Total 1020 patients (Male – 404 and Female- 616) were benefited from these camps.

**Regular OPD-** MHCU visits in 25 villages & consulted total **18783** patients (Male- 8460 and Female- **10323**). Also done **178** blood sugar test





- **Multi-Specialty Health Checkup Camps**

10 Multi-Specialty Health Checkup Camps were organized in 10 villages. Total 3223 patients benefited by this camp. Each Patient save more than Rs. 400 by these camps



- **Cancer Screening Camp**

2 Cancer Screening Camps were organized in 2 villages. Total 265 patients benefited by this camp.



## Sustainable Livelihood Development

### ■ Milk collection and chilling center

Farmers in Tirora block depended on the dairy business to sustain their livelihood. However, the unorganized milk collection centers make it difficult for them to get a reasonable price for their milk. This issue has been a major setback for dairy farmers. To address this problem, Adani Foundation took the initiative to support the local farmers in forming a Tirora Farmer Producer Company Ltd. (TFPCL) and establishing Anuradha dairy, to helping the farmers get better prices for their milk and improving their overall economic conditions.

Anuradha dairy started 3 Milk collection and chilling centers and village-level Dudh Sankalan Kendra (DSK) to reach up to more dairy farmers at the village level, with the help of Adani Foundation and Mahila Aarthik Vikas Mahamandal (MAVIM).

This year we inaugurated another 20 village - level milk collection centers in the 20 villages of District. This collaborative effort between the Adani Foundation, District administration, Gondia Mahila Aarthik Vikas Mahamandal, and Tirora Farmer Producer Co. Ltd. Embodies the spirit of progress and community empowerment.

- Total 45 centers (42 village - level and 3 Milk collection and chilling centers) are working at 45 villages of Tirora block run by SHG women.
- Total 24.60 lakh liters of milk is collected from Oct-2023 to March-2024, with a turnover of Rs. 11.10 Crore.
- Farmers are getting Instant receipt of sold milk. And online payment in their bank account at the interval of 10 days cycle, as per the FAT, SNF and CLR parameters.
- More than 1950 dairy farmers are associated with Anuradha dairy.
- Generating the employment for 135 women SHG.
- 30 kl Milk chilling plant and 90 DSK's work is also started. This will generate employment for 450 to 500 women SHG, youth, and women. Due to this 3000 dairy farmers will get the benefit.





## ▪ Animal Husbandry and Related Initiative (Dhanalakshami Program)

Adani foundation has started Livestock Development Center programme in 26 villages of tirora block with the support of Baif institution of sustainable livelihood development. To support farmers for dairy business, and develop dairy farming as an additional source of livelihood by improving productivity of local cows and buffaloes. Two livestock development centers (LDC) are running at Khairbodi and Kawalewada respectively covering 26 villages.

Sr. No.	Activity	Cumulative Progress Oct 2023 to March 2024
1	AI	899
2	AI (Sorted Sex semen)	458
3	PD	608
4	PD (Sorted Sex semen)	338
5	Camps	6
6	Normal Calving	368
7	SSS Calving	220



## ▪ **Organic Base Multicropping program**

The concept of Organic-based Multiple Cropping is a transformative approach aimed at enhancing the productivity and income of small-scale farmers, who traditionally have been reliant on single-crop cultivation, particularly paddy. Recognizing the untapped potential of their land, an initiative has been introduced to shift their focus towards a more diversified and sustainable farming practice. This program, is designed to educate and empower farmers with the knowledge and skills necessary to cultivate turmeric and maize. Maize cultivation is primarily for silage, providing a reliable source of fodder for livestock. By adopting this Multicropping system, farmers can make optimal use of their agricultural land throughout the year, leading to increased farm productivity. Moreover, this method reduces the risk associated with mono-cropping and promotes soil health through organic practices. The overarching goal of this initiative is not only to raise the productivity of the farmland but also to significantly boost the income of small and marginal farmers. Through hands-on training and guidance, the program aims to instill a sense of independence among farmers, enabling them to make informed decisions that benefit both their livelihood and the environment.

There are 22 farmers cultivated turmeric and 100 farmers who cultivated maize on 100 acres of farm land. We arrange different workshops, field visits and training programs to empower farmers with the knowledge and skills necessary to cultivate turmeric and maize

### **Output**

- Avg. total production of turmeric is 2594 kg.
- Avg. net profit from turmeric cultivation per acre is Rs. 16599/-.
- Avg. total production of Maize cultivation and silage is 12565 kg.
- Avg. net profit from Maize cultivation and silage per acre is Rs. 39051/-.

### **Outcome**

- Alternative income source generated.
- Increase in green fodder availability for dairy farmers throughout the year.
- Farmers trained in new techniques of maize cultivation and silage making
- Change in cropping pattern



- Engagement of the farmers throughout the year
- Increasing source of status & economic condition of the farmers
- Enhancement in Silage making & fodder cultivation practice



## ▪ Vegetable and fruit shop

Vegetable and fruit shop is remarkable initiative powered by four SHG women, who are managing and running the shop. Supported by 'Tirora Pragatishil Mahila Producer Company Ltd'.

**This venture uplifts and empowers these incredible women entrepreneurs.**

Turnover of this vegetable shop (Oct 2023 to March 2024) is 8 lakh.





## Capacity building & Support for income generation activity (IG)

### ▪ Agarbatti making

Skilling women to provide financial and nutritional security to HHs. 20 Agarbatti Machines are installed in 5 villages (Garada, Ramatola, Tikaramtola, Mendipur, and Gumadhawada), total 60 SHG women are successfully running this business. Agarbatti Making programme is ongoing.

- Total Agarbatti Production: - **36005 Kgs**
- Total Income Earned:- **Rs. 21.36/-**



### ▪ Mushroom Cultivation Programme

This programme is with the collaboration of Mahila Aarthik Vikas Mahamandal (MAVIM), we provide detailed theoretical and practical training about Oyster Mushroom cultivation to women SHG. This year we facilitated detailed training to **100** village level Mushroom Sakhi's and block level coordinators from district. Near about **250** women SHG's from district cultivated mushroom this year.

#### Mushroom Spawn Unit:

Adani foundation running a Mushroom spawn unit under Tirora Pragatishil Mahila Producer Company Ltd. where 3 train SHG women are working to make quality spawns. From this unit we provide spawns to SHG women in all over the district.

#### Output

- This year Mushroom has been cultivated on total **4808** beds.
  - Produced **12020** kg of Oyster Mushroom.
  - Women earned Rs. **21,63,600/-** Net Profit
- 1250 kg** Spawns are prepared.



## ▪ Lac Bangle making

The Lac Bangle making is a skill based activity. Raw material for lac bangle i.e. lac which is being cultivated on large scale by farmers in Gondia District. AF initiated Lac Bangle making programme to train local women SHG's. Near about 45 skilled SHGs' (including Tribal women) are involved in this initiative who are making Lac bangles, cold lack bangles, saree pins and various product of lac on their own with packaging and branding, and sell these products locally.

This year 2 SHG women from "Santoshi Swayam Sahayata Mahila Bachat Gat" showcased their Lac products at "Sathwara Mela" Arrange by Adani foundation Ahmadabad.

### Output

- This year's total income is Rs. **50600/-**
- Near about 1200 products are prepared and sold this year.



## Community Infrastructure development

### ▪ Drinking Water facilities

Access to drinking water is crucial for the well-being of rural communities. Providing adequate drinking water facilities in villages can yield several benefits, such as improved health, productivity, and overall quality of life. Women and children in villages often spend considerable time and energy collecting water from distant sources. Providing drinking water facilities in villages can save time and effort, allowing them to engage in other productive activities. Clean drinking water can significantly enhance the quality of life in villages by ensuring access to basic needs and promoting the overall well-being of the villagers.

Seeing residents' problems and drinking water requirements in nearby villages, the Adani foundation provided drinking water facilities.

### Activities conducted to provide Drinking Water facilities

#### 1. Drinking water facility at Ramatola Hamlet of Kachewani village

Constructed RCC water storage tank at Ramatola Hamlet of Kachewani village. The drinking water project will help to restart difunctional drinking water scheme at Ramatola hamlet and provide safe drinking water to more than 90 families and **418** villagers, as well as help to reduce drudgery of women for managing drinking and domestic water requirement for the family.

#### 2. Bore well Project

Did a bore well in 2 villages of APML vicinity as Gumadhawada and Tikaramtola to restart their drinking water scheme for villages. Provide safe drinking water to **2476** villagers.

### Output

- Through construction of 7 KL RCC storage tank 418 villagers in Ramatola are gaining benefit of water through tap.



- Through Bore well work along with submersible pump and pipe line 2476 residence of Tikaramtola and Gumadhawada village are gating water through tab.

### Outcome

- Water is available at doorsteps for cooking and other domestic purpose, which is helping to reduce drudgery of women in rural area for managing drinking and domestic water requirement for family.
- The safe and adequate potable drinking water is helping to prevent water borne disease amongst community in the programme village.
- Community is understanding the use of safe water by the drinking water programme which will help to control wastage of water.

## Human interest stories



### Z.P.Primary school Chorkhamara

School name- Z.P.Primary school Chorkhamara  
Village – Chorkhamara

Nestled in the heart of Gondiya district, Maharashtra, lies Chorkhamara, a quaint village with a population of approximately 500. The majority, around 80%, belong to scheduled tribes, while the remaining 20% are from the scheduled caste. Traditionally reliant on agriculture, the villagers faced the harsh reality of drought, leading many to migrate in search of livelihoods, leaving their children in the care of grandparents or single mothers.

At the village's core stood a primary government school, a humble establishment catering to a mere eight students across grades one to five, all sharing a single room due to the lack of proper facilities. The absence of even basic amenities like toilets reflected the dire state of the school, prompting parents to enroll their children in distant ashram schools.

Despite these challenges, a group of dedicated teachers embarked on a mission to rejuvenate the school. They initiated dialogues with parents and the community, fostering trust and a shared vision for the school's future. Their efforts were galvanized by the Adani Foundation's Aamchi Shala Aadrash Shala competition, which provided a clear framework for improvement.

This newfound purpose united the entire village, with teachers, parents, students, and community members joining forces to transform the school. Their collective endeavor was rewarded when the school ranked third among 595 primary schools in the district.

The synergy between teachers, School Management Committee (SMC) members, parents, and villagers was instrumental in this transformation. Their unity and commitment led to financial contributions from both the community and the Gram Panchayat, enabling the school to evolve from a single-room setup to a well-equipped educational institution.

The Aamchi Shala Aadrash Shala program not only facilitated infrastructure development but also became a catalyst for community engagement and





fundraising. This year, the school successfully raised approximately ₹53,000 from local contributions.

The tangible improvements in the school's infrastructure and quality of education have significantly increased enrollment to 40 students, with some even transferring from private institutions. This shift is a testament to the growing trust and credibility of the government school, a direct outcome of the collective efforts and the impact of the Aamchi Shala Aadrash Shala program.



## Rewati Patle's Journey to Empowerment

Name- Mrs. Rewati Patle.

Village-Chikhali.

Age-39

Mrs. Rewati Patle, a resident of Chikhali village, is a 39-year-old woman living with her husband and their two daughters. Harishankar works as a worker in Adani, and the couple owns a 5-acre farm where they cultivate rice as a single crop.

In the earlier days, Rewati was a homemaker who also worked on the farm. However, their income barely covered their basic expenses, leaving her concerned about her daughters' education. Despite facing social pressures, Rewati, who was a bright student in her school days, aspired to become a police officer and even attempted the police recruitment exams twice.



Unfortunately, she had to get married at the age of 20 while pursuing her BA degree.

In 2010, Adani Foundation initiated various projects in the Tirora block, including the Suposhan program. In 2016, Rewati joined as a Suposhan Sangini, receiving a monthly income of 5 to 6 thousand for five years. Her active involvement and confidence grew during this time, leading her to become a trusted figure within the community.

In 2020, Adani Foundation introduced a Dairy Development Program to encourage farmers to venture into the dairy business. The TFPC (Tirora Farmer Producer Company), under Adani Foundation, established three Bulk Milk Collection centers. Recognizing Rewati's capabilities, the foundation approached her to manage the BMC in Chikhali.

Initially hesitant about the unfamiliar role, Rewati embraced the challenge as an opportunity. Starting with a daily milk collection of 60 to 65 liters from 20 farmers, the Chikhali BMC now collects over 25,000 liters per day from 203 farmers. Rewati Tai now enjoys a fixed monthly income of Rs. 8,000 and can save for her elder daughter's education, who is currently in the 12th grade. She has also been able to contribute to the construction of her house.

Rewati Tai has become a role model and a source of inspiration. Respected for her hard work and dedication, she handles all technical aspects of the work, including repairing machines from all the canters. Her journey reflects resilience, determination, and the ability to transform challenges into opportunities.



## **Tapovan Dham Revitalization: Adani Foundation's Path to Accessibility and Unity**

Tapowan Dham, situated in Kawalewada village alongside the Wainganga River in Tirora block, Gondia, has been a cherished place for Hindu religious rituals and gatherings. During the COVID-19 pandemic, its popularity surged as people from various regions sought solace and spirituality in its serene surroundings. However, it lacked essential facilities and accessibility, prompting the local villagers to request assistance from the Adani Foundation. In response, the Adani Foundation initiated a transformative work to construct steps, enhancing accessibility and safety for the temple's visitors. Before the foundation's intervention, the site faced several challenges, including inadequate infrastructure, increased footfall, and safety concerns. The Adani Foundation took on the construction of a modern kitchen shed in 2021-2022, recognizing the importance of having a space for preparing meals and providing for the visiting devotees. Subsequently, in 2023, constructed proper steps along the riverbank to provide safe and convenient access to the riverbed for performing rituals. The impact of these initiatives was significant. The steps ensured the safety of visitors near the riverbed, allowing them to perform rituals without the risk of accidents. The kitchen shed enhanced the overall experience for visitors, providing a comfortable space to spend time with their families and participate in religious rituals. These improvements also fostered a greater sense of community and religious unity among people from various nearby regions.

The Adani Foundation's work was made possible through close collaboration with the local community, who proactively sought assistance from the foundation. This initiative has not only provided convenience but also preserved and promoted the rich cultural and religious traditions of the region, making Tapowan Dham a safer, more accessible, and vibrant place of worship and community gathering, enhancing the quality of life for those who visit and reside in Kawalewada village.







# Thank you



Site office address:

Adani Foundation

Plot A-1, Tirora Growth Centre, MIDC Area, Tirora, Dist. Gondia 441 911, Maharashtra,  
India





## SAKSHAM- ADANI SKILL DEVELOPMENT CENTRE

An initiative of Adani Foundation, a CSR wing of ADANI Group of Companies, A section 8, Non-for-Profit company, **"Adani Skill Development Centre"** is registered on **16<sup>th</sup> May 2016** to focus on Skill Development activities to contribute in Nation Building to bridge the Skill Gap demand & supply. Adani Skill Development Centre, Tiroda is the first SAKSHAM Skill Centre set up on 14<sup>th</sup> Dec 2016 and also the first one to obtain work orders to train 335 candidates from the Tribal Department (GoM) along with Resume services, Nagpur. The first batch of ASDC Tiroda commenced on 21.04.2017 for imparting Welding and Electrician trade training to I.T.I. passed Tribal Youth of Gondia and Bhandara district.

### VISION

- ❖ To make everyone Skilled, Employable & Entrepreneur to benefit them in gaining or advancing their career aspiration to uplift the social life of Citizens of India with mapping the demands of Industries of getting Trained Manpower

### MISSION

- ❖ To create a transformative educational experience for candidates by focusing on bridging the industry skill gap and by creating a collaborative environment open to the free exchange of ideas, where research, creativity, innovation, and entrepreneurship can flourish with a sustainable livelihood.

### OBJECTIVE

- ❖ Sustainable development in and around the geographical locations of Adani Power Ltd, Tiroda.
- ❖ Bridging the wide gap between demand & supply of human resource.
- ❖ Spreading awareness regarding availability, needs and vision for career development and education.
- ❖ Facilitating, spreading awareness, creating new opportunity to upgrade skills by organizing various skill training in the region.
- ❖ Improving overall status of rural youth and women in the society by enhancing their entrepreneurship skills.
- ❖ Encouraging & helping local youth to become self-dependent and live a dignified life.
- ❖ Building a feeling of harmony in the society by creating a rapport of goodwill, mutual trust and respect.

### HIGHLIGHTS

- ❖ In our Centre a total of 4136 candidates trained till 31-03-2024.
- ❖ In our Centre domain trade 1516 and non-domain trade 2620 candidates trained till date.
- ❖ Our trained candidates passed ratio is 100%.
- ❖ In our Centre all domain trade trained candidates, three company offers have arrange.
- ❖ In our centre all domain trade trained candidate's placement ratio is above 90%.
- ❖ We have signed MOU of nearly 15 companies for 1100 candidates and signed our own batch MOU.
- ❖ More than 100 stories databank is preserved.
- ❖ We conducted an online Job fair (Shares all companies related information) for all trained candidates and parents.

- ❖ As per H.O. instructions and SOP we organize every event like Induction program, celebration of festival, learn with fun activity, alumni meet etc. done on time.
- ❖ In our centre 100% ratio of completing monthly certificates by all staff members.
- ❖ Regular databases are maintained on ERP portals and shared drives.
- ❖ Our centre is authorised centre of testing high pressure welding from Directorate Steam Boiler Maharashtra State.
- ❖ Out of several best methods that are followed at ASDC Tiroda, many of them are told to be implemented at the other centres.

#### TRAINING STATISTICS:

In the year 2023-24, Total Trained 504 candidates at ASDC Tiroda.

ASDC Tiroda Training and Placement Details								
S. N.	Trade	Total Female	Total Male	Total Trained	Total Upskilled	Not willing to work /Higher Studies	Self Employed	Total Placed
1	Assistant Electrician	35	101	136	0	12	0	124
2	Welding Technician	4	91	95	0	7	0	88
3	Beauty Therapist	120	0	120	0	11	109	0
4	Digital Literacy	150	0	150	150	0	0	0
5	Practical Hydrography	0	3	3	0	2	0	1
<b>Total</b>		<b>309</b>	<b>195</b>	<b>504</b>	<b>150</b>	<b>32</b>	<b>109</b>	<b>213</b>

Topmost Monthly Salaries Earning, 10 Working Candidates Details, ASDC Tiroda							
S. N.	Candidates Name	Trained Course	Trained Year	Joined Monthly Salaries	Joined Company Name	Currently Working Monthly Salaries	Currently Working Company Name
1	Uddhav Bhimraj Daddemal	Welding Technician	2017	13000	Ajayanta Enterprises Silwasa, Nashik	115000	Polymer Vision Technology LLC, Dubai
2	Anil Sukhdeo Chobhare	Assistant Electrician	2019	11000	Polybond India Pvt. Ltd. Pune	95000	Apex Scabholding LLC, Dubai
3	Deepak Gowradhan Raut	Welding Technician	2018	11760	Wheels India Ltd. Rajangaon, Pune	90000	Comet Logistics, Sea Cargo Services, Dubai
4	Narad Parasram Dhurve	Welding Technician	2017	9800	PIAGGIO Vehicle Pvt. Ltd. Pune	52000	Indian Railway, Hyderabad
5	Hauslal Tilakchand Chulpar	Assistant Electrician	2017	9800	PIAGGIO Vehicle Pvt. Ltd. Pune	48000	M.S.E.B. Parbhani, Maharashtra
6	Vicky Umakant Bhoyar	Welding Technician	2019	10222	VARROC Engineering Ltd. Pune	32000	Mecedes-Benz, Pune



7	Akash Chandrkumar Damahe	Assistant Electrician	2019	10710	Western Refrigeration Pvt. Ltd. Atgaon, Thane	29000	Samrudhi Highway Tollnaka, Elect. Maint. Dept. Nagpur
8	Anil Purushottam Tumlam	Welding Technician	2017	9800	PIAGGIO Vehicle Pvt. Ltd. Pune	26000	Jai Bharat Maruti Pvt. Ltd. Pune
9	Kaushik Tejendra Shibhadre	Assistant Electrician	2019	10696	Supreme Treon Pvt. Ltd. MIDC, Pune	24000	M.S.E.B. Katraj, Pune
10	Krunalkumar Gajanan Maraskolhe	Welding Technician	2018	11760	Wheels India Ltd. Rajangaon, Pune	23760	Wheels India Ltd. Rajangaon MIDC, Pune

## Glimpse





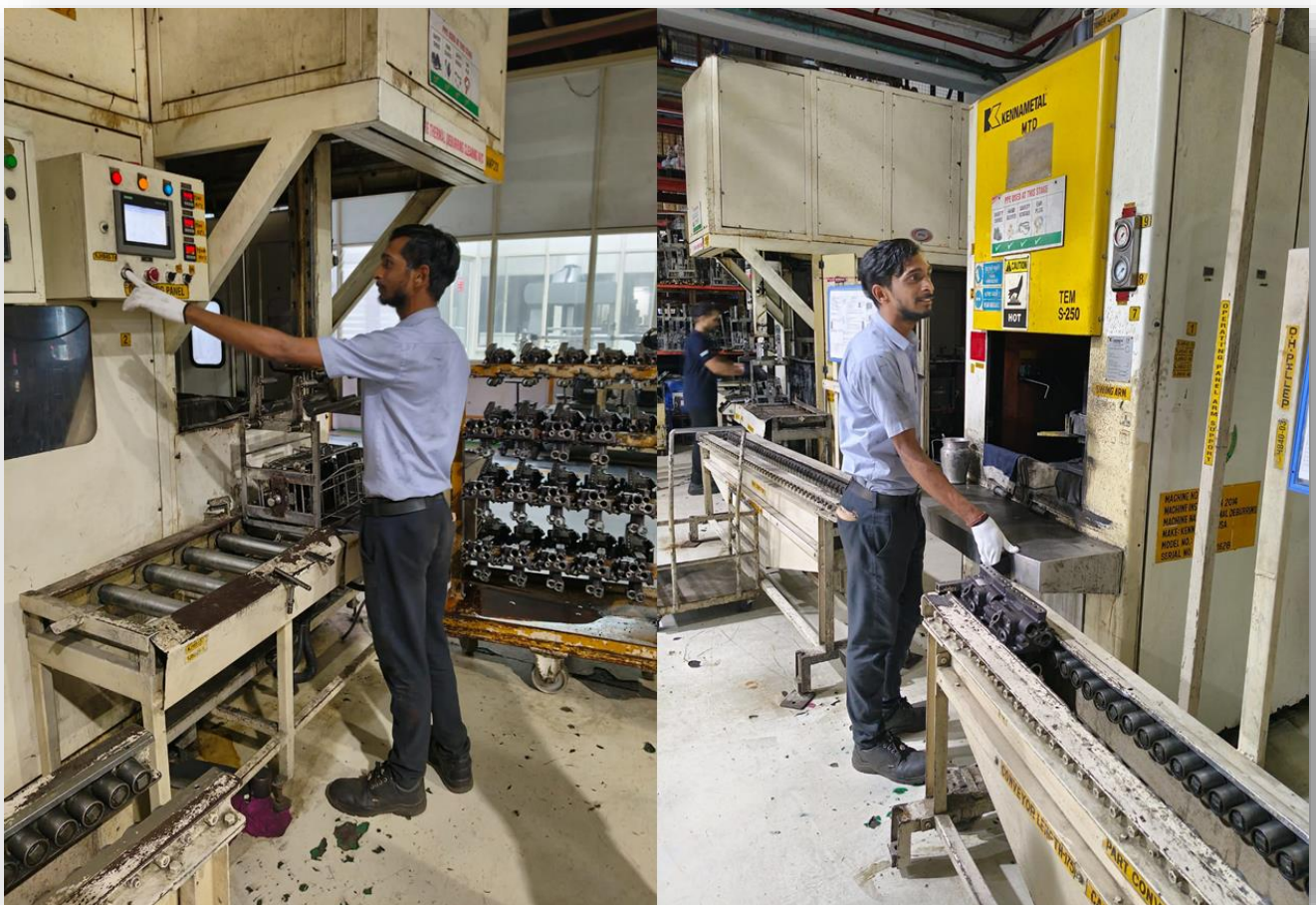
## **Stories of SAKSHAMAARTHIs**

Mr. Akash Meshram comes from the rural region and tribal community of a small village from Rajapur, Tumsar block, Bhandara had high aspirations and big dreams, however he didn't know what destiny had planned for him. His father was a farmer. There are four members in my family, my father, mother, younger brother, and younger sister. He is ITI pass out but not an idea to my economically challenged families, are now conquering such limitation to achieve pinnacles of success.

My friend told me regarding ASDC SAKSHAM Training Centre, I have decided to enroll myself in an Assistant Electrician course. My education stopped during economic conditions, and I went through to find a job after ITI passed out for family financial support. When Akash started the training program in ASDC Tiroda, he had no idea that it would become so successful. Akash managed to complete training from the ASDC Tiroda Centre within Assistant Electrician Trade.

Akash was smart and understood all the theoretical lectures. He was always attentive and sincere during the practical sessions. In fact, he was also part of all extracurricular activities of the training and spread awareness about the Skill in his neighborhood. Without wasting time after completing his course he got a job in Mahindar and Mahindra, Farm division, Hingna MIDC, Nagpur as a Assistant Technician. Now he earns Rs. 18,000 PM. He is currently supporting his family financially.

He gave a message to every youth: don't miss any opportunity of learning, only learning skill is the key to success. Success is not final; It is the courage to continue that counts. SAKSHAM is the best platform to learn many more and build confidence in everyone thanks to the ASDC team.



Ref: APLT/ENV/MPCB/ES/97/23

Date: 25.09.2023

To

**The Member Secretary**

**Maharashtra Pollution Control Board**

Kalpataru Point, 2<sup>nd</sup> – 4<sup>th</sup> Floor

Opp. Cine Planet Cinema, Near Sion Circle,

Sion (East), Mumbai – 400 022

**Sub: Submission of Environment Statement 2022-23 for Adani Power Limited, Tiroda, Gondia, Maharashtra.**

Ref: UAN. MPCB-ENVIRONMENT\_STATEMENT-0000059268 dated 25.09.2023

Dear Sir,

With reference to above subject, we have submitted an online Environment Statement for Adani Power Limited, Tiroda, Gondia, Maharashtra for the financial year ending March 31, 2023. A copy of statement is enclosed for your reference.

We hope you will find the report in order.

Thanking You,

Yours faithfully



(Kanti Biswas)

**Station Head**

**Adani Power Limited, Tiroda**



*Encl.: As Above*

Copy for kind information to: -

- 3) The Regional Officer, MPCB RO office, Nagpur.
- 4) The Sub Regional Officer, MPCB SRO office, Bhandara.



# Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

## FORM V

(See Rule 14)

Environmental Audit Report for the financial Year ending the 31st March 2023

### Unique Application Number

MPCB-ENVIRONMENT\_STATEMENT-0000059268

### Submitted Date

25-09-2023

## PART A

### Company Information

#### Company Name

Adani Power Limited

#### Application UAN number

MPCB-CONSENT-0000142503

#### Address

plot A 1, Tirora Growth centre, MIDC Area, Tirora, Gondia

#### Plot no

PLOT NO: A-1, TIRODA GROWTH CENTRE, MIDC, TIRODA

#### Taluka

Tiroda

#### Village

MIDC Tirora

#### Capital Investment (In lakhs)

1847648.00

#### Scale

L.S.I

#### City

Gondiya

#### Pincode

#### Person Name

Kanti Biswas

#### Designation

Station Head

#### Telephone Number

8875088555

#### Fax Number

07198253971

#### Email

Kanti.Biswas@adani.com

#### Region

SRO-Bhandara

#### Industry Category

Red

#### Industry Type

R48 Thermal Power Plants

#### Last Environmental statement submitted online

no

#### Consent Number

MPCB-CONSENT-0000142503

#### Consent Issue Date

2022-11-10

#### Consent Valid Upto

2023-08-31

#### Establishment Year

2012

#### Date of last environment statement submitted

Sep 26 2022 12:00:00:000AM

#### Industry Category Primary (STC Code) & Secondary (STC Code)

### Product Information

#### Product Name

Fly Ash Bricks

#### Consent Quantity

3650000

#### Actual Quantity

791508

#### UOM

Nos./Y

Electricity Generation

3300

2579.96

Mwh

### By-product Information

#### By Product Name

Ash

#### Consent Quantity

4815193

#### Actual Quantity

4638788

#### UOM

MT/A

## Part-B (Water & Raw Material Consumption)

### 1) Water Consumption in m3/day



<b>Water Consumption for Process</b>	<b>Consent Quantity in m3/day</b>	<b>Actual Quantity in m3/day</b>
	26592.00	1061.00
<b>Cooling</b>	163728.00	142615.00
<b>Domestic</b>	1440.00	942.00
<b>All others</b>	100.00	100.00
<b>Total</b>	191860.00	144718.00

2) Effluent Generation in CMD / MLD

Particulars	Consent Quantity	Actual Quantity	UOM
Trade effluent	34205	22986	CMD
Domestic Effluent	192	187	CMD

2) Product Wise Process Water Consumption (cubic meter of process water per unit of product)

Name of Products (Production)	During the Previous financial Year	During the current Financial year	UOM
Bricks	7.35	7.35	CMD
Thermal Power Plants	137959	144618	CMD

3) Raw Material Consumption (Consumption of raw material per unit of product)

Name of Raw Materials	During the Previous financial Year	During the current Financial year	UOM
Coal	0.66	0.64	MT/MWH

4) Fuel Consumption

Fuel Name	Consent quantity	Actual Quantity	UOM
LDO	3.11	2.5	CMD

Part-C

Pollution discharged to environment/unit of output (Parameter as specified in the consent issued)

[A] Water

Pollutants Detail	Quantity of Pollutants discharged (kL/day)	Concentration of Pollutants discharged(Mg/Lit) Except PH,Temp,Colour Concentration	Percentage of variation from prescribed standards with reasons %variation	Standard	Reason
Zero discharge maintained	0	0	-	-	-

[B] Air (Stack)

Pollutants Detail	Quantity of Pollutants discharged (kL/day)	Concentration of Pollutants discharged(Mg/NM3)	Percentage of variation from prescribed standards with reasons %variation	Standard	Reason
	Quantity	Concentration	%variation	Standard	Reason
Particulate Matter (PM)	11690	38	-	50 mg/Nm3	-
SOx	247296	806	-	-	SO2 emission norms will be applicable from Jan'27 as per MoEF&CC Notification dtd 05.09.22 for C category non-retiring plants

NOx	97427	318	-	450 mg/Nm3	-
Hg	4.86	0.0159	-	0.03 mg/Nm3	-

## Part-D

HAZARDOUS WASTES

1) From Process

Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
5.1 Used or spent oil	94.2	81.2	KL/A
33.1 Empty barrels /containers /liners contaminated with hazardous chemicals /wastes	478	570	Nos./Y
35.2 Spent ion exchange resin containing toxic metals	1.99	1.375	KL/A

2) From Pollution Control Facilities

Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
35.3 Chemical sludge from waste water treatment	0.660	0.240	MT/A

## Part-E

SOLID WASTES

1) From Process

Non Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
Bottom Ash	908939	927758	MT/A

2) From Pollution Control Facilities

Non Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
Fly Ash	3635757	3711031	MT/A

3) Quantity Recycled or Re-utilized within the unit

Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
0	0	0	MT/A

## Part-F

Please specify the characteristics(in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

1) Hazardous Waste

Type of Hazardous Waste Generated	Qty of Hazardous Waste	UOM	Concentration of Hazardous Waste
5.1 Used or spent oil	81.2	KL/A	Analysis report enclosed
33.1 Empty barrels /containers /liners contaminated with hazardous chemicals /wastes	578	Nos./Y	Empty containers send to MEPL, Nagpur
35.2 Spent ion exchange resin containing toxic metals	1.375	KL/A	Waste resin send to MEPL, Nagpur
35.3 Chemical sludge from waste water treatment	0.240	MT/A	Chemical sludge from ETP send to MEPL Nagpur

2) Solid Waste

Type of Solid Waste Generated	Qty of Solid Waste	UOM	Concentration of Solid Waste
-------------------------------	--------------------	-----	------------------------------

Domestic Bio-degradable waste	27.454	MT/A	Food & vegetable and horticulture waste used for composting
Paper generation & in-house recycling	4.85	MT/A	Stationery paper & Packing materials
Other Solid Waste	1608.39	MT/A	Plastics, metals, wood etc.
E-Waste	4.35	MT/A	CEEW5 & CEEW5
Biomedical Waste	0.0148	MT/A	Yellow, Red, White & Blue categories
Used battery	4.7810	MT/A	Lead Acid Battery

## Part-G

### **Impact of the pollution Control measures taken on conservation of natural resources and consequently on the cost of production.**

<b>Description</b>	<b>Reduction in Water Consumption (M3/day)</b>	<b>Reduction in Fuel &amp; Solvent Consumption (KL/day)</b>	<b>Reduction in Raw Material (Kg)</b>	<b>Reduction in Power Consumption (KWH)</b>	<b>Capital Investment(in Lacs)</b>	<b>Reduction in Maintenance(in Lacs)</b>
Various Energy conservation initiative	0	0	29501120	3782700	663	0

## Part-H

### **Additional measures/investment proposal for environmental protection abatement of pollution, prevention of pollution.**

#### **[A] Investment made during the period of Environmental Statement**

<b>Detail of measures for Environmental Protection</b>	<b>Environmental Protection Measures</b>	<b>Capital Investment (Lacks)</b>
Pollution Control Equipment O&M	ESP, Bag Filters, ETP upgradation etc.	733
Pollution Monitoring, Study and Analysis	Environment Monitoring Equipment's, Third Party Monitoring, Fly Ash Lechability Study and Hydrogeological Study Biodiversity Assessment	92
Green Belt Development including Nursery	Nursary Development, Sapling Plantation and Maintenance of Existing Green Belt. Also plantation in gap filling areas carried out.	272
Corporate Social Responsibility	Under CSR Activities Deeping and renovation of Ponds, Health & Sanitization, Waste Management and Skill Development	271
Legal & Consent Fees	Consent to Operate and JVS sampling done by MPCB and Hazardous Waste Management by MEPL	397
Training & Awareness	Environmental Workshop, Seminar and Training and Celebration of World Environment Day	4
Waste Management	Fly Ash Utilization and its Management, Single used plastic phase-out, BMW, Domestic Waste	9027
Establishment of Ash Utilization Research Park	For Maxmisation of Ash Utilization	271
Energy Conservation Initiatives	Implementation of Energy Efficient Technologies in Electrical and process Systems to reduce carbon foot print and climate change mitigation	663

#### **[B] Investment Proposed for next Year**

<b>Detail of measures for Environmental Protection</b>	<b>Environmental Protection Measures</b>	<b>Capital Investment (Lacks)</b>
Pollution Control Equipment O&M	ESP, Bag Filters, ETP etc.	786
Pollution Monitoring, Study and Analysis	Environment Monitoring Equipment's, Third Party Monitoring, Fly Ash Lechability Study and Compliance Audit etc.	277

Green Belt Development including Nursery	Nursary Development, Sapling Plantation and Maintenance of Existing Green Belt. Also plantation in gap filling areas carried out.	278
Corporate Social Responsibility	Under CSR Activities Deeping and renovation of Ponds, Health & Sanitization, Waste Management and Skill Development	185
Legal & Consent Fees	Consent to Operate and JVS sampling done by MPCB and Hazardous Waste Management by MEPL	388
Training & Awareness	Environmental Workshop, Seminar and Training and Celebration of World Environment Day	4
Waste Management	Fly Ash Utilization and its Management, Single used plastic phase-out, BMW, Domestic Waste	15000
Establishment of Ash Utilization Research Park	For Maxmisation of Ash Utilization	67
Energy Conservation Initiatives	Implementation of Energy Efficient Technologies in Electrical and process Systems to reduce carbon foot print and climate change mitigation	150

## Part-I

### Any other particulars for improving the quality of the environment.

#### Particulars

-

#### Name & Designation

-

#### UAN No:

MPCB-ENVIRONMENT\_STATEMENT-0000059268

#### Submitted On:

25-09-2023