adani
Power

Ref: APL/APJL/EMD/EC/MoEFCC/214/11/22
Date- 22/11/2022

To,

Additional Principal Chief Conservator of Forest
Ministry of Environment, Forest and Climate Change
Regional Office, East Central Region
Second Floor, Headquarter-Jharkhand State Housing Board,
Harmu Chowk, Ranchi- 834 002, Jharkhand

Sub: Six Monthly Compliance Status of Environment Clearances for Godda Thermal Power Plant at Motia, Patwa & Adjacent Villages. Godda Tehsil, Godda District in Jharkhand.

Ref: Environment Clearance Letter no: **J-13012/01/2016-IA.I (T),** Dated: **31.08.2017** & Amendment dated 03.09.2019 & 27.02.2020.

Dear Sir,

With reference to above subject, please find enclosed herewith Six-Monthly Environment Clearances (EC) compliance status report along with Environmental monitoring results like Ambient Air Quality, Noise level, Water Quality, green belt & CSR progress report etc. for the period of **April'2022 to September'2022** in soft (**e-mail**).

This is for your kind information & record please.

Thanking You,
Yours faithfully,
for **Adani Power (Jharkhand) Limited**

(Santosh Kumar Singh)
Authorized Signatory

Encl: as above

cc:

Member Secretary
Central Pollution control Board
Parivesh Bhavan, East Arjun Nagar
New Delhi- 110 032.

Member Secretary,
Jharkhand Pollution Control Board
TA Division Building (Ground Floor), HEC,
Dhurwa, Ranchi-834 004 (JH)

The Regional Officer,
Jharkhand Pollution Control Board,
Dumka, Jharkhand

Adani Power (Jharkhand) Ltd
Adani Corporate House
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SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE (EC)

1600 (2×800) MW THERMAL POWER PLANT

At

GODDA TALUKA, GODDA DISTRICT
JHARKHAND

Submitted to:

Regional Office, East Central Zone
Ministry of Environment, Forests & Climate Change,
Central Pollution Control Board, New Delhi &
Jharkhand State Pollution Control Board, Ranchi

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Submitted By:

Environment Management Department
Adani Power (Jharkhand) Limited
Motia, Patwa & adjacent Village,
Godda Taluka, Godda District
Jharkhand

PERIOD: April'2022 – September'2022

CONTENTS

ADANI POWER (JHARKHAND) LIMITED

Introduction

Adani Power (Jharkhand) Ltd. AP(J)L, a wholly owned company of Adani Power Limited, is developing 1600 (2x800) MW Coal-based Ultra Supercritical Thermal Power Plant at Village Motia, Patwa and adjacent villages of Godda & Poraiyahaat Blocks of Godda District in Jharkhand. The power plant is based on ultra-supercritical, energy efficient & environment friendly technology.

AP(J)L has been granted Environmental Clearances & Consent to Establish by Ministry of Environment & beForest and Jharkhand state Pollution Control Board and AP(J)L has also obtained all necessary statutory / mandatory clearance respectively.

India and Bangladesh desire to enhance traditional ties of friendship, through economic cooperation. Realizing the ever increasing demand of electricity for the socio-economic development and progress, the Government of India (GoI) and Government of Bangladesh (GoB) have signed a Memorandum of Understanding (MoU) on 11 January, 2010.

As provided in the MoU, GoB and GoI shall inter-alia undertake to encourage and facilitate joint co-operation between the parties in Power generation, transmission, energy efficiency and development of various types of renewable energy;

Accordingly, Adani Power Limited (APL) on 11.08.2015 signed a MoU with Bangladesh Power Development Board (BPDB), to develop a 2X800 MW thermal power plant on BOO basis in India and supply the entire power generated to Bangladesh Power Development Board (BPDB) through a dedicated Transmission Line.

Status of the Project:

AP(J)L has been granted Environment Clearances (EC) vide Letter no: J13012/01/2016-IA.I (T) dated: 31.08.2017 and amendment in EC vide letter dated 03.09.2019 for changing the source of water form Chir River to Ganga River. AP(J)L has also been granted amended EC vide Letter No: J-13012/01/2016-IA.I (T) dated 27.02.2020 to incorporate sector specific Special Economic Zone for Power under SL.No.7(C) of Schedule as mentioned in EIA Notification, 2006.

AP(J)L has been obtained 1st "Consent to Operate" from Jharkhand State Pollution Control Board vide letter no. JSPCB/HO/RNC/CTO-14160004/2022/1514 dated 27.10.2022.

ADANI POWER (JHARKHAND) LIMITED

Compliance status of Environmental Clearance

1600 MW (2×800 MW) Godda Thermal Power Plant

Environment Clearance Letter no: J-13012/01/2016-IA.I (T) dated: 31.08.2017 &

Its Subsequent Amendment Letter no. J-13012/01/2016-IA.I (T) dated 03.09.2019 and 27.02.2020

Si. No.	Specific Conditions	Compliance Status
(i)	Total Ash and Sulphur content in the imported coal shall not exceed 25% and 0.5% respectively.	Noted & compliance assured during operation stage of plant.
(ii)	Land acquisition shall be carried out by the State Govt. in accordance with Santhal Pargana Tenancy Act, 1949, Right of Fair Compensation and Transparency in the Land Acquisition, Rehabilitation Act, 2013 and other prevailing laws. Documents in support of land acquisition after completion acquisition process shall be submitted to this Ministry as well as concerned Regional Office.	Complied. Land already acquired & Land possession documents has already been submitted.
(iii)	As per the Revised Tariff Policy notified by Minister of Power vide dated 28.01.2016, project proponent shall explore the use of treated sewage water from the Sewage treatment plant of Municipality / local / similar organization located within 50 km radius of the proposed power project to minimize the water drawl from surface water bodies.	There are no STPs of municipality/local bodies within 50 KM of the site.
(iv)	Compliance of EC conditions, E(P) Act 1986, Rules and MoEF&CC Notifications issued time to time shall be achieved by a qualified environment officer to be nominated by the Project Head of the company who shall be responsible for implementation and necessary compliance.	Compliance assured. We have already established Environment Management Department with Senior Management at Corporate level as well as at Site.
(v)	MoEF&CC Notification S.O. 3305 (E) dated 07.12.2015 and subsequent notifications issued time to time shall be implemented with respect to specific water consumption, zero liquid discharge and revised emission standards. The PM, SO_2, NOx and Hg emissions shall not exceed 30 mg/Nm^3, 100	Compliance assured during operational phase of the plant. High efficiency Electrostatic Precipitators (ESP) are installed to meet revised emission standard of <30 mg/ Nm^3 for PM.

	mg/Nm^3, 100 mg/Nm^3 and 0.03 mg/Nm^3 respectively. The specific water consumption exceed shall not exceed 2.5 m^3/MWh and zero wastewater discharge shall be achieved.	FGD & SCR are implemented to meet revised standard of SOx & NOx Emission. TPP has been designed to meet the Specific Water consumption of less than 2.5 m^3/MWh and zero waste water discharge.
(vi)	MoEF&CC Notifications on Fly ash utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804 (E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 and subsequent amendments shall be complied with.	Compliance assured once the project takes off. As per Fly Ash Notification, Half yearly & Annual Ash generation and utilization will be submitted to MoEF&CC, CPCB & JSPCB during operational phase of the plant.
(vii)	Separate Environmental Clearance may be obtained for the proposed Township as applicable under EIA notification 2006.	Separate Environment Clearance has been granted by SEIAA, Jharkhand for Residential Township vide letter No. EC/SEIAA/2017-18/2070/2017/207 dated 31/08/2018.
(viii)	Solar rooftops shall be installed in the surrounding villages as part of CSR activities.	Being complied. Solar lights being installed in surrounding villages wherever feasible through Adani Foundation as part of CSR activity. Fifteen (15) Nos. of Solar Street Lights installed in 12 remotest villages and road side points in 3 blocks namely Borio, Mandro and Sahebganj which benefiting more than 10,000 rural population.
(ix)	Skill mapping of the Project affected people (PAF) be carried out on a long-term basis for their livelihood generation. A report is to be submitted within 3 months to the Ministry from the date of issuance of environmental clearance.	Complied. Skill Mapping Report prepared by M/s Indian Institute of Social Welfare & Business Management (IISWBM) Kolkata has already been submitted to your good office along with compliance report. Skill Development Centre's are operational and total 3884 candidates are trained under different trades viz. Welder, Fitter, Mason and Bar bender, General Duty assistant, Hospitality, Electrical, industrial Sewing Machine Operator, and Digital Literacy classes. This year i.e., F.Y 22- 23, nine batches are operational consisting of 730 candidates. Detailed CSR report is attached as **Annexure – II.**

(x)	Modern methods of agriculture organic forming, compost / vermiculture making and utilization, drip/direct to root irrigation to be promoted in and around the Project area.	Noted & being complied. village level training (Theoretical & On-Field Demonstration) on Vermicomposting was conducted in 7 core, railway line and pipeline villages of Godda & Sahebganj district. Adani Foundation supported farming communities by promoting production of organic manure by installation of Vermi-Compost Bag/Vermibed across the core and pipeline village. 144 small & marginal farmers were supported to install 165 Vermicompost units including vermibeds, plastic sheets, earthworms, net, etc., along with conduction of training program and exposure visit on organic farming in 18 core, railway line and pipeline villages of Godda and Sahebganj district. Detailed CSR report is enclosed **as Annexure- II.**
(xi)	While implementing CSR, • Women empowerment is important. Therefore, proper skill based training/long term livelihood revenue generation be created for all of them. • Computer facilities may be provided in the school along with a trained computer teacher to inculcate computer skill among the youths. • Water supply provisions shall be made for all the bio-toilets under Swachh Bharat Abhiyan. • Preventive health programme may be preferred than the curative health programme such as nutrition development of small children and around the project.	Being Complied. • Adani Foundation supported the Women Self Group- Phoolo Jhano Saksham Sakhi Mandal (PJSASM) in accomplishment of 1,16,713 Flags assigned by district administration under the National Campaign "Har Ghar Tiranga". More than 200 women earned income from Flag stitching work. • Adani Foundation in partnership with District Administration launched Gyanodaya project to promote e-learning through Smart Classes. Gyanodaya bagged **"Indian Chamber Of Commerce (ICC) Social Impact Award -Promoting Education"** for providing quality education in remotest and untapped villages of Godda district through smart learning among more than 8000 students of 316 government schools. • Digital Literacy classes are operational which benefited 3884 candidates. • We have constructed 59 model bathrooms with soak pit in various villages towards creating awareness for

		cleanliness and hygiene by our program named "SWACCHAGRIH". • Curative health program being taken care under "SuPoshan" program. Detailed CSR report is attached as **Annexure – II.**
(xii)	Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within six months.	Complied. Vision document has already been submitted along with compliance report.
(xiii)	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and the status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	Noted and compliance assured. Project is under Commissioning phase and it is proposed to utilize the roof tops of buildings which are feasible for installation of solar panels during plant operation.
(xiv)	A long term study of radio activity and heavy metals content on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. 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.	Noted. Radioactivity testing result/report of two Coal samples (testing done by Board of Radiation and Isotope technology, Mumbai) from the source area already submitted along with EIA Report. Further, Radioactivity Test and Heavy Metal study report will be submitted during the plant operation. There is no proven technology to monitor radioactivity at plant level on continuous basis. Periodic test report will be submitted during operational phase of the plant.
(xv)	Online continuous monitoring system for stack emission, ambient air and effluent shall be installed.	Noted & compliance assured. AP(J)L has proposed to install Online Continuous Emission Monitoring System & Effluent Quality monitoring System. The monitoring system will be installed before COD of Plant.
(xvi)	High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that a particulate emission does not exceed 30 mg/Nm^3 as would be notified by the Ministry, whichever is stringent. Adequate dust extraction system such as cyclones/bag	Noted. High efficiency Electrostatic Precipitators (ESP) are installed in each boiler to meet PM emission of less than 30 mg/Nm^3.

	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 along with an environment friendly sludge disposal system.	Dust extraction system (Cyclone followed by bag filters) in coal crusher and coal transfer area (JNTs), rain gun type dust suppression system in coal yard and dry fog type dust suppression system in belt conveyor have been installed.
(xvii)	Adequate dust extraction system such as cyclones / bag filters and water spray system in dusty areas in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Dust extraction system with Bag filter in Crusher House is installed. Pneumatic ash handling system with bag filters for ash handling & water sprinkling system provided in Coal yard.
(xviii)	Monitoring of surface water quantity and quality shall be regularly conducted and records maintained shall be submitted to the Ministry regularly. Further, monitoring system shall be placed between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.	Compliance assured. Baseline data was collected during EIA study & Regular monitoring of Air, Water (surface & ground) is being carried out. Environmental Parameters monitoring results (including monitoring of Heavy Metals in Ground water) are being submitted periodically to RO, MoEFCC Ranchi, MS JSPCB, Ranchi & RO JSPCB, Dumka. Environmental monitoring reports are enclosed as **Annexure – I.**
(xix)	A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed report kept of the quantity of water harvested every year and its use.	Rain Water Harvesting (RWH) implemented and photographic evidence of the same submitted to Jharkhand State Pollution Control Board vide letter no. APJL/ENV/JSPCB/CTO/22 dated 31.10.2022.
(xx)	No water bodies including natural drainage system in the area shall be distributed due to activities associated with the setting up/operation of the power plant.	Noted & compliance assured. There are some first order streams, which is altered. The drainage profile maintained from SE to NW direction along the natural drainage profile. There is an unlined (kachcha) canal passing through the site, which is diverted along the Project boundary without disturbing flow and natural drainage pattern.
(xxi)	Additional soil for leveling of the proposed site shall be generated within the sites (to the	Noted & agreed.

	extent possible) so that natural drainage system of the area is protected and improved.	Excavated Soil being utilized within the project site to the extent possible for levelling and horticulture activities.
(xxii)	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb, etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.	Monitoring of Mercury and other heavy metals in bottom ash assured during operational phase of the plant. Dry Ash collection, pneumatic conveying and storage (silos) facilities are being established. Unutilized ash will be disposed off in the ash dyke through HCSD.
(xxiii)	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-ordinate with the State Pollution Control Board.	Noted & agreed. In case of mine void filling option undertaken during operational phase of the plant, detailed study from reputed institute shall be undertaken, adequate lining will be done and pollution control board shall be consulted.
(xxiv)	Fugitive emission of fly ash (dry and wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided with the local Panchayats.	Compliance assured during operational phase of the plant. To control fugitive emission, Bag filters are installed at Silo. Conditioned (moist) ash loading provision is available in fly ash silo. TPP will provide suitable compensation, if any damage in future.
(xxv)	Green belt consisting of three tiers of plantation of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 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 80%.	Compliance assured. Green belt development / plantation and landscaping completed in 9.7 acre and rest area is under progress in the available spaces along with project construction. In addition to plant area, over 363 households of more than 67 villages and Forest Office, Godda & Mahagama, were supported with fruit bearing saplings of Mango (3311), Lemon (330) and Guava (135) to conserve biodiversity and ecological

		restoration. Apart from above, avenue plantation (outside the plant premises) being done to improve the aesthetic look and environmental conservation. Our efforts are being made to develop more greenery in & around the plant with survival rate of more than 80%.
(xxvi)	Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.	Noted and compliance assured.
(xxvii)	The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	Corporate HSE policy is placed & signed by the Chairman. IMS implementation & certification for the project will be implemented during plant operation.
(xxviii)	CSR schemes identified based on need assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmes.	CSR activities are implemented in consultation and collaboration with the community & community leaders as well as District Administration. Regular community meetings are organized in all the villages to understand the issues of community. Social development activities have been carried out for Need Based families under the CSR activities by **Adani Foundation.** Need Based Assessment Study and Development of CSR report has already been submitted along with compliance report. Detailed CSR report is enclosed as **Annexure- II.**
(xxix)	For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable external agency shall be appointed. CSR activates shall be evaluated by an independent external agency. This evaluation shall be both concurrent and final.	Social development activities have been carried out for Need Based families under the CSR activities by **Adani Foundation.** Evaluation of CSR activities will be done during plant operation by external agency in every three years. However, an Annual Audit Plan is in place in the company which is conducted at all the

		sites. An internal Audit team undertakes review of the systems, process and also verifies on ground implementation of CSR activities as well as the systems. CSR report is enclosed as **Annexure- II.**
S.N	**General Conditions:**	**Compliance Status**
(i)	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.	Noted and compliance assured. Generated effluent shall be treated in ETP and treated effluent conforming to the prescribed standard shall be reuse within the plant. Separate Storm Water Drainage established.
(ii)	A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.	Compliance assured. Sewage Treatment Plants having capacity 2 x 10 m3/h provided and treated water shall be re-use suitably within the plant premises for green belt development.
(iii)	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 the Ministry as well as to the Regional Office of the Ministry.	Fire Safety Management Plan is prepared and implemented. Fire Safety Management Plan already submitted with compliance report of October 2018 to March 2019.
(iv)	Storage facilities for auxiliary liquid fuel such as LDO/ HFO /LSHS shall be made in the plant area in consultation with Department of Explosives, 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.	Complied. LDO has been properly stored within plant premises and license for storage of LDO has been obtained from Petroleum and Explosive Organization (PESO). DMP already submitted with compliance report of October 2018 to March 2019.
(v)	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied. First aid facilities, drinking water facility, Sanitation facility, Waste water disposal, solid wastes management and primary health facilities are being ensured at site.

(vi)	Noise levels emanating from turbine shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from source. 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 compressors etc shall periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	Necessary action/prevention measures have been taken care in design to maintain noise level within 85 dBA at source. High Noise areas are identified. Presently, being construction phase, Elevation Boards at MPH has been provided with mandatory Personnel Protective Equipment (PPE's). A complete medical check-up with audiometric test of workers & employees is being carried out prior their joining in the organization.
(vii)	Regular monitoring of ambient air ground level concentration of SO_2, NOx, $PM_{2.5}$ and PM_{10} and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limit, 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 shall be submitted to the regional office of this ministry. The data shall also be put on the website of the company.	Being complied. Regular monitoring of ground level concentration of Ambient Air for SO2, NOx, PM2.5 and PM10 and Hg is being carried out and monthly reports are being submitted to the MS, SEIAA & JSPCB Ranchi & RO JSPCB, Dumka. For selection of monitoring location and monitoring frequency in consultation with JSPCB, intimation letter also been submitted to the board vide our letter no. APJL/ENV/JSPCB/RO/0308 dated 31.08.2022. Monitoring frequencies are as below: • Ambient Air Quality twice in a week, • Water, wastewater quality & Noise once in Month and • Soil Quality once in a season (Except Monsoon). Periodic Environmental monitoring report is enclosed, Please refer **Annexure- I**. EC compliance report is uploaded on the company's website, www.adanipower.com
(viii)	Utilization of 100 % Fly ash generated shall be made from 4^{th} year of operation. Status of implementation shall be reported to the regional office of the Ministry from time to time.	Noted & Compliance assured. Ash utilization plan/schedule has been incorporated in the EIA report. Status of implementation will be reported to the

		Regional office, MoEF&CC regularly during plant operation.
(ix)	Provision shall be made for housing of the construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets. Mobile STPs, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the construction of the project.	Required hutment, drinking water, Mobile Toilets. Mobile STPs, Safe Drinking Water & Medical health care facilities, Medical health care facilities, Fuel for cooking and other infrastructure has been arranged on temporary basis during plant construction. Local manpower is preferred during Construction phase & hence, less necessity to build housing for the construction labour.
(x)	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 http://envfor.nic.in	Complied. Advertisement in 10 Local News Papers was published in Hindi & English. Copy of News Paper cutting already submitted along with Oct'17 to March'2018 compliance report.
(xi)	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, 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.	Complied. A copy of the Environment Clearance letter was provided to Panchayats, Zila Parisad and local Body. Acknowledgement already submitted along with compliance report. The clearance letter has been uploaded on the company website http://www.adanipower.com/
(xii)	The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutants levels namely SPM, RSPM ($PM_{2.5}$ & PM_{10}), SO2, NOx (ambient levels as well as stack emissions shall be displayed at a convenient location	Being complied. Six monthly compliance status reports are being submitted to MoEF&CC, CPCB & JSPCB. Compliance status uploaded on Company's website. Digital display board is under installation at the main gate of the power plant, before COD.

	near the main gate of the company in the public domain.photographs	Manual Display Board is already provided at main gate showing information on Ambient Air Quality and waste details are displayed at main gate which is maintained and updated periodically. Environmental monitoring report is enclosed, Please refer **Annexure- I** and manual display board photograph enclosed as **Annexure – III.**
(xiii)	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Minister by e-mail.	Noted. Consent to Operate issued by Jharkhand State Pollution Control Board vide letter no. JSPCB/HO/RNC/CTO-14160004/2022/1514 dated 27.10.2022. 1st Environment statement for the F.Y 22 – 23, shall be submitted on or before 30th September 2023 as per statutory time frame.
(xiv)	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, 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.	Six monthly compliance status reports are regularly submitted to MoEF&CC, CPCB & JSPCB. The same is sent by email also. Six monthly compliance report for the period of Oct'21 to Mar'22 submitted to your good office vide our letter no. APL/APJL/EMD/EC/MoEF/202/05/22 dated 24.05.2022. Compliance status updated on Company's website. https://www.adanipower.com
(xv)	The progress of the project shall be submitted to CEA on six monthly basis.	Report Submission to CEA is not applicable as Project is dedicated to Bangladesh Govt. and it is not connected to Indian Grid.
(xvi)	Regional Office of the MoEF&CC 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	Noted. Copies of Environment Impact Assessment report (EIA) with Environment Management Plan already sent to Regional Office, Ranchi,

	submitted from time to time shall be forwarded to the Regional Office for their reference during monitoring. Criteria pollutants levels including NO_x (from stack & ambient air) shall be displayed at the main gate of the power plant.	vide our letter no. APJL/ENV/EC/SMR/175 /05/2018, dated-14.05.2018 Digital display board is proposed to install at the main gate of the power plant, before COD. Manual Display Board is already provided at main gate showing information on Ambient Air Quality and waste details are displayed at main gate which is maintained and updated periodically.
(xvii)	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.	Separate budget has been already allocated for Environmental protection measures. Fund for Environment management: Capital Cost: Rs. 2,225.68 Crores
(xviii)	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.	Financial closures has been achieved and disclosed. Construction work for Site development, Boundary wall, Site office, Store and other facilities are almost completed. Main Plant Commissioning & trail run is in progress. Consent to Operate issued by Jharkhand State Pollution Control Board vide letter no. JSPCB/HO/RNC/CTO-14160004/2022/1514 dated 27.10.2022
(xix)	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 co-operation shall be extended all time.
Conditions of EC Amendment		
(i)	Stage-I Forest Clearance for diversion of 13.3293 ha for laying pipeline shall be submitted. As per Ministry's guidelines, a formal amendment will be issued after furnishing the Stage-I Clearance.	The copy of stage –I submitted before amendment. This condition stands deleted as per amended EC Vide No. J -13012/01/2016-I.A.I (T) dated 27.02.2020.

(ii)	In line with Ministry's OM dated 11.3.2010 in regard to Oil and Gas pipelines, in a similar manner, 10 trees to be planted for every tree cut in the non-forest area.	Noted. We have consulted Divisional Forest Officer (DFO), Godda vide our letter no. AP(J)L/FC/ENV/227/05/20 date 28.05.2020 to provide plantation scheme with demand note for proposed plantation. Compliance of Stage – I has already been submitted and verified by nodal officer, MoEFCC and also issued the Stage – II FC approval on 29.01.2021.
(iii)	There will be storage reservoirs for storing 15 MCM water to cater during lean season.	Noted and agreed. Compliance assured.
(iv)	Daily quantity (Average, minimum and maximum) of fresh water withdrawn from Ganga River near Sahebganj for the Power Plant shall be recorded and data base be preserved to ensure permissible drawl of fresh water from Ganga River. The source sustainability reports for withdrawal of water from Chir River and from the Ganga River shall be placed in the public domain by the proponent, either by uploading to the PARIVESH portal or its own website.	Noted & Agreed. Compliance assured during operational phase of the plant. Source sustainability reports for withdrawal of water from Chir River and from the Ganga River has been uploaded and is already available on https://parivesh.nic.in/
(v)	As per the original EC, 33% greenbelt of plant area shall be developed. In case of any shortage of land, additional land shall be acquired to meet the condition.	Noted & compliance assured. Green belt development / plantation and landscaping completed in 9.7 acre and rest area is under progress in the available spaces along with project construction. In addition to plant area, over 363 households and Forest Office, Godda & Mahagama, were supported with fruit bearing saplings of Mango (3311), Lemon (330) and Guava (135) to conserve biodiversity and ecological restoration. Apart from above, avenue plantation (outside the plant premises) being done to improve the aesthetic look and environmental conservation. Our efforts are being made to develop more greenery in & around the plant with survival rate of more than 80%.

(vi)	The conditions specified in the In-Principle (Stage-I) Forest Clearance dated 28.6.2019 shall be complied with. A compliance to these conditions shall also be submitted along with Six monthly compliance report. Further, copy of Formal (Stage-II) Approval shall be submitted as and when it is obtained.	Compliance of conditions mentioned in the In-Principle approval (Stage-I) Forest Clearance dated 28.06.2019 has been uploaded on https://parivesh.nic.in/. Compliance report of Stage – I Forest Clearance submitted along with EC compliance report for the period of Oct'19 to Mar'20. Stage II has been granted vide letter no. FP/JH/Others/32772/2018/4489 dated 29.01.2021. Copy of the same already submitted vide our previous compliance report for the period of October'20 – March'21.
(vii)	The total project area has now been reduced to 558 acres from 1255 acres. The remaining area (if acquired) shall be developed as greenbelt.	Noted. Power plant facilities have been reworked and total project area has now been optimized to 558 acres from 1255 acres.
(viii)	All the conditions prescribed in the permission granted by National Mission for Clean Ganga (NMCG), Ministry of Water Resources, River Development & Ganga Rejuvenation vide their letters dated 8.8.2018 and 16.11.2018 for withdrawal of 36 MCM of water from River Ganga during June to December, shall be complied with.	Noted and will be complied.
Additional Conditions (EC Amendment)		
(i)	The area of 7.7 acres (originally proposed 558 acres & Notified SEZ land: 550.23 acres) shall be developed with greenbelt. Demarcation of this land with co-ordinates and progress of greenbelt is to be submitted in the compliance report.	Noted and agreed. Green belt development / plantation and landscaping started in the available spaces along with project construction and efforts will be made to develop more greenery in & around the plant with survival rate of more than 80%.
(ii)	In para 5 of amended EC dated 03.09.2019, the period of '6 months' be read as '07 months'.	Noted.

ADANI POWER (JHARKHAND) LTD.

2*800 MW Godda Thermal Power Project

Village: Motia, Dist: Godda, Jharkhand

ENVIRONMENTAL MONITORING REPORT
PERIOD: April'22 – June'22

Go Green Mechanisms Pvt. Ltd.

Head Office & Lab: Dayal Estate, National Highway No. 8, Opp. APMC Market Gate – 1, Jetalpur, Ahmedabad – 382426

Contact: 7069072008/10

Email: lab@gogreenmechanisms.com

REPORT TITLE

COMPANY NAME:	**Adani Power (Jharkhand) Ltd.**
SITE LOCATION:	2*800 MW Godda Thermal Power Plant Village: Motia, Dist: Godda, Jharkhand
MONITORING PERIOD:	April'22 to June'22
REPORT DATE:	19.07.2022
ORIGINATED BY:	Environmental Monitoring and Analytical Team Go Green Mechanisms Pvt. Ltd.
REVIEWED BY:	Amit Badlani Director, Go Green Mechanisms Pvt. Ltd.
PREPARED BY:	Go Green Mechanisms Pvt. Ltd (GGMPL) Dayal Estate, Opp AMPC Market Gate No.1, Jetalpur-382426 Ahmedabad

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SECTION 1: FOREWORD

The protection of environment plays a crucial role in maintain 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 (Jharkhand) 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 fulfil statutory requirement and to be in tune with Environmental Preservation and sustainable development Adani Power (Jharkhand) Ltd., has retained M/S. Go Green Mechanisms Pvt. Ltd. As Environment Consultants and for various Environmental issues related to their Power Plant.

Environmental Quality Monitoring Report for the Month of Apr'22 to Jun'22 has been collected by Go Green Mechanisms Pvt. Ltd.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

We are thankful to Adani Power (Jharkhand) Ltd. for the opportunity provided to be associated in this endeavour.

SECTION 2: LIST OF EQUIPMENTS

The list of Equipments used in the project is delineated in the following table.

Sr. No.	Name of Equipments	Make/Model
1	Respirable Dust Sampler	Ecotech Instruments / AAS 217BL
2	$PM_{2.5}$ Sampler	Ecotech Instruments & Eonair Technologies/AAS 127 & AQS 235
3	Gaseous Attachment with RDS	Ecotech Instruments / AAS 217BL
4	Sound Level Meter	Hemsun / HDB 2202
5	Weather Monitoring Station	Ambient Weather Station
6	Weighing Balance	Shimadzu /AUW220D
7	UV Visible Spectrophotometer	Systronics
8	Hot Air Oven	Patel Scientific Instruments
9	Filtration Assembly	Labline
10	Water Analysis Kit	Systronics
11	Bacteriological Incubator	Labline
12	Centi-micro Balance	Shimadzu /ATX224
13	Dissolved Oxygen Test Kit	Lutron
14	Autoclave	Patel Scientific Instruments
15	Laminar Air Flow	Labline
16	Muffle Furnace	Patel Scientific Instruments
17	Flame Photometer	Systronics /128
18	Digital colony counter	Labline
19	Microscope	Patel Scientific Instruments
20	Orbital Shaker	Labline
21	Centrifuge	Bio Lab
22	Simple Distillation Assembly	Labline
23	ICP-OES/AES	Thermo Fisher Scientific /iCAP 7400 SERIES
24	AAS	Thermo Fisher Scientific / AA 303
25	Ion Chromatography	Metrohm Herisau / 1.925.0020

SECTION 3: LIST OF PROJECT PERSONNEL

Sr. No.	Name	Qualification	Experience (Yrs)	Designation
1.	Amit Badlani	B.E. (Chemical) M.S.(Energy & Environmental Technology) M.S. (Pollution Control)	17 Yrs	Managing Director
2.	R.K.Pandey	B.Sc. Biology	16 Yrs	Project In-charge
3.	Payal Patel	M Sc. (Env. Sci.)	06 Yrs	Lab Manager
4.	Yash Goswami	Dip. Env. Engineer	11 Yrs	Field Operation - Manger
5.	Tantan Kumar	M Sc. (Env. Mgmt)	04 Yrs	Sr. Chemist
6.	Pooja Parekh	B.Sc. (Microbiology) & DMLT	01 Yr 08 Month	Lab Chemist
7.	Chandan Kumar	B.Sc. Chemistry	03 Yrs	Field Assistant

For Go Green Mechanisms Pvt. Ltd.

Amit Badlani
Managing Director

SECTION 4: EXECUTIVE SUMMARY

Adani Power (Jharkhand) Limited has undertaken the task of preparing EMP report for its 1600 (2x800) MW Godda Thermal Power Plant & Residential Township which is within the premises of TPP.

M/s. Go Green Mechanisms Private Limited, got the opportunity to prepare the Environmental monitoring Data on the basis of actual field monitoring with respect to Group I Parameters I.e. Air, Water, Soil, Noise & Meteorological on behalf of HTG Engineering Pvt. Ltd.

A Meteorological station was set up on the terrace of "Hostel Block" & Micrometeorological parameters like Ambient Temperature, Relative Humidity, Wind direction, Wind Speed, Rain fall & Barometric Pressure etc. were recorded on hourly basis during the study period.

On the basis of wind direction pattern, the three locations of AAQM were selected. The concentration of gaseous pollutants, $PM_{2.5}$ were sampled and analysed for compliance to GSR 826(E) vide Notification Dated 16/11/2009.

Four numbers of Ground water samples, two numbers of Effluent water samples, one number of Surface water sample were collected to understand the overall water quality of the project area. The water parameters were sampled and analysed to check for compliance to the specifications of (IS 10500:2012 & I 2296:1982 Inland surface water Class C).

The noise level was monitored at 10 locations on Day & Night time basis, monthly as per IS 9989: RA 2001.

SECTION 5: CONCEPTS & METHODOLOGY

5.1 METHODOLOGY

In the present study the following are the standard methods used for collection, analysis & interpretation of data:

AAQM Sampling & analysis: "Indian Standards (IS 5182)", "Guidelines for the measurement of Ambient Air Pollutants, Vol-I, CPCB" & "USEPA" methods were used for Ambient Air sampling and analysis to study the present pollution load around the Proposed Project location.

Parameters of AAQM	Standard Methods	Analytical Instruments
PM_{10}	IS 5182 (P-23): RL 2012	Weighing Balance
$PM_{2.5}$	GGMPL/SOP/AA/60	Weighing Balance
Oxides of Nitrogen(NOx)	IS 5182 (P-6):2006	Spectrophotometer
Oxides of Sulphur(SO_2)	IS 5182 (P-2):2009	Spectrophotometer
Mercury	Method IO 3.4:1999	ICP-OES (Hydride Generator)

Water Sampling & analysis: Similarly "Indian Standards (IS 3025)", "USEPA" and "APHA 23rd Edition were used for water sample collection and analysis.

Parameters of Water Samples	Standard Methods	Analytical Instruments
Taste	IS 3025 (Pt 08): RA 2006	-
Turbidity	APHA 23rd Edn 2017 2130 B	Turbidity Meter
Total Dissolve Solid	APHA 23rd Edn 2017 2540 C	Hot air Oven
Boron(B)	APHA 23rd Edn 2017 3120 B	ICP-OES
Calcium(Ca)	APHA 23rd Edn 2017 3500 Ca B	-
Chloride(Cl)	IS 3025 (Pt 32): RA 2007	-
Fluoride(F)	APHA 23rd Edn 2017 4500 F D	Spectrophotometer
Residual Chlorine	APHA 23rd Edn 2017 4500 Cl B	Chlorine kit
Nitrate (NO_3)	IS 3025 (Pt 34): RA 2009	Spectrophotometer
Phenolic Compounds	IS 3025 (Pt 43): RA 2003	Spectrophotometer
Sulphate (SO_4)	APHA 23rd Edn 2017 4500 SO_4 E	Spectrophotometer
Total hardness ($CaCO_3$)	APHA 23rd Edn 2017 2340 C	-
Cyanide (CN)	GGMPL/SOP/W/43: 2020	Ion Chromatography
Selenium (Se)	APHA 23rd Edn 2017 3120 B	ICP-OES
pH	IS 3025 (Pt 11): RA 2006	pH Meter
Colour	IS 3025 (Pt 04): RA 2002	-
Odour	IS 3025 (Pt 05): RA 2006	-
Alkalinity	APHA 23rd Edn 2017 2320 B	-
Temperature	APHA 23rd Edn 2017 2550 B	Thermometer
Magnesium (Mg)	APHA 23rd Edn 2017 3500 Mg B	ICP-OES
Copper (Cu)	APHA 23rd Edn 2017 3120 B	ICP-OES
Iron (Fe)	APHA 23rd Edn 2017 3120 Fe B	ICP-OES

Manganese (Mn)	APHA 23rd Edn 2017 3120 B	ICP-OES
Mercury (Hg)	APHA 23rd Edn 2017 3112 B	ICP-OES (Hydride Generator)
Lead (Pb)	APHA 23rd Edn 2017 3120 B	ICP-OES
Arsenic (As)	APHA 23rd Edn 2017 3120 B	ICP-OES (Hydride Generator)
Cadmium (Cd)	APHA 23rd Edn 2017 3120 B	ICP-OES
Zinc (Zn)	APHA 23rd Edn 2017 3120B	ICP-OES
Hexavalent Chromium	APHA 23rd Edn 2017 3500 Cr B	Spectrophotometer
Detergent	Annex K of IS 13428	Gas Stripping apparatus/ Spectrophotometer
Aluminum	IS 3025 (Pt 55): RA 2009	ICP-OES
E. Coli	IS 1622-1981: RA 2009	Bacteriological incubater/ Autoclave/ Laminar flow
Total Coliform	IS 1622: RA 2009	Bacteriological incubater/ Autoclave/ Laminar flow

Noise Level Monitoring: "Protocol for Ambient Level Noise Monitoring, IS 9989: RA 2001" was followed to monitor the Ambient Noise level surrounding the Project Site.

Parameters	Standard Methods	Analytical Instruments
Leq	IS 9989: RA 2001	Noise Level Meter

Weather Monitoring: "EPA-454/R-99-005, February 2000" was followed for micro-meteorological data collection result interpretation.

Parameters	Standard Methods	Analytical Instruments	Make/Model
Air Temperature	GGMPL/SOP/MP/01:2020	Digital sensor	Ambient Weather Station
Relative Humidity	GGMPL/SOP/MP/01:2020	Digital Sensor(Hygrometer)	
Wind Speed	GGMPL/SOP/MP/01:2020	3 Cup anemometer	
Wind Direction	GGMPL/SOP/MP/01:2020	Hall Effect (Wind Vane)	
Rain Fall	GGMPL/SOP/MP/01:2020	Tipping Bucket	

A brief account of the methodologies and matrices followed in the present study is given under different headings. All the methods were structured for the identification, collection and organization of environmental impacts data. The information, thus gathered, had been analyzed and presented in the form of a number of visual formats for easy interpretation and Marision making.

SECTION 6: PLAN FOR SAMPLING LOCATIONS

Site selection criteria play an important role in the initiation of "baseline data generation" as it provides an outlook on the type of environmental compliance and management to be adopted by the project proponent. The locations were selected on the basis of "joint site survey", "examination of toposheet of the project area", "secondary micro-meteorological data analysis" and "availability of resources" for ambient air quality monitoring & micro-meteorological monitoring.

A synopsis about the locations is as follows:

AAQM Locations	
Code	**Name of Location**
A1	Nr. Motia Village
A2	Nr. Mali Village
A3	Nr. Nayabad Village
Met Data Station	
Code	**Name of Location**
M1	Hostel Block
Water Samples	
Code	**Name of Location**
G/W-1	Motia Village
G/W-2	Mali Village
G/W-3	Nayabad Village
G/W-4	Patwa Village
E/W-1	STP Outlet plant
E/W-2	STP Outlet township
S/W-1	Ganga river
Noise Monitoring Locations	
Code	**Name of Location**
N1	At Motia Village
N2	At Mali Village
N3	At Nayabad Village
N4	At Patwa Village
N5	Nr. Adani Office
N6	Nr. BTG Area (U/C)
N7	Nr. CT Area (U/C)
N8	Nr. RW Reservoir (U/C)
N9	Nr. STP (In township)
N10	Nr. Temple (In township)

SECTION 7: METEOROLOGICAL DATA

Weather monitoring would help in keeping track of different parameters like temperature, humidity, rainfall, wind direction, wind speed & barometric pressure. Real time meteorological data is used to support a number of programs including public aviation, agricultural activity, disaster management etc.

In the present study we monitored the "ambient temperature, relative humidity, wind speed, wind direction, barometric pressure, rainfall etc.

Note: Environmental Quality Monitoring Report for the Month of June'22 has been collected by Envirotech East Pvt. Limited.

Figure 1: Weather Monitoring Station at Hostel B

ADANI POWER (JHARKHAND) LIMITED

2 X 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand

Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

April':-2022

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg)	Rainfall(mm
	Max	Min	Avg	Max	Min	Avg	Max	Avg		(Average)	Total
01.04.2022	39.6	25.3	30.3	91.0	30.0	72.0	6.5	1.7	E	746.3	0.0
02.04.2022	34.0	27.0	30	86.0	59.0	74.1	4.5	1.2	E	748.2	0.0
03.04.2022	36.6	26.1	29.3	8.0	46.0	75.9	7.1	1.2	ENE	747.4	0.0
04.04.2022	40.3	25.7	32.2	90.0	10.0	53.7	10.5	3.1	SE	746.8	0.0
05.04.2022	39.5	26.0	31.0	88.0	30.0	68.8	6.4	2.0	SE	748.9	0.0
06.04.2022	40.1	25.7	32.1	90.0	15.0	60.0	8.7	2.2	ESE	749.1	0.0
07.04.2022	39.2	25.4	30.2	89.0	28.0	68.7	5.7	1.0	NE	749.2	0.0
08.04.2022	36.4	26.2	30.9	87.0	48.0	69.9	7.7	1.7	NE	747.6	0.0
09.04.2022	36.9	25.5	30.1	89.0	49.0	71.9	5.4	1.2	NE	746.6	0.0
10.04.2022	36.9	25.6	30.3	83.0	50.0	70.1	6.1	1.4	NNE	745.6	0.0
11.04.2022	35.1	24.4	29.1	82.0	53.0	73.5	5.9	1.2	NNE	745.8	0.0
12.04.2022	37.9	26.0	30.5	84.0	46.0	71.3	9.9	1.5	NE	745.8	0.0
13.04.2022	40.0	27.2	30.4	88.0	37.0	74.7	6.9	1.3	N	744.5	0.0
14.04.2022	39.9	25.8	33.1	88.0	26.0	58.7	6.0	1.3	WNW	742.9	0.0
15.04.2022	41.0	27.1	34.2	74.0	16.0	33.6	9.2	2.7	SE	742.9	0.0
16.04.2022	41.0	27.1	34.2	64.0	15.0	33.5	4.8	1.7	SE	743.2	0.0
17.04.2022	41.5	27.6	33	70.0	14.0	48.2	11.8	2.7	SE	744.2	0.0
18.04.2022	39.6	26.3	32.6	82.0	27.0	58.2	4.4	1.3	NNE	745.6	0.0
19.04.2022	35.5	27.7	31.0	84.0	53.0	70.5	7.2	1.2	E	746.8	0.0
20.04.2022	34.2	23.8	28.7	83.0	40.0	61.4	12.6	2.1	NE	747.0	0.0
21.04.2022	33.6	24.3	28.0	80.0	57.0	73.4	4.3	1.0	E	747.1	0.0
22.04.2022	36.8	26.5	31.7	84.0	46.0	66.3	7.2	1.7	ENE	746.6	0.0
23.04.2022	39.9	26.2	32.7	77.0	20.0	42.1	7.9	2.3	SE	745.8	0.0
24.04.2022	40.6	27.8	34.4	43.0	14.0	25.2	12.8	3.6	SSE	744.6	0.0
25.04.2022	40.8	28.7	34.5	35.0	14.0	23.8	10.5	2.4	SE	744.7	0.0
26.04.2022	41.8	25.4	34.7	46.0	15.0	28.8	7.9	1.6	SE	744.8	0.0
27.04.2022	41.2	25.3	32.9	86.0	17.0	57.1	5.3	1.1	ESE	745.2	0.0
28.04.2022	37.9	27.0	32.4	88.0	52.0	69.4	4.3	1.0	NE	746.0	0.0
29.04.2022	37.3	27.6	31.3	87.0	39.0	59.5	6.3	1.8	NE	744.8	0.0
30.04.2022	34.3	25.7	29.4	70.0	45.0	58.1	11.5	2.8	NE	745.3	0.0

ADANI POWER (JHARKHAND) LIMITED

2 X 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand

Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

May':-2022

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg)	Rainfall(mm
	Max	Min	Avg	Max	Min	Avg	Max	Avg		(Average)	Total
01.05.2022	35.9	20.2	28.6	91.0	48.0	65.4	13.8	2.1	NE	744.7	12.4
02.05.2022	34.3	23.6	28.9	82.0	47.0	63.6	4.8	1.3	ENE	745.1	0.0
03.05.2022	30.0	20.2	25.8	95.0	59.0	75.0	7.3	1.3	ENE	746.8	31.3
04.05.2022	32.2	23.7	27.7	86.0	58.0	71.7	3.1	0.8	NNE	747.6	0.0
05.05.2022	33.4	25.1	27.4	84.0	58.0	75.0	7.5	1.1	NE	746.9	0.8
06.05.2022	35.6	23.7	27.9	86.0	44.0	70.4	4.9	1.0	ENE	746.4	0.0
07.05.2022	34.6	24.6	28.0	86.0	45.0	71.3	3.2	0.9	ESE	746.6	0.0
08.05.2022	34.4	22.1	29.4	89.0	54.0	68.0	5.8	1.6	ESE	745.9	1.5
09.05.2022	34.9	25.9	29.6	82.0	50.0	69.2	7.7	2.4	ESE	745.4	0.0
10.05.2022	34.7	25.4	29.1	85.0	56.0	73.0	9.4	1.5	ESE	746.0	0.0
11.05.2022	36.0	26.2	29.2	88.0	53.0	75.0	7.3	2.3	ESE	744.6	0.0
12.05.2022	36.1	26.7	30.6	88.0	53.0	70.8	8.0	2.0	SSE	743.3	0.0
13.05.2022	37.0	27.1	30.1	85.0	54.0	70.5	6.6	2.0	ESE	741.2	0.0
14.05.2022	37.5	26.0	32.0	84.0	54.0	68.8	7.3	1.9	ESE	741.3	0.0
15.05.2022	38.8	27.3	32.3	76.0	53.0	64.2	7.1	2.4	SE	742.7	0.0
16.05.2022	39.0	27.4	32.9	72.0	46.0	61.9	6.8	2.2	ESE	742.4	0.0
17.05.2022	38.0	27.2	31.5	85.0	53.0	70.2	9.1	1.8	E	742.8	0.0
18.05.2022	37.9	22.1	30.4	94.0	52.0	66.9	12	1.8	E	743.4	15.0
19.05.2022	37.0	25.2	28.4	89.0	55.0	75.7	36.7	2.1	ESE	743.8	0.3
20.05.2022	33.2	24.4	29.2	86.0	66.0	77.6	4.4	4.6	NE	742.3	10.1
21.05.2022	33.1	24.9	28.7	89.0	59.0	72.7	5.2	1.4	E	740.7	0.0
22.05.2022	23.2	21.7	22.7	89.0	85.0	86.1	3.8	2.9	SSE	740.8	11.2
23.05.2022	34.8	25.0	28.6	83.0	55.0	68.6	11.6	1.8	ESE	741.9	0.0
24.05.2022	31.5	24.9	27.3	87.0	64.0	76.6	6.7	1.0	NNE	744.6	0.0
25.05.2022	33.8	23.8	26.7	89.0	56.0	78.2	11.0	1.0	E	745.2	22.4
26.05.2022	36.0	23.5	28.7	88.0	40.0	67.3	7.8	1.2	SE	744.1	0.0
27.05.2022	36.4	23.5	28.6	86.0	42.0	69.0	3.0	0.9	SE	742.5	0.0
28.05.2022	36.1	26.0	29.3	82.0	48.0	69.7	10.1	1.8	SE	742.1	0.0
29.05.2022	34.4	25.3	27.5	86.0	62.0	82.2	4.3	1.0	ESE	742.5	5.3
30.05.2022	35.1	25.5	30.7	87.0	58.0	72.7	3.4	1.1	ESE	742.6	0.0

ADANI POWER (JHARKHAND) LIMITED

2 X 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand

Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

June':-**2022**

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg)	Rainfall(mm
	Max	Min	Avg	Max	Min	Avg	Max	Avg		(Average)	Total
01.06.2022	35.5	26.6	31.3	86.0	59.0	70.2	5.6	1.1	ESE	742.4	0.0
02.06.2022	36.6	26.1	29.2	81.0	55.0	71.2	6.1	1.6	ESE	742.3	0.0
03.06.2022	38.3	26.1	32.3	85.0	53.0	68.3	7.7	1.5	ESE	741.7	0.0
04.06.2022	36.3	28.9	31.4	86.0	59.0	76.7	7.1	1.9	SE	741.9	0.0
05.06.2022	38.8	28.9	32.2	79.0	45.0	63.1	6.6	1.6	ESE	742.5	0.0
06.06.2022	35.7	27.7	31	85.0	58.0	76.3	8.2	2.1	SSE	742.1	0.0
07.06.2022	35.6	26.8	31.6	86.0	59.0	70.8	5.6	1.0	ENE	741.9	0.0
08.06.2022	36.5	26.7	30.7	78.0	58.0	68.5	10.7	1.9	ESE	741.4	0.0
09.06.2022	34.6	26.4	30.4	83.0	63.0	74.2	14.8	1.5	ENE	741.5	0.0
10.06.2022	37.0	26.6	29.5	87.0	52.0	73.2	9.2	1.5	ESE	741.5	0.0
11.06.2022	38.4	28.7	33.1	81.0	50.0	67.0	8.2	2.0	SSE	741.3	0.0
12.06.2022	39.5	28.8	32.0	86.0	43.0	74.4	19.4	1.8	SE	742.0	0.0
13.06.2022	41.1	28.3	33.3	86.0	45.0	65.2	20.4	1.9	ENE	742.7	0.0
14.06.2022	40.4	28.3	31.4	83.0	41.0	68.3	12.2	2.7	SSE	742.2	0.0
15.06.2022	37.8	28.9	32.7	74.0	46.0	60.5	13.8	3.9	SE	742.3	0.0
16.06.2022	40.4	33.0	36.1	76.0	60.0	70.8	7.7	3.0	SSE	742.9	0.2
17.06.2022	32.9	25.1	27.8	90.0	67.0	82.0	10.2	2.6	SSE	743.4	22.4
18.06.2022	34.0	24.1	27.8	93.0	61.0	79.4	13.8	2.4	SSE	743.6	12.7
19.06.2022	35.9	25.4	28.9	91.0	54.0	78.6	10.7	1.6	SSE	743.2	5.8
20.06.2022	33.3	25.1	27.3	90.0	62.0	83.0	9.7	1.2	E	742.2	35.2
21.06.2022	34.8	24.4	28.9	90.0	57.0	78.3	8.7	1.0	ENE	742.0	8.9
22.06.2022	33.6	26.0	29.1	91.0	62.0	79.5	7.1	0.9	ENE	743.9	2.5
23.06.2022	35.8	26.4	30.1	89.0	57.0	75.5	7.1	1.5	SE	744.6	0.0
24.06.2022	36.2	26.5	30.9	89.0	55.0	72.5	7.1	1.6	ESE	743.5	0.0
25.06.2022	35.5	28.0	31.0	83.0	55.0	70.9	10.7	1.6	ESE	742.4	0.0
26.06.2022	35.6	26.9	30.2	85.0	54.0	73.6	8.7	1.9	ESE	744.3	0.0
27.06.2022	35.8	27.3	29.8	84.0	53.0	75.3	7.1	2.1	SSE	745.2	0.0
28.06.2022	33.4	27.7	29.9	88.0	65.0	78.2	9.7	2.1	SSE	743.2	10.9
29.06.2022	32.3	25.2	28.2	91.0	67.0	82.8	10.2	1.5	E	742.9	1.8
30.06.2022	35.5	25.0	30.4	93.0	58.0	75.4	8.2	0.9	NNE	742.0	0.0

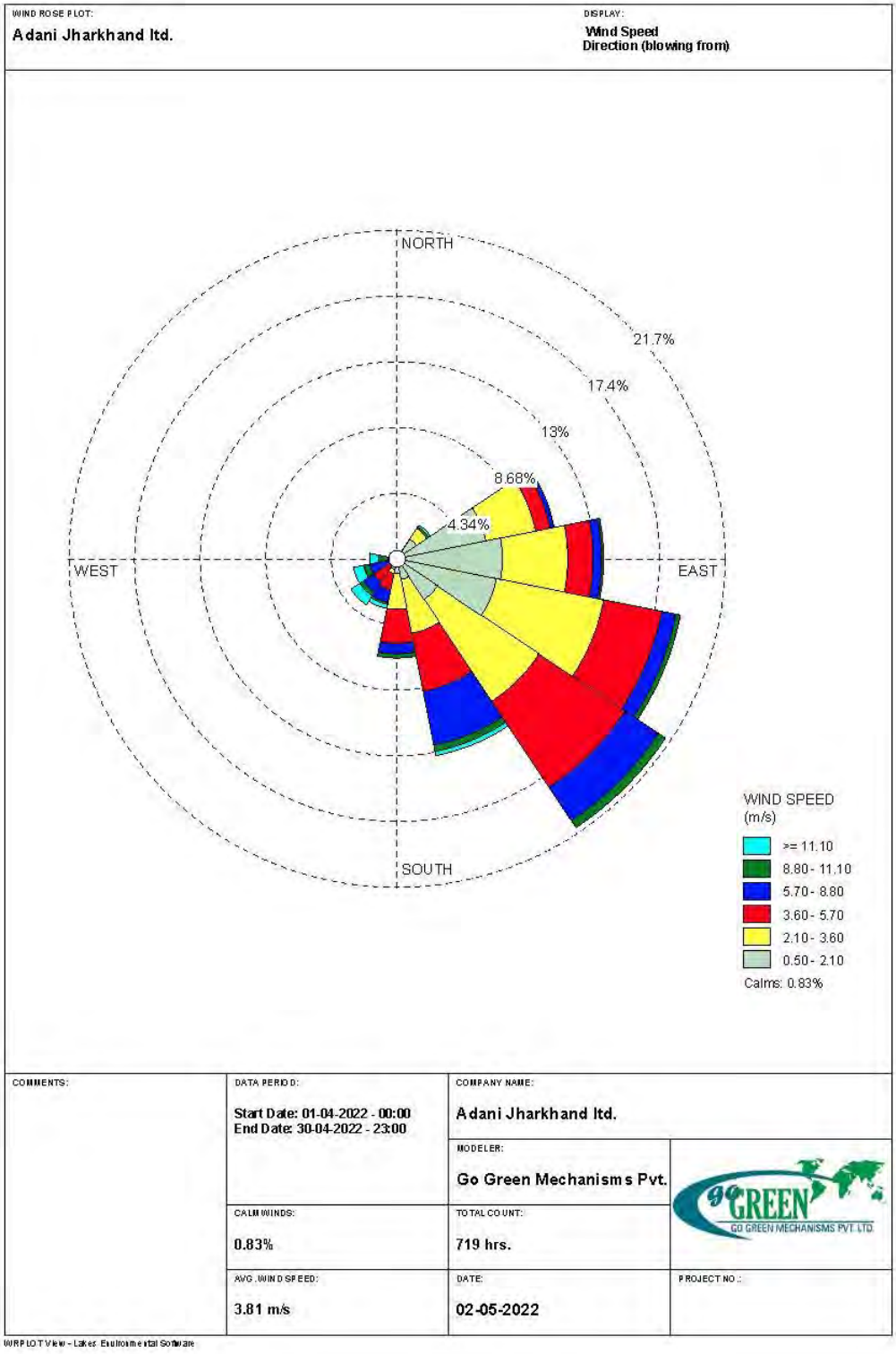


Figure 2: Windrose diagram for the month of Apr'22

It is observed from the windrose diagram for the month of Apr'22 the predominant wind direction is SE.

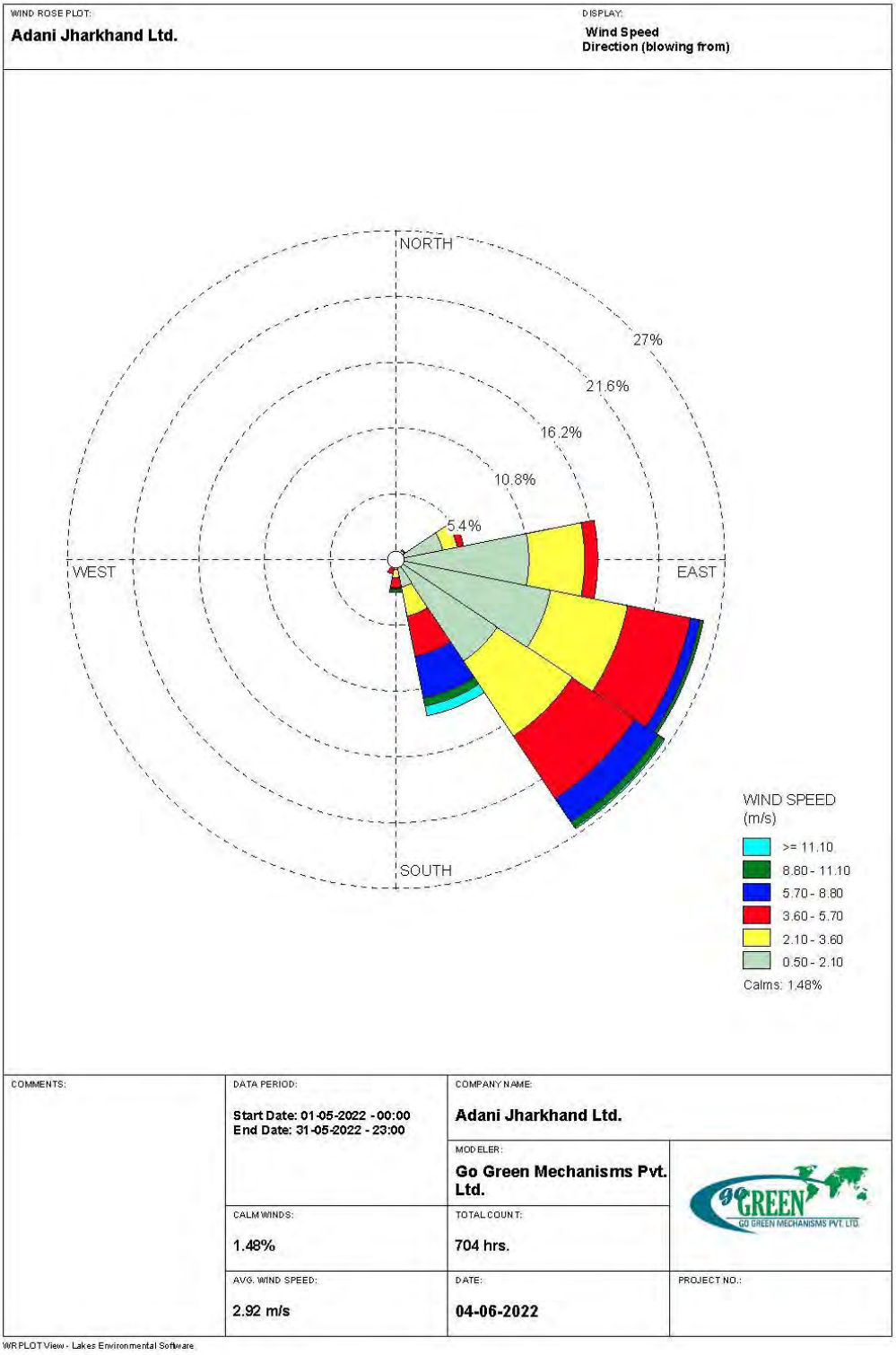


Figure 3: Windrose diagram for the month of May'22

It is observed from the Windrose diagram for the month of May'22 the predominant wind direction is SE.

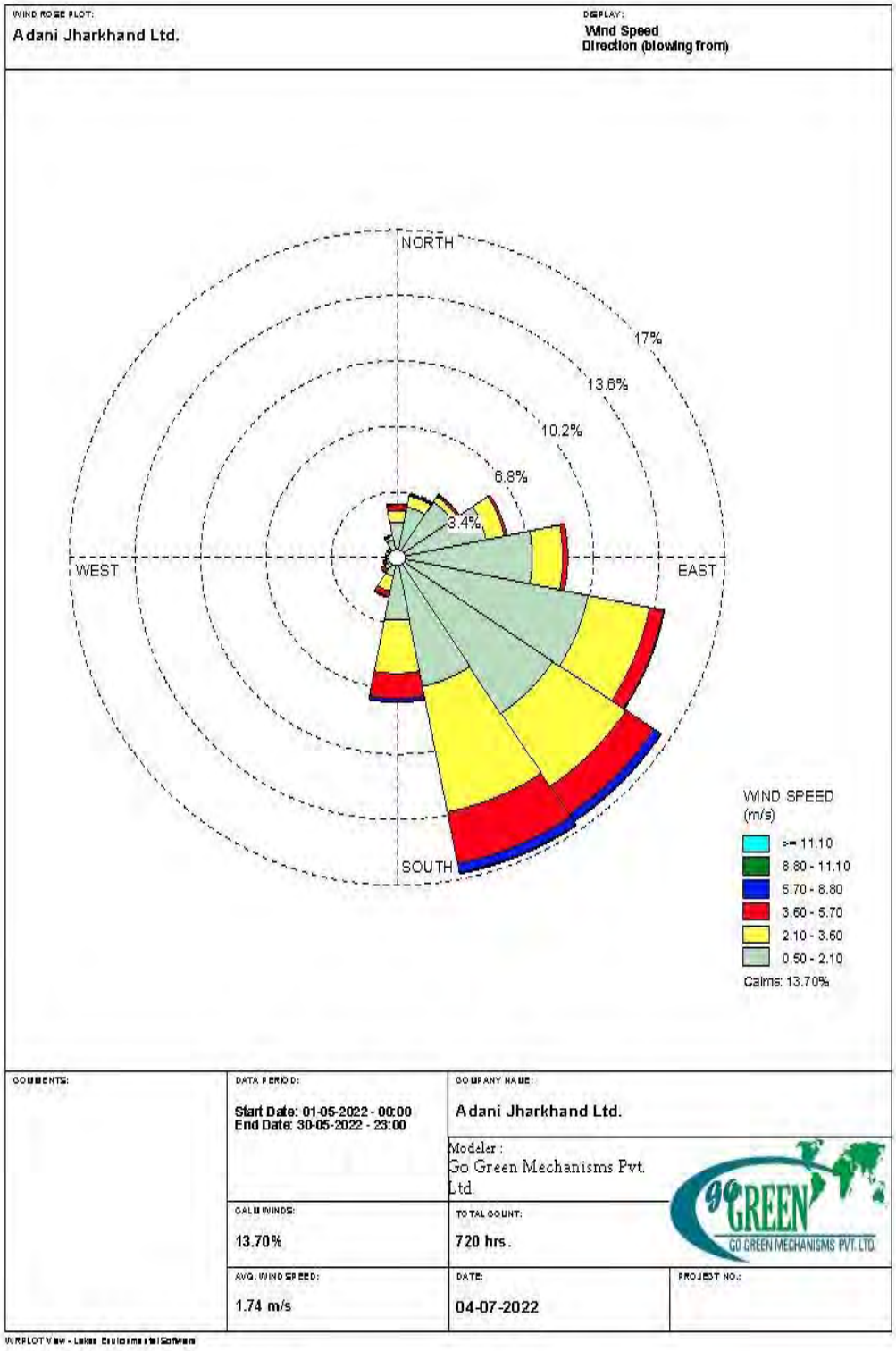


Figure 4: Windrose diagram for the month of Jun'22

It is observed from the windrose diagram for the month of Jun'22 the predominant wind direction is SSE.

SECTION 8: AMBIENT AIR MONITORING REPORT

8.1 CONCEPT & SCOPE

The Ambient Air monitoring encompasses the results and statistical evaluation of the data monitored at three different locations.

Different parameters like PM_{10}, $PM_{2.5}$, Oxides of Sulphur, Oxides of Nitrogen and Mercury are monitored for representing the ambient air quality within the study area.

8.2 FREQUENCY OF SAMPLING

The frequency of the sampling for AAQM was as follows:

PARAMETERS	FREQUENCY OF EACH LOCATION
PM10, PM2.5, Oxides of Sulphur, Oxides of Nitrogen	Twice in a week
Mercury	Once in a month

8.3 SAMPLING DURATION AS PER NAAQMs 2009

Sr. No.	Parameters	Sampling Duration (Hr.)
1	Particulate Matter (PM_{10})	24
2	Particulate Matter ($PM_{2.5}$)	24
3	Oxides of Sulphur (SO_2)	24
4	Oxides of Nitrogen (NO_x)	24
5	Mercury	-

8.4 AAQM METHODOLOGY

PARAMETERS	METHODOLOGY/PRINCIPLE
Particulate Matter (PM_{10})	Air is drawn through a size-selective inlet and through a 20.3 X 25.4 cm (8 X 10 in) filter at a flow rate, which is typically 1132 L/min. Particles with aerodynamic diameter less than the cut-point of the inlet are collected, by the filter. The mass of these particles is determined by the difference in filter weights prior to and after sampling. The concentration of PM_{10} in the designated size range is calculated by dividing the weight gain of the filter by the volume of air sampled.
Particulate Matter ($PM_{2.5}$)	An electrically powered air sampler draws ambient air at a constant volumetric flow rate (16.7 lpm) maintained by a mass flow / volumetric flow controller coupled to a microprocessor into specially designed inertial particle-size separator (i.e. cyclones or impactors) where the suspended particulate matter in the $PM_{2.5}$ size ranges is separated for collection on a 47 mm polytetrafluoroethylene (PTFE) filter over a specified sampling period. Each filter is weighed before and after sample collection to determine the net gain due to the particulate matter. The mass concentration in the ambient air is computed as the total mass of collected particles in the $PM_{2.5}$ size ranges divided by the actual volume of air sampled, and is expressed in $\mu g/m^3$. The microprocessor reads averages and stores five-minute averages of ambient temperature, ambient pressure, filter temperature and volumetric flow rate.
Sulphur Dioxide (SO_2)	Sulphur dioxide from air is absorbed in a solution of potassium tetrachloromercurate (TCM). The impingers setup for the absorbance of Sulphur Dioxide from air is shown in Figure 15. A dichlorosulphitomercurate complex, which resists oxidation by the oxygen in the air, is formed. Once formed, this complex is stable to strong oxidants such as ozone and oxides of nitrogen and therefore, the absorber solution may be stored for some time prior to analysis. The complex is made to react with para-rosaniline and formaldehyde to form the intensely coloured pararosaniline methylsulphonic acid. The absorbance of the solution is measured by means of a suitable spectrophotometer.
Nitrogen Dioxide	Ambient nitrogen dioxide (NO_2) is collected by bubbling air through a solution of sodium hydroxide and sodium arsenite. The concentration of nitrite ion (NO_2) produced during sampling is determined colorimetrically by reacting the nitrite ion with phosphoric acid, sulfanilamide, and N-(1-naphthyl)-ethylenediamine dihydrochloride (NEDA) and measuring the absorbance of the highly coloured azo-dyeat 540 nm.

Figure 5: Ambient air Motoring Nr. Mali Village

Figure 6: Ambient air Monitoring Nr. Motia Village

8.5 ANALYTICAL RESULTS

Results & statistical calculations for Location- A1:

Name of Location (A1)		Nr. Motia Village			
Sr. No.	**Date of Sampling**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NOx**
Unit		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
GSR 826 (E)		100	60	80	80
1.	01.04.2022	72.3	32.9	11.6	15.3
2.	04.04.2022	75.3	34.6	12.4	16.2
3.	07.04.2022	68.4	30.4	9.9	12.1
4.	11.04.2022	71.5	31.7	10.3	13.9
5.	14.04.2022	70.2	30.8	11.0	15.6
6.	18.04.2022	80.4	38.7	10.2	14.1
7.	21.04.2022	61.2	26.7	8.6	12.2
8.	25.04.2022	73.4	32.5	10.3	13.4
9.	28.04.2022	76.4	35.4	9.4	12.4
10.	02.05.2022	42.0	12.9	6.8	11.8
11.	05.05.2022	59.1	23.7	10.1	16.7
12.	09.05.2022	72.4	33.7	9.5	13.8
13.	12.05.2022	73.0	34.6	12.1	14.8
14.	16.05.2022	69.9	28.3	10.4	17.6
15.	19.05.2022	54.9	22.9	9.8	15.3
16.	24.05.2022	75.6	35.0	11.1	18.2
17.	26.05.2022	67.4	27.5	10.7	15.0
18.	30.05.2022	74.2	31.6	12.0	16.5
19.	02.06.2022	69.4	30.5	7.9	16.8
20.	06.06.2022	55.5	28.5	10.1	11.5
21.	09.06.2022	57.5	31.5	11.2	14.7
22.	13.06.2022	66.8	33.5	13.5	15.8
23.	16.06.2022	63.8	29.8	9.4	12.3
24.	20.06.2022	55.8	31.4	12.1	14.8
25.	23.06.2022	71.5	32.5	13.8	16.1
26.	27.06.2022	65.8	27.4	12.2	17.3

RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	42.0	12.9	6.8	11.5
Max Concentration	80.4	38.7	13.8	18.2
Average	67.1	30.3	10.6	14.8

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

Results & statistical calculations for Location- A2:

Name of Location (A2)		Nr. Mali Village			
Sr. No.	**Date of Sampling**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NOx**
Unit		µg/m³	µg/m³	µg/m³	µg/m³
GSR 826 (E)		100	60	80	80
1.	01.04.2022	68.0	31.2	10.6	14.9
2.	04.04.2022	71.2	34.2	12.0	15.4
3.	07.04.2022	70.6	29.2	11.8	16.5
4.	13.01.2022	73.6	33.3	10.0	13.9
5.	14.04.2022	69.4	28.7	9.5	12.1
6.	18.04.2022	74.2	35.4	10.3	13.6
7.	21.04.2022	65.6	27.1	8.9	12.6
8.	25.04.2022	81.0	40.0	9.2	13.1
9.	28.04.2022	75.3	36.7	10.6	15.0
10.	02.05.2022	44.5	15.4	8.1	12.5
11.	05.05.2022	62.5	25.4	9.6	13.9
12.	09.05.2022	75.4	32.4	11.0	17.0
13.	12.05.2022	70.9	31.6	9.7	16.3
14.	16.05.2022	76.3	32.9	12.8	19.6
15.	19.05.2022	58.6	22.0	9.4	14.5
16.	24.05.2022	73.3	33.3	11.3	16.4
17.	26.05.2022	68.2	28.7	10.3	14.4
18.	30.05.2022	70.7	32.1	12.3	16.0
19.	02.06.2022	55.2	24.3	9.7	12.8
20.	06.06.2022	56.8	27.6	9.1	15.0
21.	09.06.2022	63.1	28.4	10.6	16.7
22.	13.06.2022	65.7	31.3	8.6	13.2
23.	16.06.2022	69.5	28.6	11.3	15.8
24.	20.06.2022	72.6	30.2	12.5	14.2
25.	23.06.2022	70.6	28.7	8.4	11.7
26.	27.06.2022	67.7	30.8	10.3	16.2

RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	44.5	15.4	8.1	11.7
Max Concentration	81.0	40.0	12.8	19.6
Average	68.1	30.0	10.3	14.7

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

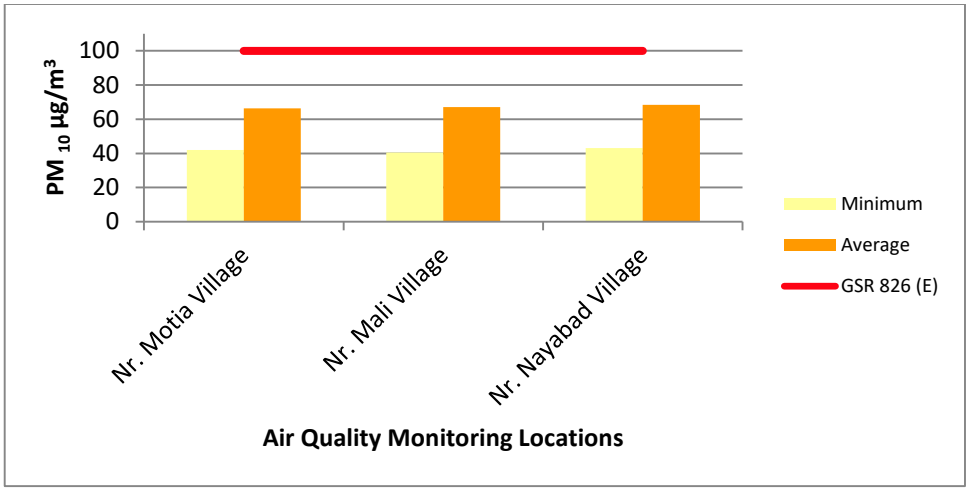
Results & statistical calculations for Location- A3:

Name of Location (A3)		Nr. Nayabad Village			
Sr. No.	**Date of Sampling**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NOx**
Unit		µg/m³	µg/m³	µg/m³	µg/m³
GSR 826 (E)		100	60	80	80
1.	01.04.2022	75.1	36.2	11.5	13.6
2.	04.04.2022	81.2	40.4	10.2	13.3
3.	07.04.2022	70.5	33.7	13.3	17.1
4.	13.01.2022	74.1	35.8	14.0	18.3
5.	14.04.2022	76.0	36.7	11.3	14.2
6.	18.04.2022	70.1	32.1	10.7	14.4
7.	21.04.2022	60.9	28.3	9.1	12.9
8.	25.04.2022	76.6	37.1	10.4	13.4
9.	28.04.2022	78.3	38.3	11.2	14.5
10.	02.05.2022	43.1	19.1	8.6	13.3
11.	05.05.2022	64.4	26.6	8.8	15.5
12.	09.05.2022	74.4	34.1	11.8	16.2
13.	12.05.2022	76.4	35.8	13.4	17.8
14.	16.05.2022	72.5	30.4	11.6	18.1
15.	19.05.2022	61.8	24.5	7.8	14.1
16.	24.05.2022	77.0	34.9	12.4	19.7
17.	26.05.2022	66.9	26.2	9.1	14.9
18.	30.05.2022	74.1	34.5	14.1	17.3
19.	02.06.2022	66.8	30.0	10.2	14.4
20.	06.06.2022	65.9	28.3	9.5	13.5
21.	09.06.2022	74.9	30.0	11.4	16.3
22.	13.06.2022	56.7	34.8	12.6	15.4
23.	16.06.2022	62.8	29.1	14.1	17.6
24.	20.06.2022	65.6	26.7	9.9	15.1
25.	23.06.2022	67.2	28.2	11.6	16.9
26.	27.06.2022	70.3	29.0	14.3	20.2

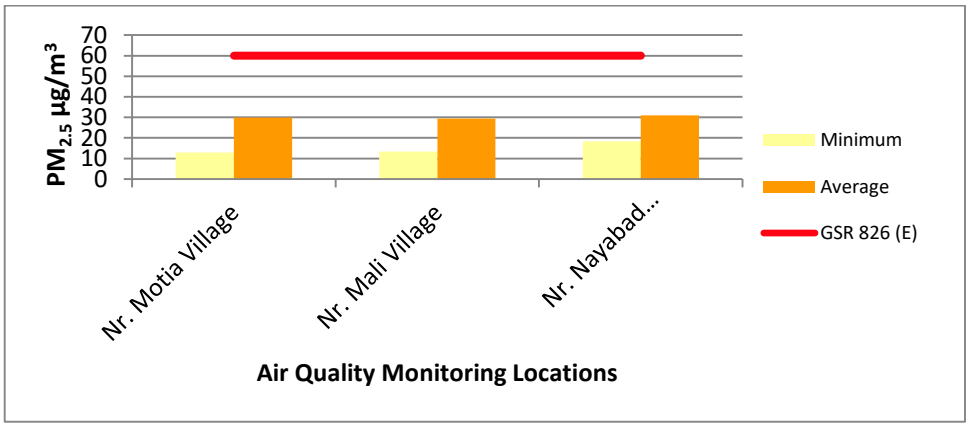
RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	43.1	19.1	7.8	12.9
Max Concentration	81.2	40.4	14.3	20.2
Average	69.4	31.6	11.3	15.7

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

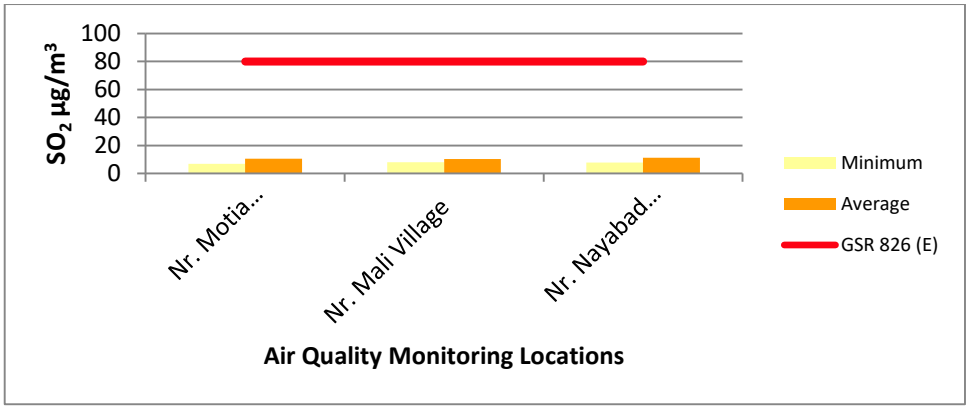
8.6 GRAPHICAL REPRESENTATION OF THE RESULTS



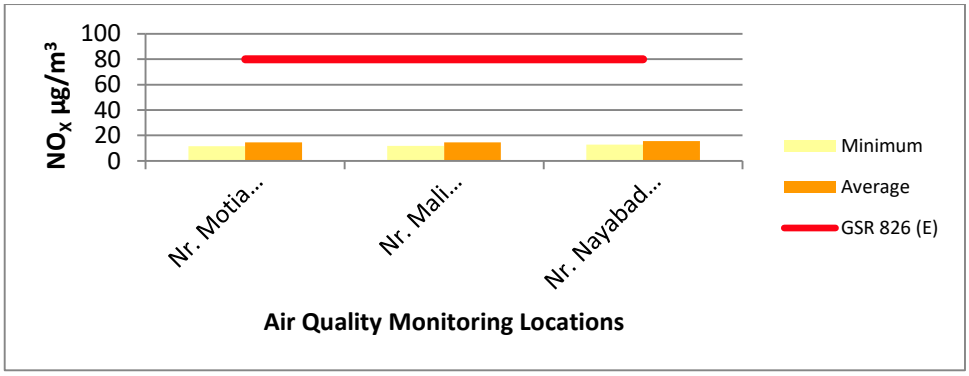
Graph 1: Particulate Matter (PM_{10})



Graph 2: Particulate Matter ($PM_{2.5}$)



Graph 3: Sulphur Dioxide (SO_2)



Graph 4: Oxides of Nitrogen (NO_x)

8.7 EXECUTIVE SUMMARY OF AAQM RESULTS

Particulate Matter (PM_{10})				
Site	**Minimum**	**Maximum**	**Average**	**GSR 826 (E)**
Nr. Motia Village	42.0	80.4	67.1	100
Nr. Mali Village	44.5	81.0	68.1	100
Nr. Nayabad Village	43.1	81.2	69.4	100

Particulate Matter ($PM_{2.5}$)				
Site	**Minimum**	**Maximum**	**Average**	**GSR 826 (E)**
Nr. Motia Village	12.9	38.7	30.3	60
Nr. Mali Village	15.4	40.0	30.0	60
Nr. Nayabad Village	19.1	40.4	31.6	60

Sulphur Dioxide (SO_2)				
Site	**Minimum**	**Maximum**	**Average**	**GSR 826 (E)**
Nr. Motia Village	6.8	13.8	10.6	80
Nr. Mali Village	8.1	12.8	10.3	80
Nr. Nayabad Village	7.8	14.3	11.3	80

Oxides of Nitrogen (NO_x)				
Site	**Minimum**	**Maximum**	**Average**	**GSR 826 (E)**
Nr. Motia Village	11.5	18.2	14.8	80
Nr. Mali Village	11.7	19.6	14.7	80
Nr. Nayabad Village	12.9	20.2	15.7	80

From all the above graphical representation it is clearly interpreted that all the values of PM_{10}, $PM_{2.5}$, SO_2 and NO_X were lower than the prescribed limits for all the stated locations.

8.8 ANALYTICAL RESULTS OF MERCURY

In this study, we also monitored some other critical pollutants like Mercury to assess the existing levels of air pollutants as well as the regional background concentration of the cluster area.
Beside these, some Heavy metal concentration in the ambient air were also monitored in and around the project area. The following tabulated pollutants were monitored once in a month.

Location	Sampling Month	Mercury (Hg)
Unit		µg/m^3
Limits as per GSR 826 Standard		NS
Nr. Motia Village	Apr'22	BQL(QL=1)
	May'22	BQL(QL=1)
	Jun'22	BQL(QL=1)
Nr. Mali Village	Apr'22	BQL(QL=1)
	May'22	BQL(QL=1)
	Jun'22	BQL(QL=1)
Nr. Nayabad Village	Apr'22	BQL(QL=1)
	May'22	BQL(QL=1)
	Jun'22	BQL(QL=1)

Note: NS= Not Specified

Note: Environmental Quality Monitoring Report for the Month of June'22 has been collected by Envirotech East Pvt. Limited.

SECTION 9: WATER ANALYSIS REPORT

9.1 CONCEPT & SCOPE

Water quality of the project area plays an important role on the socio economy of the Project. The higher concentrations of the water pollutants have serious impacts on the environment. Hence, it becomes important to assess the water quality periodically in the project vicinity.

Thus to assess the water quality of the project area, 04 locations were selected for Ground water sampling, 02 locations were selected for Effluent water sampling and 01 location was selected for surface water sampling.

The quality of Ground water samples were compared with respect to IS 3025/APHA specification, the concentration of the target analytes are within the prescribed limits.

Bacterial examination was also carried out to find out the E-Coli & Total Coliform contamination in water sources.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

9.2 METHODOLOGY

PARAMETER	PRINCIPLE OF METHEDOLOGY
PH	Measurement of pH is one of the most important and frequently used test in water chemistry. Practically every phase of water supply and wastewater treatment, e.g., acid-base neutralization, Water softening, precipitation, coagulation, disinfection and corrosion control, is pH dependent. pH is used in alkalinity and carbon dioxide measurements and many other acid-base equilibria. At a given temperature the intensity of the acid or basic character of a solution is indicated by pH or hydrogen ion activity. Alkalinity and acidity are the acid and base neutralizing capacities of a water and usually expressed in mole per liter, needed to change the pH value of a 1-L sample by 1 unit. pH as defined by Sorenson is –log $[H^+]$; it is the "intensity" factor of acidity
Turbidity	The method is based on a comparison of the intensity of light scattered by a standard reference suspension under the same condition. Higher the intensity of scattered light, the higher the turbidity of particular sample. Formazin polymer is used as the primary standard reference suspension. The turbidity of a specify concentration of formalin suspension is defined as 4000 NTU.
Chloride	In a neutral or slightly alkaline solution, potassium chromate can indicate the endpoint of the silver nitrate titration of chloride. Silver chloride is precipitated quantitatively before red silver chromate is formed.
Fluoride	The SPANDS colorimetric method is based on the reaction between fluoride and a zirconium-dye lake. Fluoride reacts with the dye lake, dissociating a portion of it into a colorless complex anion (ZrF_6^{-2}) and the dye. As the amount of fluoride increase, the color produced becomes progressively lighter. The reaction rate between fluoride and zirconium ions is influenced greatly by the acidity of the reaction mixture. If the proportion of acid in the reagent is increased, the reaction can be made almost instantaneous. Under such condition, however, the effect of various ions differs from that in the conventional alizarin methods. The selection of dye for this rapid fluoride method is governed largely by the resulting tolerance to these ions.
Sulphate	Sulphate ion (SO_4^{2-}) is precipitated in an acetic acid medium with barium chloride ($BaCl_2$) so as to form barium sulphate ($BaSO_4$) crystals of uniform size. Light absorbance of the $BaSO_4$ suspension is measured by a photometer and the SO_4^{2-} concentration is determined by comparison of the reading with a standard curve SO_4^{2-}. The absorbance of the barium sulphate formed is measured by a spectrophotometer at 450 nm.
Cd, Cu, As, Pb, Hg, Zn, Mn, Fe, B	The multi-element determination of trace elements by ICP-OES. The basis of the method is the measurement of atomic emission by an optical spectroscopic technique. The prepared samples are nebulized and the aerosols that is produced is transported to the plasma torch where excitation occurs characteristic atomic-line emission spectra are produced by a radio-frequency inductively coupled plasma. The spectra are dispersed by a grating spectrometer and the intensities of the lines are monitored by detectors.
Hexavalent Chromium (As Cr^{+6})	This procedure measures only hexavalent chromium, Cr^{+6}. For total chromium, Determination, acid-digest the sample and follow with a suitable instrumental analysis technique. The hexavalent chromium is determined calorimetrically by reaction with diphenylcarbazide in acid solution. A red-violet colored complex of unknown composition is produced which is measured at 540 nm.
Calcium (As Ca)	When EDTA is added to water containing both calcium and magnesium it combines first with the calcium. Calcium can be determined directly with EDTA, when the pH is made sufficiently high that the magnesium is largely precipitated as the hydroxide and an indicator is used that combines with calcium only. Several indicators give a

	Colour change when all of the calcium has been complexed by the EDTA at a pH of 12 to 13.
Total Hardness (As $CaCO_3$)	This method depends on ability of EDTA or its disodium salt to form stable complexes with calcium and magnesium ions. When the dye Eriochrome black T (EBT) is added to a solution containing calcium and magnesium ions at pH 10.0 a wine red complex is formed. This solution is titrated with standard solution of disodium salt of EDTA, which extracts calcium and magnesium from the dye complex and the dye is changed back to its original blue Colour. Eriochrome black T is used to indicate the end-point for the titration of calcium and magnesium together.
Residual Chloride	Chlorine will liberate free iodine from potassium iodide (KI) solution at pH 8 or less. The liberated iodine is titrated with a standard solution of sodium thiosulfate ($Na_2S_2O_3$) with starch as the indicator. Titrate at pH 3 to 4 because the reaction is not stoichiometric at neutral pH due to partial oxidation of thiosulfate to sulfate.
Total Dissolved Solids	A well-mixed sample is filtered through a standard filter and the filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180°C. The increase in dish weight represents the total dissolved solids.
Nitrate	Two moles of nitrate nitrogen react with one mole of chromotropic acid to form a yellow reaction product having maximum absorbance at 410 nm.
Alkalinity (As $CaCO_3$)	Hydroxyl ions present in a sample as a result of dissociation or hydrolysis of solutes react with addition of standard acid. Alkalinity thus depends on the end point pH used. For method of determining inflection points from titration curves and the rationale for titrating to fixed pH endpoints.

Figure 7: Water Sampling Motia Village, Hand pump

Figure 8: Water Sampling Mali Village, Hand pump

Figure 9: Water Sampling Nayabad Village, Hand pump

Figure 10: Water Sampling Patwa Village Hand pump

Figure 11: Water Sampling at STP Outlet plant

Figure 12: Water Sampling at STP Outlet township

9.3 ANALYTICAL RESULTS

Date of Sampling: 07.04.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.20	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL (QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	325.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	185.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	110.0	200	600
6.	Calcium as Ca	mg/L	42.48	75	200
7.	Chloride	mg/L	51.98	250	1000
8.	Sulphate	mg/L	43.75	200	400
9.	Nitrate	mg/L	3.21	45	No Relaxation
10.	Iron	mg/L	0.29	0.3	No Relaxation
11.	Fluoride	mg/L	BQL (QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL (QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL (QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	19.19	30	100
15.	Residual Chlorine	mg/L	BQL (QL=0.05)	0.2	1
16.	Colour	Hazen	BQL (QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	^{0}C	28.8	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL (QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	9.09	NS	NS
32.	Detergent	mg/L	BQL (QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.04.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.38	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	263.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	164.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	100.0	200	600
6.	Calcium as Ca	mg/L	42.48	75	200
7.	Chloride	mg/L	36.98	250	1000
8.	Sulphate	mg/L	37.61	200	400
9.	Nitrate	mg/L	4.11	45	No Relaxation
10.	Iron	mg/L	0.22	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.09	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	28.9	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	11.06	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.04.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.3	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	312.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	180.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	116.0	200	600
6.	Calcium as Ca	mg/L	40.88	75	200
7.	Chloride	mg/L	44.98	250	1000
8.	Sulphate	mg/L	43.38	200	400
9.	Nitrate	mg/L	6.30	45	No Relaxation
10.	Iron	mg/L	0.27	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.95	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	29.2	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	Mg/L	9.33	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.04.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.42	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	308.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	166.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	113.0	200	600
6.	Calcium as Ca	mg/L	43.28	75	200
7.	Chloride	mg/L	33.98	250	1000
8.	Sulphate	mg/L	53.62	200	400
9.	Nitrate	mg/L	5.80	45	No Relaxation
10.	Iron	mg/L	0.28	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.09	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	29.0	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	10.11	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	–	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.04.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.11
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	51.0
4.	Total Dissolved Solids	mg/L	460.0
5.	BOD at 27°C – 3 Days	mg/L	27.77
6.	Chemical Oxygen Demand	mg/L	100.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	76.97
9.	Sulphate as SO_4	mg/L	140.11
10.	Ammonical Nitrogen as NH_3	mg/L	3.64
11.	Total Kjheldal Nitrogen as TKN	mg/L	10.64
12.	Dissolved Phosphate	mg/L	7.72
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.04.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.45
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	59.0
4.	Total Dissolved Solids	mg/L	388.0
5.	BOD at 27°C – 3 Days	mg/L	18.0
6.	Chemical Oxygen Demand	mg/L	60.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	39.98
9.	Sulphate as SO_4	mg/L	123.35
10.	Ammonical Nitrogen as NH_3	mg/L	4.20
11.	Total Kjheldal Nitrogen as TKN	mg/L	14.28
12.	Dissolved Phosphate	mg/L	1.40
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 07.04.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 ^{o}C	...	6.92
2.	Turbidity	NTU	1.2
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	284.0
4.	Total Suspended Solids	mg/L	56.0
5.	Dissolved Oxygen	mg/L	5.8
6.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	27.99
8.	Sulphate	mg/L	50.27
9.	Nitrate	mg/L	5.35
10.	Fluoride	mg/L	0.56
11.	BOD at 27°C – 3 Days	mg/L	7.0
12.	Chemical Oxygen Demand	mg/L	30.0
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature°C	°C	28.4
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.25
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica	mg/L	9.48

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 05.05.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.35	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	347.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	180.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	102.0	200	600
6.	Calcium as Ca	mg/L	46.49	75	200
7.	Chloride	mg/L	44.98	250	1000
8.	Sulphate	mg/L	47.33	200	400
9.	Nitrate	mg/L	4.39	45	No Relaxation
10.	Iron	mg/L	0.24	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	15.55	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	29.3	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.50	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 05.05.2022

Sr. No.	Parameter	Unit	location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.29	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	251.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	166.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	95.0	200	600
6.	Calcium as Ca	mg/L	39.27	75	200
7.	Chloride	mg/L	32.98	250	1000
8.	Sulphate	mg/L	54.12	200	400
9.	Nitrate	mg/L	3.16	45	No Relaxation
10.	Iron	mg/L	0.22	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	16.52	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	29.8	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	9.65	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 05.05.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.18	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	329.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	184.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	108.0	200	600
6.	Calcium as Ca	mg/L	43.28	75	200
7.	Chloride	mg/L	40.98	250	1000
8.	Sulphate	mg/L	44.23	200	400
9.	Nitrate	mg/L	5.44	45	No Relaxation
10.	Iron	mg/L	0.25	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.46	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	29.8	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	11.05	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	–	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 05.05.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.35	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	288.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	154.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	118.0	200	600
6.	Calcium as Ca	mg/L	41.68	75	200
7.	Chloride	mg/L	36.98	250	1000
8.	Sulphate	mg/L	50.44	200	400
9.	Nitrate	mg/L	4.39	45	No Relaxation
10.	Iron	mg/L	0.22	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	12.15	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	29.9	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.91	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 05.05.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.26
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	43.0
4.	Total Dissolved Solids	mg/L	437.0
5.	BOD at 27°C – 3 Days	mg/L	22.53
6.	Chemical Oxygen Demand	mg/L	80.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	82.97
9.	Sulphate as SO_4	mg/L	147.92
10.	Ammonical Nitrogen as NH_3	mg/L	2.91
11.	Total Kjheldal Nitrogen as TKN	mg/L	9.74
12.	Dissolved Phosphate	mg/L	1.42
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 05.05.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.39
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	67.0
4.	Total Dissolved Solids	mg/L	362.0
5.	BOD at 27°C – 3 Days	mg/L	14.73
6.	Chemical Oxygen Demand	mg/L	50.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	45.98
9.	Sulphate as SO_4	mg/L	138.12
10.	Ammonical Nitrogen as NH_3	mg/L	3.58
11.	Total Kjheldal Nitrogen as TKN	mg/L	12.88
12.	Dissolved Phosphate	mg/L	1.53
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 05.05.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 ^{o}C	...	6.85
2.	Turbidity	NTU	1.5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	268.0
4.	Total Suspended Solids	mg/L	69.0
5.	Dissolved Oxygen	mg/L	5.50
6.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	30.99
8.	Sulphate	mg/L	48.11
9.	Nitrate	mg/L	4.74
10.	Fluoride	mg/L	0.44
11.	BOD at 27°C – 3 Days	mg/L	9.40
12.	Chemical Oxygen Demand	mg/L	20.0
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature°C	°C	30.1
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.19
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica (Si)	mg/L	8.57

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 06.06.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.25	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	346	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	172	200	600
5.	Alkalinity as $CaCO_3$	mg/L	102.0	200	600
6.	Calcium as Ca	mg/L	42.5	75	200
7.	Chloride	mg/L	43.0	250	1000
8.	Sulphate	mg/L	42.6	200	400
9.	Nitrate	mg/L	4.3	45	No Relaxation
10.	Iron	mg/L	0.26	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	16.04	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	mg/L	28.6	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.9	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 06.06.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.31	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	289	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	178	200	600
5.	Alkalinity as $CaCO_3$	mg/L	108.0	200	600
6.	Calcium as Ca	mg/L	40.08	75	200
7.	Chloride	mg/L	38.99	250	1000
8.	Sulphate	mg/L	46.8	200	400
9.	Nitrate	mg/L	3.1	45	No Relaxation
10.	Iron	mg/L	0.19	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.95	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	28.9	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	9.5	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Mar'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 06.06.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.18	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	224	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	186	200	600
5.	Alkalinity as $CaCO_3$	mg/L	96.0	200	600
6.	Calcium as Ca	mg/L	38.48	75	200
7.	Chloride	mg/L	41.99	250	1000
8.	Sulphate	mg/L	43.8	200	400
9.	Nitrate	mg/L	4.9	45	No Relaxation
10.	Iron	mg/L	0.25	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	21.87	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	29.1	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	11.1	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	–	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 06.06.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.29	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	272	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	158.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	112.0	200	600
6.	Calcium as Ca	mg/L	41.8	75	200
7.	Chloride	mg/L	36	250	1000
8.	Sulphate	mg/L	48.68	200	400
9.	Nitrate	mg/L	4.3	45	No Relaxation
10.	Iron	mg/L	0.21	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	13.12	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature°C	°C	29.6	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	9.7	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 06.06.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.25
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	45
4.	Total Dissolved Solids	mg/L	386
5.	BOD at 27°C – 3 Days	mg/L	19.8
6.	Chemical Oxygen Demand	mg/L	75
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	72
9.	Sulphate as SO_4	mg/L	134.8
10.	Ammonical Nitrogen as NH_3	mg/L	2.4
11.	Total Kjheldal Nitrogen as TKN	mg/L	11.4
12.	Dissolved Phosphate	mg/L	1.21
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 05.05.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.29
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	55
4.	Total Dissolved Solids	mg/L	392
5.	BOD at 27°C – 3 Days	mg/L	15.8
6.	Chemical Oxygen Demand	mg/L	50
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	48
9.	Sulphate as SO_4	mg/L	141.2
10.	Ammonical Nitrogen as NH_3	mg/L	3.25
11.	Total Kjheldal Nitrogen as TKN	mg/L	12.9
12.	Dissolved Phosphate	mg/L	1.37
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 07.06.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 ^{o}C	...	7.12
2.	Turbidity	NTU	1.4
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	263
4.	Total Suspended Solids	mg/L	65
5.	Dissolved Oxygen	mg/L	5.6
6.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	25
8.	Sulphate	mg/L	43.2
9.	Nitrate	mg/L	4.58
10.	Fluoride	mg/L	0.34
11.	BOD at 27°C – 3 Days	mg/L	7.8
12.	Chemical Oxygen Demand	mg/L	30
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature°C	°C	29.2
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.21
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica(Si)	mg/L	7.5

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION:OPEN WELL **MONTH: April'22**

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	3.65	1.45	2.15	-
MALI VILLAGE	0.50	6.20	5.7	4.8	0.9	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	4.8	0.9	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	4.82	0.98	2.5	-

All values are in meter(m)

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION:OPEN WELL **MONTH: May'22**

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	3.6	1.6	2.15	-
MALI VILLAGE	0.50	6.20	5.7	4.7	1	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	4.7	1	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	4.74	1.06	2.5	-

All values are in meter(m)

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION:OPEN WELL **MONTH: June'22**

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	3.5	1.7	2.15	-
MALI VILLAGE	0.50	6.20	5.7	4.6	1.1	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	4.58	1.12	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	4.65	1.15	2.5	-

All values are in meter(m)

SECTION 10: NOISE LEVEL MONITORING

To know the background ambient noise level at the project and surrounding environment, noise level were measured at all the ambient air monitoring stations for baseline study.

The Day time & Night time average noise level data are given in tabular formats as well as in graphical form for easy interpretation.

Here, the day time means time from 06:00 am to 10:00 pm & night time means time from 10:00 pm to 06:00 am.

$$Leq = \frac{10\ \text{Log10}\ (\text{t1x10}^{\frac{L1}{10}} + \text{t2 x 10}^{\frac{L2}{10}} + \text{t3 x 10}^{\frac{L3}{10}} + ..)}{T}$$

Where Leq = Equivalent continuous noise level (dB) (A)
t1 = time at L1 (Hours)
t2 = time at L2 (Hours)
L1 = sound pressure level dB (A) at time 1
T = total time over which the Leq is required (Hours)

(N1) At Motia Village

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	11.04.2022	54.6	38.9	49.3	42.3	31.0	36.9
2	12.05.2022	54.1	39.2	50.1	40.2	31.2	35.4
3	09.06.2022	54.3	40.5	49.9	42.2	30.6	37.6

(N2) At Mali Village

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	11.04.2022	54.2	40.3	49.7	39.6	30.5	37.6
2	12.05.2022	53.1	40.2	48.2	40.0	32.6	37.3
3	09.06.2022	53.5	41.2	46.2	40.8	32.4	36.3

(N3) At Nayabad Village

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	12.04.2022	53.1	40.0	48.8	42.0	31.1	37.2
2	13.05.2022	54.2	42.3	50.0	40.2	33.2	36.2
3	10.06.2022	52.9	39.8	49.2	42.6	32.9	37.5

(N4) At Patwa Village							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	12.04.2022	53.8	41.2	49.9	40.1	30.7	36.5
2	13.05.2022	52.6	40.1	47.5	42.3	32.3	36.7
3	10.06.2022	52.1	39.4	48.6	41.8	32.9	37.2

(N5) Nr. Adani Office							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	15.04.2022	53.0	40.2	48.1	40.8	31.2	36.4
2	17.05.2022	58.1	41.3	50.3	38.6	31.8	35.5
3	14.06.2022	57.1	40.5	52.2	41.3	34.8	37.6

(N6) Nr. BTG Area (U/C)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	14.04.2022	73.1	55.2	64.1	57.5	46.7	52.6
2	16.05.2022	71.2	56.3	65.2	56.8	44.2	52.3
3	13.06.2022	74.4	55.1	66.4	54.1	42.7	51.6

(N7) Nr. CT Area							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	14.04.2022	72.8	57.1	66.0	56.8	46.9	51.2
2	16.05.2022	72.9	56.2	65.5	54.6	43.5	50.7
3	13.06.2022	71.2	53.2	64.6	55.1	42.4	50.1

(N8) Nr. RW Reservoir (U/C)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	15.04.2022	73.0	49.7	65.0	64.2	43.4	59.0
2	17.05.2022	72.3	51.6	63.8	50.5	41.1	46.3
3	14.06.2022	69.2	49.7	64.5	50.8	52.3	47.3

(N9) Nr. STP (In township)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	16.04.2022	52.7	39.4	47.9	40.7	31.4	36.6
2	19.05.2022	53.6	38.7	48.7	41.2	32.4	37.7
3	15.06.2022	53.7	43.2	50.8	42.3	32.1	36.4

(N10) Nr. Temple (In township)							
Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	16.04.2022	54.7	42.1	48.7	41.4	30.9	37.3
2	19.05.2022	55.3	43.2	49.3	40.6	30.8	36.5
3	15.06.2022	56.2	43.8	51.6	42.7	34.6	39.1

From above tabulated results it can be concluded that the noise level was within the prescribed limits throughout the monitoring period at the stated locations.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

SECTION 11: SOIL ANALYSIS

11.1 CONCEPT & SCOPE

Soil is fundamental & ultimate natural resources that full fill a number of functions & provide various services like agriculture, industrial construction & ecological habitat development etc. Some of the most significant impacts on this resource occur as a result of activities associated with the use of chemical fertilizers, unscientific construction activities, unplanned city design, unscientific land use pattern and land filling by toxic materials.

Soil analysis can determine the fertility or the expected growth potential and the nutrient deficiency and potential toxicity which help in taking cost effective Marision for the better soil management.

Location Code	Name of Location
S-1	Nr. Mali Village
S-2	Nr. Nayabad Village
S-3	Nr. Patwa Village

11.2 SOIL ANALYTICAL RESULTS

Date of Sampling: 09.05.2022

Location: Nr. Mali Village

Date of Sampling: 09.05.2022

Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.48	NS
2.	Calcium as Ca	%	0.98	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.48	NS
5.	Cupper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.025	NS
7.	Chloride as Cl	%	0.085	NS
8.	Zinc as Zn	mg/kg	6.35	NS
9.	Nitrogen as N	%	0.087	NS
10.	Phosphorous as P	%	0.0018	NS
11.	Potassium as K	%	0.047	NS
12.	Iron as Fe	%	0.051	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.73	NS
15.	Organic Carbon	%	0.43	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	56.0	NS
18.	Silt	%	32.0	NS
19.	Clay	%	12.0	NS

Location: Nr. Nayabad Village

Date of Sampling: 09.05.2022

Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.65	NS
2.	Calcium as Ca	%	0.91	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.37	NS
5.	Cupper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.039	NS
7.	Chloride as Cl	%	0.075	NS
8.	Zinc as Zn	mg/kg	3.77	NS
9.	Nitrogen as N	%	0.072	NS
10.	Phosphorous as P	%	0.002	NS
11.	Potassium as K	%	0.05	NS
12.	Iron as Fe	%	0.061	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.79	NS
15.	Organic Carbon	%	0.48	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	58.0	NS
18.	Silt	%	28.0	NS
19.	Clay	%	14.0	NS

Location: Nr. Patwa Village				
Date of Sampling: 09.05.2022				
Sr. No.	Parameter	Unit	Result	Norms
1.	Magnesium as Mg	%	0.71	NS
2.	Calcium as Ca	%	1.0	NS
3.	Manganese as Mn	mg/kg	BQL(QL=0.1)	NS
4.	Boron as B	mg/kg	0.73	NS
5.	Cupper as Cu	mg/kg	BQL(QL=0.1)	NS
6.	Sulphur as S	%	0.072	NS
7.	Chloride as Cl	%	0.075	NS
8.	Zinc as Zn	mg/kg	4.77	NS
9.	Nitrogen as N	%	0.09	NS
10.	Phosphorous as P	%	0.0025	NS
11.	Potassium as K	%	0.067	NS
12.	Iron as Fe	%	0.05	NS
13.	Molybdenum as Mo	mg/kg	BQL(QL=0.1)	NS
14.	Organic Matter	%	0.72	NS
15.	Organic Carbon	%	0.418	NS
16.	Soil Texture	-	Sandy Loam	NS
17.	Sand	%	55.0	NS
18.	Silt	%	30.0	NS
19.	Clay	%	15.0	NS

Note: NS= Not Specified

ADANI POWER (JHARKHAND) LTD.

2*800 MW Godda Thermal Power Project

Village: Motia, Dist: Godda, Jharkhand

ENVIRONMENTAL MONITORING
REPORT PERIOD: July'22 – Sep'22

Go Green Mechanisms Pvt. Ltd.

Head Office & Lab: Dayal Estate, National Highway No. 8, Opp. APMC Market Gate – 1, Jetalpur, Ahmedabad – 382426

Contact: 7069072008/10

Email: lab@gogreenmechanisms.com

REPORT TITLE

COMPANY NAME:	**Adani Power (Jharkhand) Ltd.**
SITE LOCATION:	2*800 MW Godda Thermal Power Plant Village: Motia, Dist: Godda, Jharkhand
MONITORING PERIOD:	April'22 to June'22
REPORT DATE:	19.07.2022
ORIGINATED BY:	Environmental Monitoring and Analytical Team Go Green Mechanisms Pvt. Ltd.
REVIEWED BY:	Amit Badlani Director, Go Green Mechanisms Pvt. Ltd.
PREPARED BY:	Go Green Mechanisms Pvt. Ltd (GGMPL) Dayal Estate, Opp AMPC Market Gate No.1, Jetalpur-382426 Ahmedabad

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SECTION 1: FOREWORD

The protection of environment plays a crucial role in maintain 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 (Jharkhand) 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 fulfil statutory requirement and to be in tune with Environmental Preservation and sustainable development Adani Power (Jharkhand) Ltd., has retained M/S. Go Green Mechanisms Pvt. Ltd. As Environment Consultants and for various Environmental issues related to their Power Plant.

Environmental Quality Monitoring Report for the Month of Apr'22 to Jun'22 has been collected by Go Green Mechanisms Pvt. Ltd.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

We are thankful to Adani Power (Jharkhand) Ltd. for the opportunity provided to be associated in this endeavour.

SECTION 2: LIST OF EQUIPMENTS

The list of Equipments used in the project is delineated in the following table.

Sr. No.	Name of Equipments	Make / Model
1	Respirable Dust Sampler	Ecotech Instruments / AAS 217BL
2	$PM_{2.5}$ Sampler	Ecotech Instruments & Eonair Technologies/AAS 127 & AQS 235
3	Gaseous Attachment with RDS	Ecotech Instruments / AAS 217BL
4	Sound Level Meter	Hemsun / HDB 2202
5	Weather Monitoring Station	Ambient Weather Station
6	Weighing Balance	Shimadzu /AUW220D
7	UV Visible Spectrophotometer	Systronics
8	Hot Air Oven	Patel Scientific Instruments
9	Filtration Assembly	Labline
10	Water Analysis Kit	Systronics
11	Bacteriological Incubator	Labline
12	Centi-micro Balance	Shimadzu /ATX224
13	Dissolved Oxygen Test Kit	Lutron
14	Autoclave	Patel Scientific Instruments
15	Laminar Air Flow	Labline
16	Muffle Furnace	Patel Scientific Instruments
17	Flame Photometer	Systronics /128
18	Digital colony counter	Labline
19	Microscope	Patel Scientific Instruments
20	Orbital Shaker	Labline
21	Centrifuge	Bio Lab
22	Simple Distillation Assembly	Labline
23	ICP-OES/AES	Thermo Fisher Scientific /iCAP 7400 SERIES
24	AAS	Thermo Fisher Scientific / AA 303
25	Ion Chromatography	Metrohm Herisau / 1.925.0020

SECTION 3: LIST OF PROJECT PERSONNEL

Sr. No.	Name	Qualification	Experience (Yrs)	Designation
1.	Amit Badlani	B.E. (Chemical) M.S.(Energy & Environmental Technology) M.S. (Pollution Control)	17 Yrs	Managing Director
2.	R.K.Pandey	B.Sc. Biology	16 Yrs	Project In-charge
3.	Payal Patel	M Sc. (Env. Sci.)	06 Yrs	Lab Manager
4.	Yash Goswami	Dip. Env. Engineer	11 Yrs	Field Operation - Manger
5.	Tantan Kumar	M Sc. (Env. Mgmt)	04 Yrs	Sr. Chemist
6.	Pooja Parekh	B.Sc. (Microbiology) & DMLT	01 Yr 08 Month	Lab Chemist
7.	Chandan Kumar	B.Sc. Chemistry	03 Yrs	Field Assistant

For Go Green Mechanisms Pvt. Ltd.

Amit Badlani
Managing Director

SECTION 4: EXECUTIVE SUMMARY

Adani Power (Jharkhand) Limited has undertaken the task of preparing EMP report for its 1600 (2x800) MW Godda Thermal Power Plant & Residential Township which is within the premises of TPP.

M/s. Go Green Mechanisms Private Limited, got the opportunity to prepare the Environmental monitoring Data on the basis of actual field monitoring with respect to Group I Parameters I.e. Air, Water, Soil, Noise & Meteorological on behalf of HTG Engineering Pvt. Ltd.

A Meteorological station was set up on the terrace of "Hostel Block" & Micrometeorological parameters like Ambient Temperature, Relative Humidity, Wind direction, Wind Speed, Rain fall & Barometric Pressure etc. were recorded on hourly basis during the study period.

On the basis of wind direction pattern, the three locations of AAQM were selected. The concentration of gaseous pollutants, $PM_{2.5}$ were sampled and analysed for compliance to GSR 826(E) vide Notification Dated 16/11/2009.

Four numbers of Ground water samples, two numbers of Effluent water samples, one number of Surface water sample were collected to understand the overall water quality of the project area. The water parameters were sampled and analysed to check for compliance to the specifications of (IS 10500:2012 & I 2296:1982 Inland surface water Class C).

The noise level was monitored at 10 locations on Day & Night time basis, monthly as per IS 9989: RA 2001.

SECTION 5: CONCEPTS & METHODOLOGY

5.1 METHODOLOGY

In the present study the following are the standard methods used for collection, analysis & interpretation of data:

AAQM Sampling & analysis: "Indian Standards (IS 5182)", "Guidelines for the measurement of Ambient Air Pollutants, Vol-I, CPCB" & "USEPA" methods were used for Ambient Air sampling and analysis to study the present pollution load around the Proposed Project location.

Parameters of AAQM	Standard Methods	Analytical Instruments
PM_{10}	IS 5182 (P•23): RL 2012	Weighing Balance
$PM_{2.5}$	GGMPL/SOP/AA/60	Weighing Balance
Oxides of Nitrogen(NOx)	IS 5182 (P•6):2006	Spectrophotometer
Oxides of Sulphur(SO_2)	IS 5182 (P•2):2009	Spectrophotometer
Mercury	Method IO 3.4:1999	ICP-OES (Hydride Generator)

Water Sampling & analysis: Similarly "Indian Standards (IS 3025)", "USEPA" and "APHA 23rd Edition were used for water sample collection and analysis.

Parameters of Water Samples	Standard Methods	Analytical Instruments
Taste	IS 3025 (Pt 08): RA 2006	•
Turbidity	APHA 23rd Edn 2017 2130 B	Turbidity Meter
Total Dissolve Solid	APHA 23rd Edn 2017 2540 C	Hot air Oven
Boron(B)	APHA 23rd Edn 2017 3120 B	ICP-OES
Calcium(Ca)	APHA 23rd Edn 2017 3500 Ca B	•
Chloride(Cl)	IS 3025 (Pt 32): RA 2007	•
Fluoride(F)	APHA 23rd Edn 2017 4500 F D	Spectrophotometer
Residual Chlorine	APHA 23rd Edn 2017 4500 Cl B	Chlorine kit
Nitrate (NO_3)	IS 3025 (Pt 34): RA 2009	Spectrophotometer
Phenolic Compounds	IS 3025 (Pt 43): RA 2003	Spectrophotometer
Sulphate (SO_4)	APHA 23rd Edn 2017 4500 SO_4 E	Spectrophotometer
Total hardness ($CaCO_3$)	APHA 23rd Edn 2017 2340 C	•
Cyanide (CN)	GGMPL/SOP/W/43: 2020	Ion Chromatography
Selenium (Se)	APHA 23rd Edn 2017 3120 B	ICP-OES
pH	IS 3025 (Pt 11): RA 2006	pH Meter
Colour	IS 3025 (Pt 04): RA 2002	-
Odour	IS 3025 (Pt 05): RA 2006	•
Alkalinity	APHA 23rd Edn 2017 2320 B	•
Temperature	APHA 23rd Edn 2017 2550 B	Thermometer
Magnesium (Mg)	APHA 23rd Edn 2017 3500 Mg B	ICP-OES
Copper (Cu)	APHA 23rd Edn 2017 3120 B	ICP-OES
Iron (Fe)	APHA 23rd Edn 2017 3120 Fe B	ICP-OES

Manganese (Mn)	APHA 23rd Edn 2017 3120 B	ICP-OES
Mercury (Hg)	APHA 23rd Edn 2017 3112 B	ICP-OES (Hydride Generator)
Lead (Pb)	APHA 23rd Edn 2017 3120 B	ICP-OES
Arsenic (As)	APHA 23rd Edn 2017 3120 B	ICP-OES (Hydride Generator)
Cadmium (Cd)	APHA 23rd Edn 2017 3120 B	ICP-OES
Zinc (Zn)	APHA 23rd Edn 2017 3120B	ICP-OES
Hexavalent Chromium	APHA 23rd Edn 2017 3500 Cr B	Spectrophotometer
Detergent	Annex K of IS 13428	Gas Stripping apparatus/ Spectrophotometer
Aluminum	IS 3025 (Pt 55): RA 2009	ICP-OES
E. Coli	IS 1622-1981: RA 2009	Bacteriological incubater/ Autoclave/ Laminar flow
Total Coliform	IS 1622: RA 2009	Bacteriological incubater/ Autoclave/ Laminar flow

Noise Level Monitoring: "Protocol for Ambient Level Noise Monitoring, IS 9989: RA 2001" was followed to monitor the Ambient Noise level surrounding the Project Site.

Parameters	Standard Methods	Analytical Instruments
Leq	IS 9989: RA 2001	Noise Level Meter

Weather Monitoring: "EPA-454/R-99-005, February 2000" was followed for micro-meteorological data collection result interpretation.

Parameters	Standard Methods	Analytical Instruments	Make / Model
Air Temperature	GGMPL/SOP/MP/01:2020	Digital sensor	Ambient Weather Station
Relative Humidity	GGMPL/SOP/MP/01:2020	Digital Sensor(Hygrometer)	
Wind Speed	GGMPL/SOP/MP/01:2020	3 Cup anemometer	
Wind Direction	GGMPL/SOP/MP/01:2020	Hall Effect (Wind Vane)	
Rain Fall	GGMPL/SOP/MP/01:2020	Tipping Bucket	

A brief account of the methodologies and matrices followed in the present study is given under different headings. All the methods were structured for the identification, collection and organization of environmental impacts data. The information, thus gathered, had been analyzed and presented in the form of a number of visual formats for easy interpretation and Marision making.

SECTION 6: PLAN FOR SAMPLING LOCATIONS

Site selection criteria play an important role in the initiation of "baseline data generation" as it provides an outlook on the type of environmental compliance and management to be adopted by the project proponent. The locations were selected on the basis of "joint site survey", "examination of toposheet of the project area", "secondary micro-meteorological data analysis" and "availability of resources" for ambient air quality monitoring & micro-meteorological monitoring.

A synopsis about the locations is as follows:

AAQM Locations	
Code	**Name of Location**
A1	Nr. Motia Village
A2	Nr. Mali Village
A3	Nr. Nayabad Village
Met Data Station	
Code	**Name of Location**
M1	Hostel Block
Water Samples	
Code	**Name of Location**
G/W-1	Motia Village
G/W-2	Mali Village
G/W-3	Nayabad Village
G/W-4	Patwa Village
E/W-1	STP Outlet plant
E/W-2	STP Outlet township
S/W-1	Ganga river
Noise Monitoring Locations	
Code	**Name of Location**
N1	At Motia Village
N2	At Mali Village
N3	At Nayabad Village
N4	At Patwa Village
N5	Nr. Adani Office
N6	Nr. BTG Area (U/C)
N7	Nr. CT Area (U/C)
N8	Nr. RW Reservoir (U/C)
N9	Nr. STP (In township)
N10	Nr. Temple (In township)

SECTION 7: METEOROLOGICAL DATA

Weather monitoring would help in keeping track of different parameters like temperature, humidity, rainfall, wind direction, wind speed & barometric pressure. Real time meteorological data is used to support a number of programs including public aviation, agricultural activity, disaster management etc.

In the present study we monitored the "ambient temperature, relative humidity, wind speed, wind direction, barometric pressure, rainfall etc.

Note: Environmental Quality Monitoring Report for the Month of June'22 has been collected by Envirotech East Pvt. Limited.

Figure 1: Weather Monitoring Station at Hostel B

ADANI POWER (JHARKHAND) LIMITED

2 X 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand

Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

JULY':-2022

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg)	Rainfall(mm
	Max	Min	Avg	Max	Min	Avg	Max	Avg		(Average)	Total
01.07.2022	36.3	25.0	29.4	94.0	57.0	81.3	6.6	0.9	E	742.1	71.9
02.07.2022	35.8	26.3	29.8	93.0	58.0	80.0	6.1	0.8	ENE	740.9	2.8
03.07.2022	35.0	27.5	29.7	92.0	58.0	78.8	3.8	1.0	NE	741.5	0.0
04.07.2022	36.4	27.3	32.3	89.0	53.0	67.3	4.2	1.4	SE	741.1	0.0
05.07.2022	36.5	27.9	30.9	85.0	55.0	73.7	3.9	1.4	ESE	742.0	0.0
06.07.2022	34.9	27.9	30.8	82.0	58.0	72.9	7.7	1.5	E	744.4	0.0
07.07.2022	36.5	27.3	30.2	87.0	54.0	75.0	5.7	1.4	ENE	745.5	0.0
08.07.2022	36.0	27.7	32.7	84.0	54.0	66.2	5.8	1.8	E	743.0	0.0
09.07.2022	36.1	27.7	30.4	85.0	54.0	73.5	4.3	1.6	ESE	742.8	0.0
10.07.2022	36.4	27.5	32.4	83.0	55.0	66.3	6.1	1.5	ESE	741.7	0.0
11.07.2022	35.8	27.8	30.3	82.0	56.0	72.9	4.5	1.2	ESE	742.7	0.0
12.07.2022	35.9	27.7	33.0	82.0	54.0	63.2	4.8	1.4	NE	741.3	0.0
13.07.2022	36.9	28.2	31.3	81.0	53.0	68.9	4.7	1.3	ESE	741.0	0.0
14.07.2022	36.4	28.7	32.1	83.0	55.0	65.9	5.4	1.9	E	740.6	1.5
15.07.2022	36.1	25.2	29.6	91.0	58.0	75.5	8.8	1.6	ESE	742.4	9.4
16.07.2022	35.3	27.3	31.0	91.0	56.0	72.4	4.8	1.3	E	743.1	4.3
17.07.2022	35.6	27.5	30.3	86.0	58.0	73.9	13	1.3	ENE	744.5	0.0
18.07.2022	35.2	27.2	31.5	85.0	57.0	68.5	7.5	2.6	ESE	743.5	0.0
19.07.2022	35.7	27.0	29.8	85.0	56.0	75.9	4	1.4	SE	742.9	0.0
20.07.2022	36.0	27.9	32.8	80.0	54.0	65.2	4.4	1.7	ESE	742.2	0.0
21.07.2022	34.0	27.7	30.1	83.0	59.0	76.5	4.9	1.4	E	743.3	1.3
22.07.2022	34.0	27.4	30.3	88.0	60.0	75.1	4.8	1.0	ENE	744.3	3.3
23.07.2022	35.9	26.7	29.7	89.0	54.0	76.8	6.4	1.7	ENE	744.6	0.0
24.07.2022	30.9	26.2	28.1	92.0	69.0	82.0	3.9	1.0	ESE	745.4	12.9
25.07.2022	32.6	26.1	28.0	88.0	65.0	81.0	5.5	2.0	ESE	747.0	0.6
26.07.2022	33.5	26.4	30.2	88.0	61.0	73.2	4.8	1.9	ESE	747.1	0.0
27.07.2022	36.1	24.1	27.9	94.0	54.0	82.2	8.2	1.3	SE	747.4	40.3
28.07.2022	34.0	25.7	29.3	92.0	63.0	79.3	3.7	0.8	ESE	747.2	0.0
29.07.2022	34.0	27.1	30.0	89.0	65.0	77.7	3.6	0.7	ENE	746.4	0.0
30.07.2022	36.4	26.5	29.1	87.0	65.0	78.5	4.1	1.3	SSE	744.6	0.0

ADANI POWER (JHARKHAND) LIMITED

2 X 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand

Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

AUGUST':-2022

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg)	Rainfall(mm
	Max	Min	Avg	Max	Min	Avg	Max	Avg		(Average)	Total
01.08.2022	32.8	26.0	27.8	92.0	71.0	85.8	8.2	1.2	E	743.7	9.4
02.08.2022	33.5	24.7	28.8	93.0	62.0	80.4	5.6	1.0	E	743.8	2.3
03.08.2022	34.8	25.2	27.5	92.0	59.0	87.5	9.2	1.3	E	744.8	13.9
04.08.2022	33.9	26.0	29.2	92.0	60.0	79.7	6.1	1.3	E	745.0	0.0
05.08.2022	36.1	27.2	31.1	89.0	58.0	73.7	7.1	1.6	E	743.2	0.0
06.08.2022	33.6	28.2	30.6	86.0	62.0	75.5	7.1	1.8	ESE	742.0	1.3
07.08.2022	35.6	27.1	30.6	89.0	57.0	74.1	6.1	1.3	NE	741.7	0.0
08.08.2022	35.3	27.6	30.7	86.0	57.0	74.1	8.7	2.0	E	740.7	1.5
09.08.2022	34.0	27.2	29.7	84.0	59.0	72.2	8.7	2.1	NNE	740.5	0.0
10.08.2022	31.9	27.1	29.2	81.0	64.0	72.9	14.8	2.9	NE	740.1	0.0
11.08.2022	32.1	25.3	27.7	92.0	63.0	81.7	15.3	2.6	NE	742.6	17.5
12.08.2022	34.2	24.4	29.0	91.0	61.0	78.5	7.7	1.2	E	742.4	0.0
13.08.2022	34.6	26.9	29.6	93.0	60.0	79.9	6.6	1.3	ENE	741.7	4.3
14.08.2022	31.5	26.1	28.6	89.0	67.0	76.8	10.7	3.1	NE	742.5	0.8
15.08.2022	30.9	26.0	27.4	89.0	70.0	83.8	9.7	1.8	ESE	746.0	3.1
16.08.2022	35.0	24.6	29.9	93.0	57.0	74.8	4.6	1.1	SE	745.9	4.8
17.08.2022	34.8	27.2	30.7	86.0	57.0	73.5	6.6	1.9	SE	744.5	0.0
18.08.2022	35.2	27.7	30.5	85.0	60.0	76.2	7.1	1.6	SSE	742.6	0.0
19.08.2022	34.8	27.1	30.2	89.0	56.0	74.1	9.7	1.8	NE	742.5	2.0
20.08.2022	30.0	25.5	28.1	93.0	73.0	79.2	7.1	2.6	NE	742.3	35.3
21.08.2022	32.2	26.2	29.1	87.0	66.0	78.1	8.2	2.3	E	743.1	0.5
22.08.2022	34.5	26.5	29.8	90.0	60.0	77.8	5.6	1.5	E	742.7	0.0
23.08.2022	29.3	26.3	28.0	91.0	77.0	85.6	5.6	0.8	E	744.9	7.7
24.08.2022	34.1	26.3	28.7	93.0	57.0	81.8	5.1	0.8	E	746.0	0.0
25.08.2022	34.0	26.3	29.3	88.0	62.0	77.0	7.1	1.8	ESE	744.9	0.0
26.08.2022	36.2	26.3	29.5	89.0	55.0	77.6	4.1	1.5	ESE	744.2	0.0
27.08.2022	36.9	25.4	29.8	87.0	53.0	76.9	8.2	1.8	SE	743.7	15.2
28.08.2022	34.5	25.7	27.7	91.0	64.0	84.1	8.7	2.0	SSE	744.9	8.1
29.08.2022	34.1	25	29.5	93.0	62.0	78.6	9.7	1.9	ENE	747.6	0.0
30.08.2022	34.6	27.2	28.9	89.0	62.0	80.8	7.1	1.6	ENE	747.7	0.0

ADANI POWER (JHARKHAND) LIMITED

2 X 800 MW Ultra Super Critical Thermal Power Plant, Godda, Jharkhand

Site Specific Micro-Meteorological Data

LOCATION: APJL - Godda

Recording Time: 00:00 Hrs - 23:00 Hrs

SEPTEMBER':-2022

Date	Temperature(°C)			Humidity (%)			Wind Speed(M/S)		Wind Direction (blowing from)	Barometric Pressure (mmhg)	Rainfall(mm
	Max	Min	Avg	Max	Min	Avg	Max	Avg		(Average)	Total
01.09.2022	34.9	25.9	28.1	88.0	59.0	81.6	6.6	1.6	SE	746.9	7.1
02.09.2022	28.9	25.5	26.1	94.0	82.0	91.5	11.7	2.2	NE	746.9	88.4
03.09.2022	33.3	25.2	28.0	94.0	66.0	84.1	14.3	1.5	SE	745.2	2.5
04.09.2022	34.7	26.3	29.7	90.0	61.0	77.2	5.1	1.2	SE	745.0	0.0
05.09.2022	34.0	24.6	27.2	93.0	64.0	85.9	14.8	1.5	SE	745.4	30.5
06.09.2022	32.8	25.7	28.3	92.0	66.0	81.9	4.1	0.9	ENE	746.5	0.0
07.09.2022	33.7	27.1	29.1	92.0	65.0	81.7	6.6	0.8	E	747.2	0.0
08.09.2022	33.0	25.6	28.1	93.0	61.0	82.3	6.1	0.9	E	748.2	3.0
09.09.2022	33.8	26.4	28.5	93.0	67.0	84.9	6.6	0.9	E	747.7	8.6
10.09.2022	32.8	25.3	27.3	90.0	68.0	85.0	10.7	1.4	ENE	746.5	12.0
11.09.2022	31.7	25.3	27.7	91.0	68.0	82.9	9.7	1.5	NE	745.7	5.6
12.09.2022	27.7	24.6	26.2	93.0	84.0	87.9	8.2	1.3	ENE	744.9	42.2
13.09.2022	30.2	24.8	27.0	92.0	74.0	84.7	8.7	1.0	NE	745.8	4.6
14.09.2022	30.8	25.2	26.8	92.0	73.0	86.8	10.2	1.3	ENE	747.0	3.6
15.09.2022	30.0	24.8	26.7	92.0	79.0	89.0	5.1	1.4	E	746.3	0.7
16.09.2022	30.8	24.7	27.6	92.0	73.0	85.4	4.6	1.4	ESE	743.6	1.0
17.09.2022	32.5	26.1	28.6	91.0	69.0	83.8	8.7	1.5	SE	744.1	23.6
18.09.2022	34.3	24.0	28.2	92.0	61.0	80.5	7.7	1.1	ENE	745.2	1.8
19.09.2022	34.1	25.6	28.0	91.0	62.0	84.5	6.6	1.1	N	745.6	18.3
20.09.2022	33.3	26.4	28.9	93.0	62.0	79.2	16.6	1.6	E	745.6	3.6
21.09.2022	33.2	26.5	29.1	89.0	64.0	78.4	9.2	2.3	ENE	745.9	2.2
22.09.2022	34.1	26.6	29.4	91.0	61.0	79.0	9.7	2.7	SE	746.4	0.0
23.09.2022	34.4	26.6	29.4	88.0	59.0	77.4	9.7	2.8	SE	746.2	0.0
24.09.2022	33.0	26.5	28.9	89.0	64.0	82.6	7.1	1.9	ESE	745.5	0.0
25.09.2022	31.4	26.0	28.2	90.0	72.0	82.8	8.7	1.7	N	746.8	0.0
26.09.2022	35.6	25.1	27.1	91.0	57.0	84.2	6.1	1.6	E	747.4	2.6
27.09.2022	32.7	25.0	28.4	93.0	62.0	80.5	7.7	1.7	E	746.6	0.0
28.09.2022	34.3	26.0	29.1	89.0	59.0	77.9	6.1	1.3	ESE	746.0	0.0
29.09.2022	30.3	25.7	27.5	89.0	70.0	83.3	6.1	1.4	SSE	745.9	0.0
30.09.2022	33.0	25.2	27.8	91.0	65.0	82.2	3.1	0.8	E	746.6	0.0

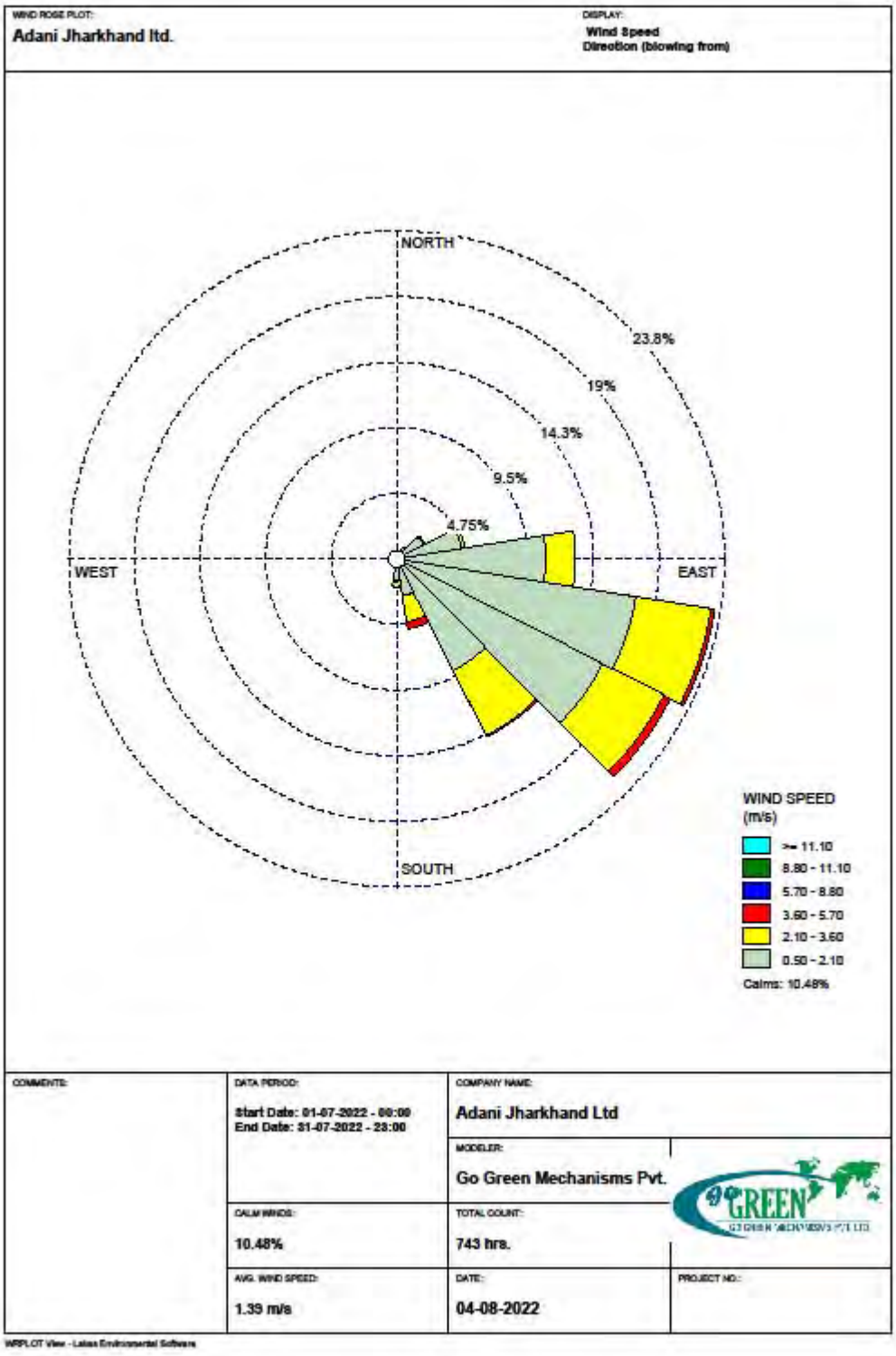


Figure 1

Figure 2: Windrose diagram for the month of Apr'22

It is observed from the windrose diagram for the month of Apr'22 the predominant wind direction is SE.

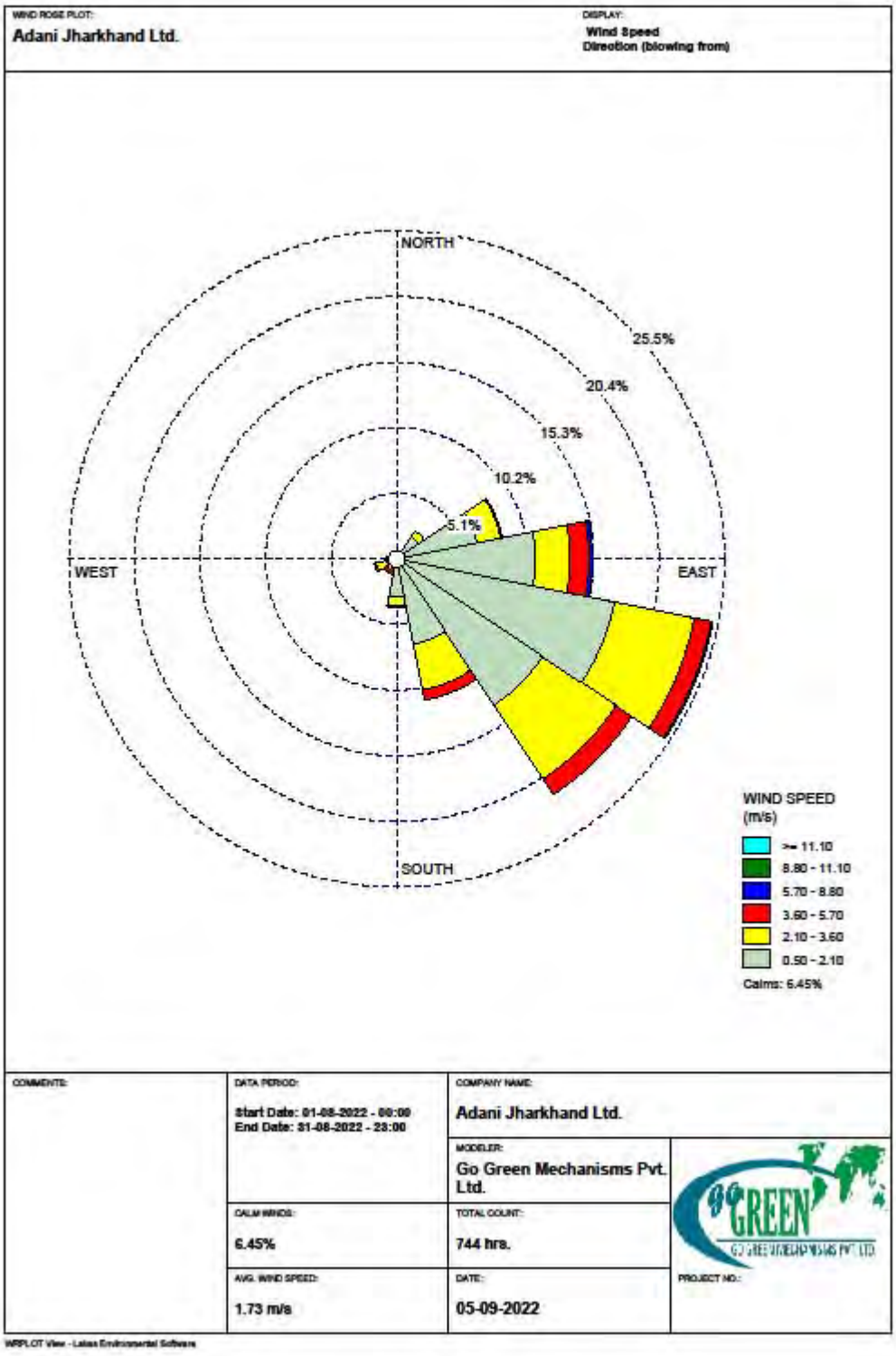


Figure 3: Windrose diagram for the month of May'22

It is observed from the Windrose diagram for the month of May'22 the predominant wind direction is SE.

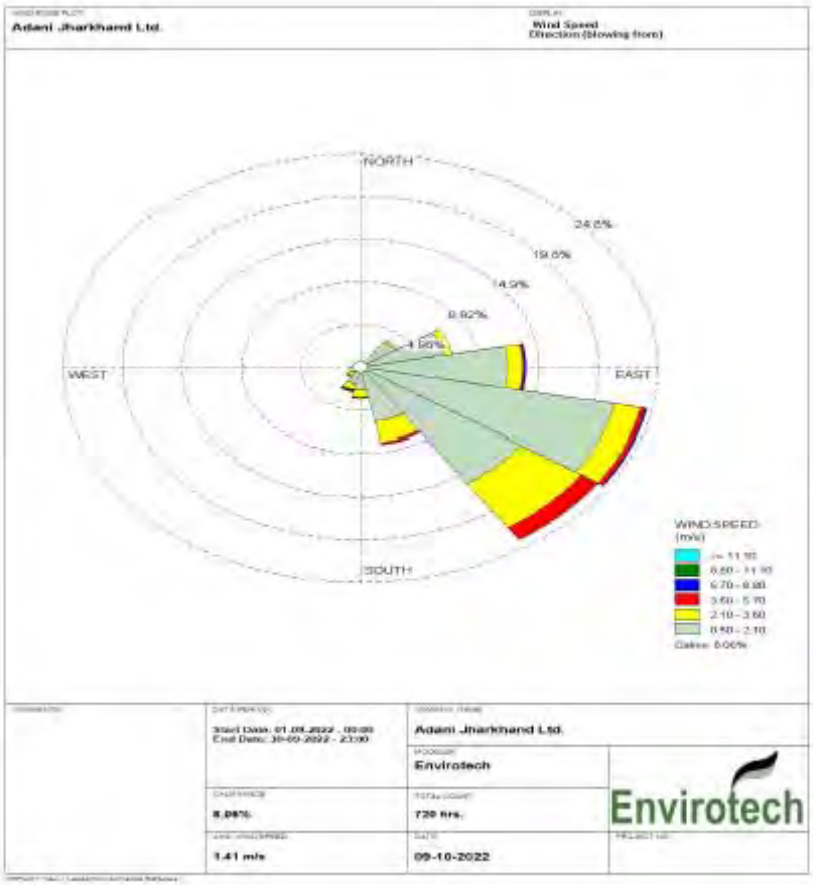


Figure 4: Windrose diagram for the month of Jun'22

It is observed from the windrose diagram for the month of Jun'22 the predominant wind direction is SSE.

SECTION 8: AMBIENT AIR MONITORING REPORT

8.1 CONCEPT & SCOPE

The Ambient Air monitoring encompasses the results and statistical evaluation of the data monitored at three different locations.

Different parameters like PM_{10}, $PM_{2.5}$, Oxides of Sulphur, Oxides of Nitrogen and Mercury are monitored for representing the ambient air quality within the study area.

8.2 FREQUENCY OF SAMPLING

The frequency of the sampling for AAQM was as follows:

PARAMETERS	FREQUENCY OF EACH LOCATION
PM10, PM2.5, Oxides of Sulphur, Oxides of Nitrogen	Twice in a week
Mercury	Once in a month

8.3 SAMPLING DURATION AS PER NAAQMs 2009

Sr. No.	Parameters	Sampling Duration (Hr.)
1	Particulate Matter (PM_{10})	24
2	Particulate Matter ($PM_{2.5}$)	24
3	Oxides of Sulphur (SO_2)	24
4	Oxides of Nitrogen (NO_x)	24
5	Mercury	-

8.4 AAQM METHODOLOGY

PARAMETERS	METHODOLOGY/PRINCIPLE
Particulate Matter (PM_{10})	Air is drawn through a size-selective inlet and through a 20.3 X 25.4 cm (8 X 10 in) filter at a flow rate, which is typically 1132 L/min. Particles with aerodynamic diameter less than the cut-point of the inlet are collected, by the filter. The mass of these particles is determined by the difference in filter weights prior to and after sampling. The concentration of PM_{10} in the designated size range is calculated by dividing the weight gain of the filter by the volume of air sampled.
Particulate Matter ($PM_{2.5}$)	An electrically powered air sampler draws ambient air at a constant volumetric flow rate (16.7 lpm) maintained by a mass flow / volumetric flow controller coupled to a microprocessor into specially designed inertial particle-size separator (i.e. cyclones or impactors) where the suspended particulate matter in the $PM_{2.5}$ size ranges is separated for collection on a 47 mm polytetrafluoroethylene (PTFE) filter over a specified sampling period. Each filter is weighed before and after sample collection to determine the net gain due to the particulate matter. The mass concentration in the ambient air is computed as the total mass of collected particles in the $PM_{2.5}$ size ranges divided by the actual volume of air sampled, and is expressed in $\mu g/m^3$. The microprocessor reads averages and stores five-minute averages of ambient temperature, ambient pressure, filter temperature and volumetric flow rate.
Sulphur Dioxide (SO_2)	Sulphur dioxide from air is absorbed in a solution of potassium tetrachloromercurate (TCM). The impingers setup for the absorbance of Sulphur Dioxide from air is shown in Figure 15. A dichlorosulphitomercurate complex, which resists oxidation by the oxygen in the air, is formed. Once formed, this complex is stable to strong oxidants such as ozone and oxides of nitrogen and therefore, the absorber solution may be stored for some time prior to analysis. The complex is made to react with para-rosaniline and formaldehyde to form the intensely coloured pararosaniline methylsulphonic acid. The absorbance of the solution is measured by means of a suitable spectrophotometer.
Nitrogen Dioxide	Ambient nitrogen dioxide (NO_2) is collected by bubbling air through a solution of sodium hydroxide and sodium arsenite. The concentration of nitrite ion (NO_2) produced during sampling is determined colorimetrically by reacting the nitrite ion with phosphoric acid, sulfanilamide, and N-(1-naphthyl)-ethylenediamine dihydrochloride (NEDA) and measuring the absorbance of the highly coloured azo-dyeat 540 nm.

Figure 5: Ambient air Motoring Nr. Mali Village

Figure 6: Ambient air Monitoring Nr. Motia Village

8.5 ANALYTICAL RESULTS

Results & statistical calculations for Location- A1:

Name of Location (A1)		Nr. Motia Village			
Sr. No.	Date of Sampling	PM_{10}	$PM_{2.5}$	SO_2	NOx
Unit		µg/m³	µg/m³	µg/m³	µg/m³
GSR 826 (E)		100	60	80	80
1.	04.07.2022	58.6	22.0	8.3	12.6
2.	07.07.2022	71.0	29.0	10.6	14.8
3.	11.07.2022	66.5	28.3	9.0	12.4
4.	14.07.2022	46.9	23.6	8.4	11.5
5.	18.07.2022	65.4	35.1	10.0	14.2
6.	21.07.2022	38.0	17.7	11.3	15.7
7.	25.07.2022	44.0	19.9	9.9	14.5
8.	28.07.2022	59.7	24.2	9.1	12.7
9.	01.08.2022	26.7	12.7	6.2	10.1
10.	04.08.2022	54.6	26.8	8.6	13.4
11.	08.08.2022	51.2	24.6	8.0	12.8
12.	11.08.2022	28.6	13.5	6.1	9.8
13.	15.08.2022	50.1	22.3	8.7	12.3
14.	18.08.2022	55.3	27.5	7.3	11.8
15.	22.08.2022	49.4	26.5	6.1	9.4
16.	25.08.2022	60.1	28.6	8.2	12.4
17.	29.08.2022	56.7	25.9	7.2	12.0
18.	02.09.2022	20.5	11.1	BQL(QL=5)	BQL(QL=5)
19.	06.09.2022	50.4	24.4	6.8	9.5
20.	09.09.2022	36.8	17.3	6.6	10.1
21.	13.09.2022	46.2	23.4	7.1	10.2
22.	16.09.2022	25.5	13.2	5.2	8.3
23.	20.09.2022	56.9	26.8	8.2	12.2
24.	23.09.2022	61.2	29.5	8.7	12.6
25.	27.09.2022	55.1	25.8	8.1	11.3

RESULT INTERPRETATION				
No. of Observations	25	25	25	25
Min Concentration	20.5	11.1	BQL(QL=5)	BQL(QL=5)
Max Concentration	71.0	35.1	11.3	15.7
Average	49.4	23.2	8.1	8.1

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

Results & statistical calculations for Location- A2:

Name of Location (A2)		Nr. Mali Village			
Sr. No.	**Date of Sampling**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NOx**
Unit		µg/m³	µg/m³	µg/m³	µg/m³
GSR 826 (E)		100	60	80	80
1.	04.07.2022	68.0	28.0	9.3	14.5
2.	07.07.2022	64.5	30.5	10.2	13.8
3.	11.07.2022	70.5	28.9	9.4	15.0
4.	14.07.2022	50.1	26.9	8.1	13.2
5.	18.07.2022	61.4	35.8	11.2	16.2
6.	21.07.2022	42.0	16.8	8.5	14.0
7.	25.07.2022	47.0	22.9	7.1	12.9
8.	28.07.2022	67.0	27.7	10.4	14.7
9.	01.08.2022	24.9	13.5	6.0	9.7
10.	04.08.2022	58.9	25.7	7.9	13.7
11.	08.08.2022	48.5	24.6	7.0	10.2
12.	11.08.2022	25.8	13.7	5.9	10.0
13.	15.08.2022	46.9	21.9	7.8	11.2
14.	18.08.2022	49.9	25.6	8.1	12.4
15.	22.08.2022	46.7	25.3	7.5	11.3
16.	25.08.2022	56.4	26.7	9.1	13.4
17.	29.08.2022	61.8	30.2	8.2	12.7
18.	02.09.2022	18.8	9.8	BQL(QL=5)	BQL(QL=5)
19.	06.09.2022	49.2	25.3	7.0	10.3
20.	09.09.2022	32.4	15.3	6.4	9.3
21.	13.09.2022	42.3	20.3	6.7	9.4
22.	16.09.2022	28.8	14.0	6.0	9.1
23.	20.09.2022	50.3	24.7	7.6	11.0
24.	23.09.2022	58.2	27.5	7.9	11.9
25.	27.09.2022	60.1	29.4	7.7	11.5

RESULT INTERPRETATION				
No. of Observations	25	25	25	25
Min Concentration	18.8	9.8	BQL(QL=5)	BQL(QL=5)
Max Concentration	70.5	35.8	11.2	16.2
Average	49.2	23.6	8.0	12.1

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

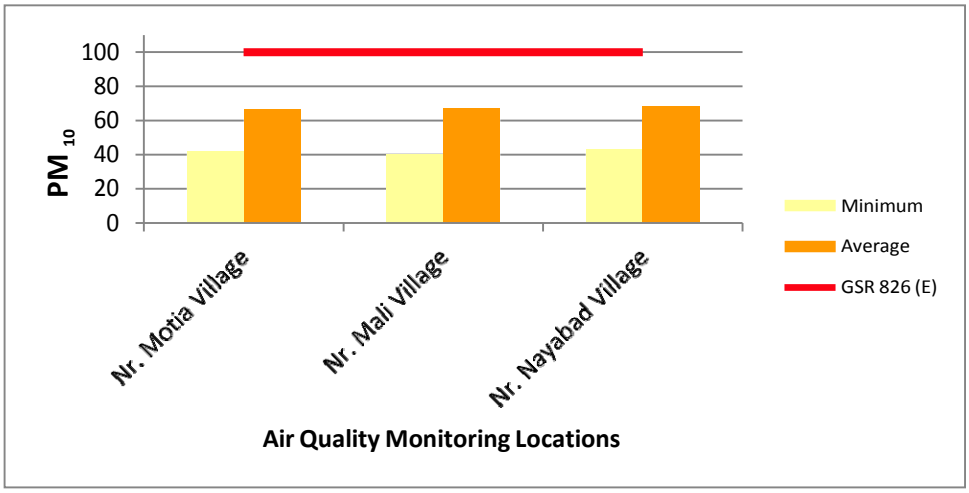
Results & statistical calculations for Location- A3:

Name of Location (A3)		Nr. Nayabad Village			
Sr. No.	**Date of Sampling**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NOx**
Unit		µg/m³	µg/m³	µg/m³	µg/m³
GSR 826 (E)		100	60	80	80
1.	04.07.2022	65.2	31.2	10.5	13.8
2.	07.07.2022	66.4	29.0	11.0	14.3
3.	11.07.2022	72.0	32.9	11.6	15.2
4.	14.07.2022	51.2	21.8	8.0	13.7
5.	18.07.2022	73.2	33.9	12.0	15.6
6.	21.07.2022	42.0	14.3	9.3	14.1
7.	25.07.2022	37.0	15.1	10.1	15.3
8.	28.07.2022	56.9	22.1	6.1	11.7
9.	01.08.2022	30.1	14.2	5.8	9.5
10.	04.08.2022	60.1	30.2	7.7	12.9
11.	08.08.2022	55.6	27.6	7.9	12.5
12.	11.08.2022	31.2	16.4	5.9	9.7
13.	15.08.2022	48.6	23.1	6.6	10.4
14.	18.08.2022	56.2	26.8	8.1	13.2
15.	22.08.2022	45.3	23.3	7.4	12.2
16.	25.08.2022	61.7	31.4	8.6	13.7
17.	29.08.2022	59.4	27.5	7.6	12.8
18.	02.09.2022	21.3	10.5	BQL(QL=5	BQL(QL=5)
19.	06.09.2022	56.8	26.7	7.3	11.2
20.	09.09.2022	41.2	20.1	5.5	8.9
21.	13.09.2022	48.6	23.7	8.0	12.1
22.	16.09.2022	30.1	14.1	6.2	10.6
23.	20.09.2022	60.2	28.6	7.8	11.8
24.	23.09.2022	63.2	30.3	8.6	12.7
25.	27.09.2022	57.6	26.6	7.1	10.4

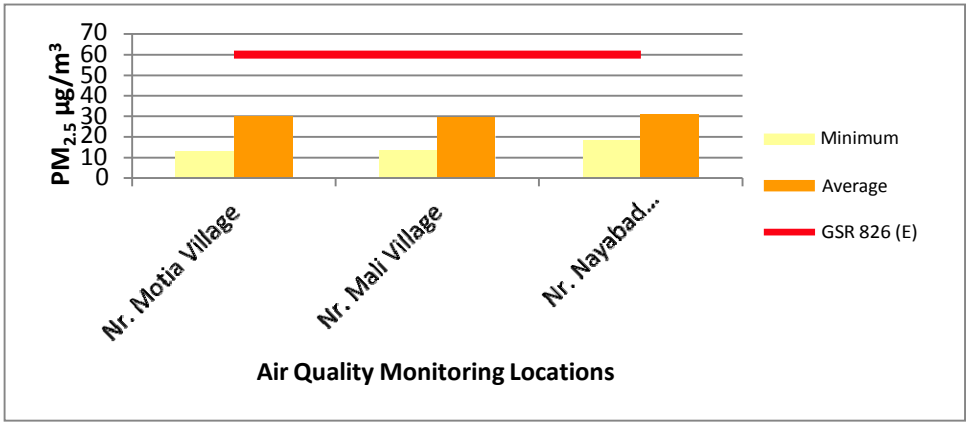
RESULT INTERPRETATION				
No. of Observations	26	26	26	26
Min Concentration	21.1	10.5	BQL(QL=5)	BQL(QL=5)
Max Concentration	73.2	33.9	12.0	15.6
Average	51.6	24.1	8.1	12.4

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

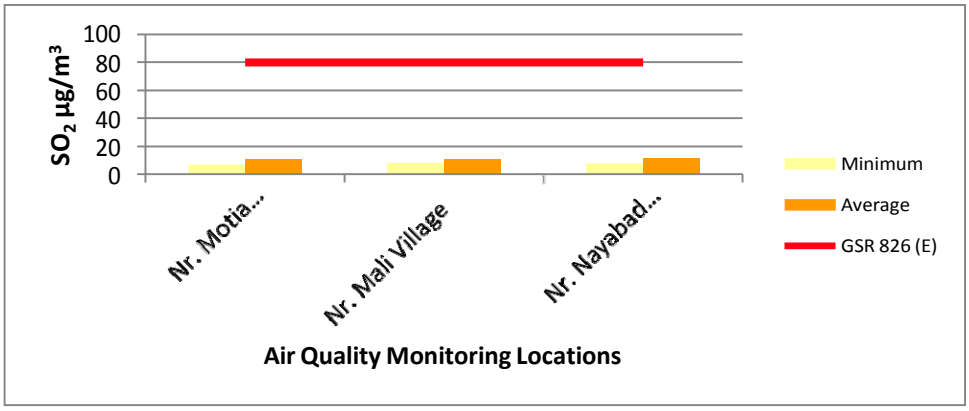
8.6 GRAPHICAL REPRESENTATION OF THE RESULTS



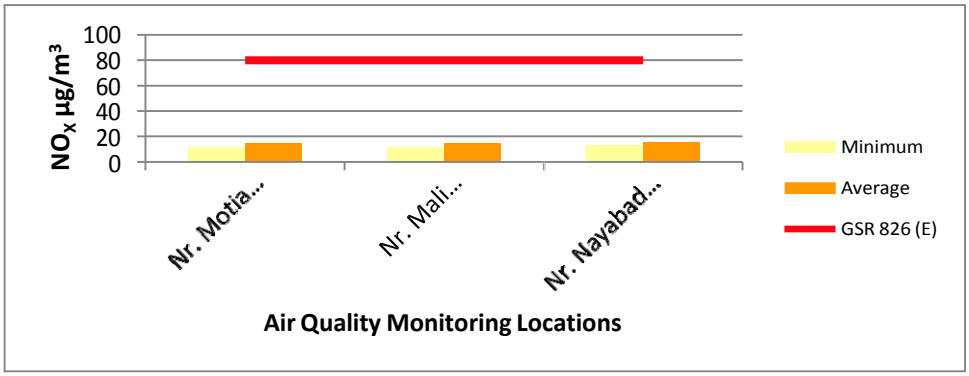
Graph 1: Particulate Matter (PM_{10})



Graph 2: Particulate Matter ($PM_{2.5}$)



Graph 3: Sulphur Dioxide (SO_2)



Graph 4: Oxides of Nitrogen (NO_x)

8.7 EXECUTIVE SUMMARY OF AAQM RESULTS

Particulate Matter (PM_{10})				
Site	**Minimum**	**Maximum**	**Average**	**GSR 826 (E)**
Nr. Motia Village	20.5	71.0	49.3	100
Nr. Mali Village	18.8	70.5	49.2	100
Nr. Nayabad Village	21.3	73.2	51.6	100

Particulate Matter ($PM_{2.5}$)				
Site	**Minimum**	**Maximum**	**Average**	**GSR 826 (E)**
Nr. Motia Village	11.1	35.1	23.2	60
Nr. Mali Village	9.8	35.8	23.6	60
Nr. Nayabad Village	10.5	33.9	24.1	60

Sulphur Dioxide (SO_2)				
Site	**Minimum**	**Maximum**	**Average**	**GSR 826 (E)**
Nr. Motia Village	BQL(QL=5)	11.3	8.1	80
Nr. Mali Village	BQL(QL=5)	11.2	8.0	80
Nr. Nayabad Village	BQL(QL=5)	14.3	8.1	80

Nitrogen Dioxide (NO_2)				
Nr. Motia Village	BQL(QL=5)	15.7	11.9	**GSR 826 (E)**
Nr. Mali Village	BQL(QL=5)	16.2	12.1	80
Nr. Nayabad Village	BQL(QL=5)	15.6	12.4	80
				80

From all the above graphical representation it is clearly interpreted that all the values of PM_{10}, $PM_{2.5}$, SO_2 and NO_X were lower than the prescribed limits for all the stated locations.

8.8 ANALYTICAL RESULTS OF MERCURY

In this study, we also monitored some other critical pollutants like Mercury to assess the existing levels of air pollutants as well as the regional background concentration of the cluster area.
Beside these, some Heavy metal concentration in the ambient air were also monitored in and around the project area. The following tabulated pollutants were monitored once in a month.

Location	Sampling Month	Mercury (Hg)
Unit		µg/m^3
Limits as per GSR 826 Standard		NS
Nr. Motia Village	July'22	BQL(QL=1)
	Aug'22	BQL(QL=1)
	Sep'22	BQL(QL=1)
Nr. Mali Village	July'22	BQL(QL=1)
	Aug'22	BQL(QL=1)
	Sep'22	BQL(QL=1)
Nr. Nayabad Village	July'22	BQL(QL=1)
	Aug'22	BQL(QL=1)
	Sep'22	BQL(QL=1)

Note: NS= Not Specified

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

SECTION 9: WATER ANALYSIS REPORT

9.1 CONCEPT & SCOPE

Water quality of the project area plays an important role on the socio economy of the Project. The higher concentrations of the water pollutants have serious impacts on the environment. Hence, it becomes important to assess the water quality periodically in the project vicinity.

Thus to assess the water quality of the project area, 04 locations were selected for Ground water sampling, 02 locations were selected for Effluent water sampling and 01 location was selected for surface water sampling.

The quality of Ground water samples were compared with respect to IS 3025/APHA specification, the concentration of the target analytes are within the prescribed limits.

Bacterial examination was also carried out to find out the E-Coli & Total Coliform contamination in water sources.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

9.2 METHODOLOGY

PARAMETER	PRINCIPLE OF METHEDOLOGY
PH	Measurement of pH is one of the most important and frequently used test in water chemistry. Practically every phase of water supply and wastewater treatment, e.g., acid-base neutralization, Water softening, precipitation, coagulation, disinfection and corrosion control, is pH dependent. pH is used in alkalinity and carbon dioxide measurements and many other acid-base equilibria. At a given temperature the intensity of the acid or basic character of a solution is indicated by pH or hydrogen ion activity. Alkalinity and acidity are the acid and base neutralizing capacities of a water and usually expressed in mole per liter, needed to change the pH value of a 1-L sample by 1 unit. pH as defined by Sorenson is –log $[H^+]$; it is the "intensity" factor of acidity
Turbidity	The method is based on a comparison of the intensity of light scattered by a standard reference suspension under the same condition. Higher the intensity of scattered light, the higher the turbidity of particular sample. Formazin polymer is used as the primary standard reference suspension. The turbidity of a specify concentration of formalin suspension is defined as 4000 NTU.
Chloride	In a neutral or slightly alkaline solution, potassium chromate can indicate the endpoint of the silver nitrate titration of chloride. Silver chloride is precipitated quantitatively before red silver chromate is formed.
Fluoride	The SPANDS colorimetric method is based on the reaction between fluoride and a zirconium-dye lake. Fluoride reacts with the dye lake, dissociating a portion of it into a colorless complex anion (ZrF_6^{-2}) and the dye. As the amount of fluoride increase, the color produced becomes progressively lighter. The reaction rate between fluoride and zirconium ions is influenced greatly by the acidity of the reaction mixture. If the proportion of acid in the reagent is increased, the reaction can be made almost instantaneous. Under such condition, however, the effect of various ions differs from that in the conventional alizarin methods. The selection of dye for this rapid fluoride method is governed largely by the resulting tolerance to these ions.
Sulphate	Sulphate ion (SO_4^{2-}) is precipitated in an acetic acid medium with barium chloride ($BaCl_2$) so as to form barium sulphate ($BaSO_4$) crystals of uniform size. Light absorbance of the $BaSO_4$ suspension is measured by a photometer and the SO_4^{2-} concentration is determined by comparison of the reading with a standard curve SO_4^{2-}. The absorbance of the barium sulphate formed is measured by a spectrophotometer at 450 nm.
Cd, Cu, As, Pb, Hg, Zn, Mn, Fe, B	The multi-element determination of trace elements by ICP-OES. The basis of the method is the measurement of atomic emission by an optical spectroscopic technique. The prepared samples are nebulized and the aerosols that is produced is transported to the plasma torch where excitation occurs characteristic atomic-line emission spectra are produced by a radio-frequency inductively coupled plasma. The spectra are dispersed by a grating spectrometer and the intensities of the lines are monitored by detectors.
Hexavalent Chromium (As Cr^{+6})	This procedure measures only hexavalent chromium, Cr^{+6}. For total chromium, Determination, acid-digest the sample and follow with a suitable instrumental analysis technique. The hexavalent chromium is determined calorimetrically by reaction with diphenylcarbazide in acid solution. A red-violet colored complex of unknown composition is produced which is measured at 540 nm.
Calcium (As Ca)	When EDTA is added to water containing both calcium and magnesium it combines first with the calcium. Calcium can be determined directly with EDTA, when the pH is made sufficiently high that the magnesium is largely precipitated as the hydroxide and an indicator is used that combines with calcium only. Several indicators give a

	Colour change when all of the calcium has been complexed by the EDTA at a pH of 12 to 13.
Total Hardness (As $CaCO_3$)	This method depends on ability of EDTA or its disodium salt to form stable complexes with calcium and magnesium ions. When the dye Eriochrome black T (EBT) is added to a solution containing calcium and magnesium ions at pH 10.0 a wine red complex is formed. This solution is titrated with standard solution of disodium salt of EDTA, which extracts calcium and magnesium from the dye complex and the dye is changed back to its original blue Colour. Eriochrome black T is used to indicate the end-point for the titration of calcium and magnesium together.
Residual Chloride	Chlorine will liberate free iodine from potassium iodide (KI) solution at pH 8 or less. The liberated iodine is titrated with a standard solution of sodium thiosulfate ($Na_2S_2O_3$) with starch as the indicator. Titrate at pH 3 to 4 because the reaction is not stoichiometric at neutral pH due to partial oxidation of thiosulfate to sulfate.
Total Dissolved Solids	A well-mixed sample is filtered through a standard filter and the filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180°C. The increase in dish weight represents the total dissolved solids.
Nitrate	Two moles of nitrate nitrogen react with one mole of chromotropic acid to form a yellow reaction product having maximum absorbance at 410 nm.
Alkalinity (As $CaCO_3$)	Hydroxyl ions present in a sample as a result of dissociation or hydrolysis of solutes react with addition of standard acid. Alkalinity thus depends on the end point pH used. For method of determining inflection points from titration curves and the rationale for titrating to fixed pH endpoints.

Figure 7: Water Sampling Motia Village, Hand pump

Figure 8: Water Sampling Mali Village, Hand pump

Figure 9: Water Sampling Nayabad Village, Hand pump

Figure 10: Water Sampling Patwa Village Hand pump

Figure 11: Water Sampling at STP Outlet plant

Figure 12: Water Sampling at STP Outlet township

9.3 ANALYTICAL RESULTS

Date of Sampling: 11.07.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.15	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	0.12	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	312.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	156.1	200	600
5.	Alkalinity as $CaCO_3$	mg/L	101.0	200	600
6.	Calcium as Ca	mg/L	39.28	75	200
7.	Chloride	mg/L	51.98	250	1000
8.	Sulphate	mg/L	38.61	200	400
9.	Nitrate	mg/L	3.53	45	No Relaxation
10.	Iron	mg/L	0.26	0.3	No Relaxation
11.	Fluoride	mg/L	BQL (QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL (QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL (QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.09	30	100
15.	Residual Chlorine	mg/L	BQL (QL=0.05)	0.2	1
16.	Colour	Hazen	BQL (QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	^{0}C	27.6	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL (QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.26	NS	NS
32.	Detergent	mg/L	BQL (QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 11.07.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.28	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	237.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	131.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	96.0	200	600
6.	Calcium as Ca	mg/L	32.06	75	200
7.	Chloride	mg/L	41.49	250	1000
8.	Sulphate	mg/L	45.34	200	400
9.	Nitrate	mg/L	2.18	45	No Relaxation
10.	Iron	mg/L	0.21	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	12.39	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	28.2	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.44	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 11.07.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.16	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	221.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	145.1	200	600
5.	Alkalinity as $CaCO_3$	mg/L	89.0	200	600
6.	Calcium as Ca	mg/L	34.47	75	200
7.	Chloride	mg/L	38.49	250	1000
8.	Sulphate	mg/L	42.37	200	400
9.	Nitrate	mg/L	2.79	45	No Relaxation
10.	Iron	mg/L	0.24	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.34	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	27.0	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	Mg/L	8.6	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 11.07.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.24	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	238.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	136.1	200	600
5.	Alkalinity as $CaCO_3$	mg/L	105.0	200	600
6.	Calcium as Ca	mg/L	31.26	75	200
7.	Chloride	mg/L	30.49	250	1000
8.	Sulphate	mg/L	41.78	200	400
9.	Nitrate	mg/L	3.56	45	No Relaxation
10.	Iron	mg/L	0.29	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.09	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	26.9	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	6.91	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	–	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 11.07.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.35
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	51.0
4.	Total Dissolved Solids	mg/L	466.0
5.	BOD at 27°C – 3 Days	mg/L	24.0
6.	Chemical Oxygen Demand	mg/L	80.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	90.97
9.	Sulphate as SO_4	mg/L	149.5
10.	Ammonical Nitrogen as NH_3	mg/L	3.92
11.	Total Kjheldal Nitrogen as TKN	mg/L	11.76
12.	Dissolved Phosphate	mg/L	1.52
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 11.07.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.47
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	68.0
4.	Total Dissolved Solids	mg/L	441.0
5.	BOD at 27°C – 3 Days	mg/L	19.0
6.	Chemical Oxygen Demand	mg/L	70.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	78.98
9.	Sulphate as SO_4	mg/L	165.92
10.	Ammonical Nitrogen as NH_3	mg/L	4.76
11.	Total Kjheldal Nitrogen as TKN	mg/L	15.40
12.	Dissolved Phosphate	mg/L	2.03
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 12.07.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 ^{o}C	...	7.12
2.	Turbidity	NTU	1.07
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	217.0
4.	Total Suspended Solids	mg/L	46.0
5.	Dissolved Oxygen	mg/L	5.3
6.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	34.99
8.	Sulphate	mg/L	35.84
9.	Nitrate	mg/L	3.28
10.	Fluoride	mg/L	0.33
11.	BOD at 27°C – 3 Days	mg/L	3.1
12.	Chemical Oxygen Demand	mg/L	10.0
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature˚C	˚C	27.6
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.16
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica	mg/L	6.73

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 08.08.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.27	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	0.18)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	292.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	142.1	200	600
5.	Alkalinity as $CaCO_3$	mg/L	92.0	200	600
6.	Calcium as Ca	mg/L	30.46	75	200
7.	Chloride	mg/L	47.0	250	1000
8.	Sulphate	mg/L	35.8	200	400
9.	Nitrate	mg/L	3.2	45	No Relaxation
10.	Iron	mg/L	0.17	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	16.04	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	28.1	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	6.8	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 08.08.2022

Sr. No.	Parameter	Unit	location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.22	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	210.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	116.0	200	600
5.	Alkalinity as $CaCO_3$	mg/L	87.0	200	600
6.	Calcium as Ca	mg/L	28.6	75	200
7.	Chloride	mg/L	33.99	250	1000
8.	Sulphate	mg/L	40.1	200	400
9.	Nitrate	mg/L	1.90	45	No Relaxation
10.	Iron	mg/L	0.18	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	11.18	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	28.8	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	6.31	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 08.08.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.34	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	196.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	156.1	200	600
5.	Alkalinity as $CaCO_3$	mg/L	76.0	200	600
6.	Calcium as Ca	mg/L	36.07	75	200
7.	Chloride	mg/L	32.49	250	1000
8.	Sulphate	mg/L	34.64	200	400
9.	Nitrate	mg/L	2.28	45	No Relaxation
10.	Iron	mg/L	0.21	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.46	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	27.4	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.0	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	–	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 08.08.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.11	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	242.0	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	136.1	200	600
5.	Alkalinity as $CaCO_3$	mg/L	112.0	200	600
6.	Calcium as Ca	mg/L	41.68	75	200
7.	Chloride	mg/L	36.87	250	1000
8.	Sulphate	mg/L	47.63	200	400
9.	Nitrate	mg/L	3.90	45	No Relaxation
10.	Iron	mg/L	0.32	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	10.69	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	27.1	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.51	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 08.08.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.29
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	47.0
4.	Total Dissolved Solids	mg/L	396.0
5.	BOD at 27°C – 3 Days	mg/L	20.0
6.	Chemical Oxygen Demand	mg/L	70.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	102.0
9.	Sulphate as SO_4	mg/L	141.7
10.	Ammonical Nitrogen as NH_3	mg/L	3.22
11.	Total Kjheldal Nitrogen as TKN	mg/L	9.94
12.	Dissolved Phosphate	mg/L	1.35
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 08.08.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.34
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	55.0
4.	Total Dissolved Solids	mg/L	412.0
5.	BOD at 27°C – 3 Days	mg/L	13.0
6.	Chemical Oxygen Demand	mg/L	60.0
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	86.0
9.	Sulphate as SO_4	mg/L	157.44
10.	Ammonical Nitrogen as NH_3	mg/L	3.92
11.	Total Kjheldal Nitrogen as TKN	mg/L	13.72
12.	Dissolved Phosphate	mg/L	1.85
13.	Aluminium (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Date of Sampling: 09.08.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 ^{o}C	...	7.19
2.	Turbidity	NTU	1.1
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	193.0
4.	Total Suspended Solids	mg/L	34.0
5.	Dissolved Oxygen	mg/L	5.7
6.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	29.99
8.	Sulphate	mg/L	30.70
9.	Nitrate	mg/L	3.03
10.	Fluoride	mg/L	0.26
11.	BOD at 27°C – 3 Days	mg/L	2.33
12.	Chemical Oxygen Demand	mg/L	15.0
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature˚C	˚C	27.2
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.14
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica (Si)	mg/L	5.5

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: NS - Not Specified

Date of Sampling: 05.09.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Motia Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.1	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	315	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	158	200	600
5.	Alkalinity as $CaCO_3$	mg/L	98.0	200	600
6.	Calcium as Ca	mg/L	35.9	75	200
7.	Chloride	mg/L	50.2	250	1000
8.	Sulphate	mg/L	40.2	200	400
9.	Nitrate	mg/L	3.4	45	No Relaxation
10.	Iron	mg/L	0.22	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	16.8	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	mg/L	27.5	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.0	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	_	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Jun'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 05.09.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Mali Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.18	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	285	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	149	200	600
5.	Alkalinity as $CaCO_3$	mg/L	92.0	200	600
6.	Calcium as Ca	mg/L	35.6	75	200
7.	Chloride	mg/L	36.1	250	1000
8.	Sulphate	mg/L	42.3	200	400
9.	Nitrate	mg/L	2.0	45	No Relaxation
10.	Iron	mg/L	0.22	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	14.6	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	29.6	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL(QL=0.025)	0.05	No Relaxation
22.	Aluminium (Al)	mg/L	BQL(QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL(QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL(QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL(QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL(QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL(QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL(QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL(QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	9.2	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 05.09.2022

Sr. No.	Parameter	Unit	Locations	As Per IS 10500:2012	
			Nayabad Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.25	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	305	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	179	200	600
5.	Alkalinity as $CaCO_3$	mg/L	95.0	200	600
6.	Calcium as Ca	mg/L	41.30	75	200
7.	Chloride	mg/L	35.80	250	1000
8.	Sulphate	mg/L	45.6	200	400
9.	Nitrate	mg/L	4.1	45	No Relaxation
10.	Iron	mg/L	0.25	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	18.6	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	28.5	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	7.6	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100 ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	–	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 05.09.2022

Sr. No.	Parameter	Unit	Location	As Per IS 10500:2012	
			Patwa Village	Acceptable Limit	Permissible Limit
1.	pH @ 25 ^{o}C	...	7.23	6.5 to 8.5	No Relaxation
2.	Turbidity	NTU	BQL(QL=0.1)	1	5
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	250	500	2000
4.	Total Hardness as $CaCO_3$	mg/L	151.3	200	600
5.	Alkalinity as $CaCO_3$	mg/L	105.0	200	600
6.	Calcium as Ca	mg/L	39.5	75	200
7.	Chloride	mg/L	32.8	250	1000
8.	Sulphate	mg/L	46.2	200	400
9.	Nitrate	mg/L	4.3	45	No Relaxation
10.	Iron	mg/L	0.28	0.3	No Relaxation
11.	Fluoride	mg/L	BQL(QL=0.1)	1	1.5
12.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)	-	-
13.	Zinc (Zn)	mg/L	BQL(QL=0.02)	5	15
14.	Magnesium (Mg)	mg/L	12.8	30	100
15.	Residual Chlorine	mg/L	BQL(QL=0.05)	0.2	1
16.	Colour	Hazen	BQL(QL=1)	5	15
17.	Odour	...	Agreeable	Agreeable	Agreeable
18.	Temperature˚C	˚C	28.0	-	-
19.	Taste	...	Agreeable	Agreeable	Agreeable
20.	Phenolic Compounds	mg/L	BQL(QL=0.001)	0.001	0.002
21.	Cyanide	mg/L	BQL (QL=0.025)	0.05	No Relaxation
22.	Aluminum (Al)	mg/L	BQL (QL=0.02)	0.03	0.2
23.	Arsenic (As)	mg/L	BQL (QL=0.005)	0.01	0.05
24.	Boron (B)	mg/L	BQL (QL=0.05)	0.5	1
25.	Cadmium (Cd)	mg/L	BQL (QL=0.002)	0.003	No Relaxation
26.	Copper (Cu)	mg/L	BQL (QL=0.02)	0.05	1.5
27.	Lead (Pb)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
28.	Manganese (Mn)	mg/L	BQL (QL=0.05)	0.1	0.3
29.	Mercury (Hg)	mg/L	BQL (QL=0.0005)	0.001	No Relaxation
30.	Selenium (Se)	mg/L	BQL (QL=0.005)	0.01	No Relaxation
31.	Silica (Si)	mg/L	8.0	NS	NS
32.	Detergent	mg/L	BQL(QL=0.05)	0.2	1
33.	E.Coli (MPN/100 ml)	MPN/100ml	Absent	Absent	Absent
34.	Total Coliform	MPN/100 mL	Absent	-	Absent

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

Date of Sampling: 05.09.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Plant)
1.	pH at 25 °C	--	7.45
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	52
4.	Total Dissolved Solids	mg/L	410
5.	BOD at 27°C – 3 Days	mg/L	22.3
6.	Chemical Oxygen Demand	mg/L	85
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	96
9.	Sulphate as SO_4	mg/L	135.8
10.	Ammonical Nitrogen as NH_3	mg/L	3.42
11.	Total Kjheldal Nitrogen as TKN	mg/L	10.3
12.	Dissolved Phosphate	mg/L	1.6
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 05.09.2022

Sr. No.	Parameter	Unit	Location STP Outlet (Township)
1.	pH at 25 °C	--	7.41
2.	Colour	CU	BQL(QL=1)
3.	Total Suspended Solids	mg/L	61
4.	Total Dissolved Solids	mg/L	406
5.	BOD at 27°C – 3 Days	mg/L	16.0
6.	Chemical Oxygen Demand	mg/L	65
7.	Oil & Grease	mg/L	BQL(QL=2)
8.	Chloride	mg/L	91
9.	Sulphate as SO_4	mg/L	160.3
10.	Ammonical Nitrogen as NH_3	mg/L	4.32
11.	Total Kjheldal Nitrogen as TKN	mg/L	15.6
12.	Dissolved Phosphate	mg/L	2.02
13.	Aluminum (Al)	mg/L	BQL(QL=0.1)
14.	Arsenic (As)	mg/L	BQL(QL=0.02)
15.	Boron (B)	mg/L	BQL(QL=0.1)
16.	Cadmium (Cd)	mg/L	BQL(QL=0.01)
17.	Copper (Cu)	mg/L	BQL(QL=0.1)
18.	Lead (Pb)	mg/L	BQL(QL=0.02)
19.	Manganese (Mn)	mg/L	BQL(QL=0.1)
20.	Mercury (Hg)	mg/L	BQL(QL=0.001)

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

Date of Sampling: 06.09.2022

Sr. No.	Parameter	Unit	Location Ganga river
1.	pH @ 25 ^{o}C	...	7.16
2.	Turbidity	NTU	1.2
3.	Total Dissolved Solids @ 180 ^{0}C	mg/L	206
4.	Total Suspended Solids	mg/L	41
5.	Dissolved Oxygen	mg/L	5.4
6.	Hexavalent Chromium as Cr^{6+}	mg/L	BQL(QL=0.01)
7.	Chloride	mg/L	32.4
8.	Sulphate	mg/L	31.3
9.	Nitrate	mg/L	4.2
10.	Fluoride	mg/L	0.35
11.	BOD at 27°C – 3 Days	mg/L	5.8
12.	Chemical Oxygen Demand	mg/L	12.4
13.	Residual Chlorine	mg/L	BQL(QL=0.05)
14.	Colour	Hazen	BQL(QL=1)
15.	Odour	...	Agreeable
16.	Temperature˚C	˚C	30.1
17.	Taste	...	Agreeable
18.	Chromium	mg/L	BQL(QL=0.02)
19.	Iron	mg/L	0.17
20.	Copper	mg/L	BQL(QL=0.02)
21.	Zinc	mg/L	BQL(QL=0.02)
22.	Cadmium	mg/L	BQL(QL=0.002)
23.	Lead	mg/L	BQL(QL=0.005)
24.	Arsenic	mg/L	BQL(QL=0.005)
25.	Silica(Si)	mg/L	7.0

The above tabulated results reveal that the concentration of the target analyte is found to be within the prescribed limits.

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

Note: NS – Not Specified

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION:OPEN WELL **MONTH: July'22**

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	3.6	1.6	2.15	-
MALI VILLAGE	0.50	6.20	5.7	4.65	105	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	4.65	1.05	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	4.7	1.1	2.5	-

All values are in meter(m)

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION:OPEN WELL **MONTH: August'22**

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	3.2	2.0	2.15	-
MALI VILLAGE	0.50	6.20	5.7	4.25	1.45	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	4.2	1.5	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	4.2	1.6	2.5	-

All values are in meter(m)

ADANI POWER (JHARKHAND) LIMITED

2X800MW ULTRA SUPER CRITICAL THERMAL POWER PLANT

GODDA JHARKHAND

GROUND WATER TABLE

LOCATION:OPEN WELL **MONTH: September'22**

LOCATION NAME	PLINTH HEIGHT	TOTAL DEPTH OF WELL FROM R.L	TOTAL DEPTH OF WELL FROM G.L	DEPTH OF WATER TABLE FROM G.L	WATER COLUMN	DIA- MATER	REMARK
MOTIA VILLAGE	0.70	5.90	5.2	1.7	3.5	2.15	-
MALI VILLAGE	0.50	6.20	5.7	2.7	3.0	2.25	-
NAYABD VILLAGE	0.65	6.35	5.7	2.75	2.95	1.96	-
PATWA VILLAGE	0.70	6.50	5.8	2.75	3.05	2.5	-

All values are in meter(m)

SECTION 10: NOISE LEVEL MONITORING

To know the background ambient noise level at the project and surrounding environment, noise level were measured at all the ambient air monitoring stations for baseline study.

The Day time & Night time average noise level data are given in tabular formats as well as in graphical form for easy interpretation.

Here, the day time means time from 06:00 am to 10:00 pm & night time means time from 10:00 pm to 06:00 am.

$$Le = \frac{10\ \mathrm{Log10}\ (t1 \times 10^{\frac{L1}{10}} + t2 \times 10^{\frac{L2}{10}} + t3 \times 10^{\frac{L3}{10}} + ..)}{T}$$

Where Leq = Equivalent continuous noise level (dB) (A)
t1 = time at L1 (Hours)
t2 = time at L2 (Hours)
L1 = sound pressure level dB (A) at time 1
T = total time over which the Leq is required (Hours)

(N1) At Motia Village

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	14.07.2022	53.4	38.5	48.3	41.3	32.1	36.8
2	11.08.2022	52.8	40.1	48.4	40.0	31.7	35.4
3	19.09.2022	54.0	39.8	48.7	42.0	30.8	37.6

(N2) At Mali Village

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	14.07.2022	52.5	40.6	48.2	42.5	33.1	38.7
2	11.08.2022	54.2	39.4	49.8	41.9	32.4	38.2
3	20.09.2022	53.7	40.3	48.6	40.4	33.5	37.9

(N3) At Nayabad Village

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	15.07.2022	54.6	40.1	49.3	41.6	31.7	37.3
2	12.08.2022	53.8	41.2	49.0	41.8	33.3	37.1
3	20.09.2022	54.2	40.0	48.1	43.1	32.8	37.8

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Residential Area		55	55	55	45	45	45
1	15.07.2022	54.0	40.3	49.7	39.7	31.2	36.6
2	12.08.2022	53.1	39.7	48.9	42.1	32.5	38.3
3	19.09.2022	53.4	41.7	49.7	40.3	33.1	38.2

(N5) Nr. Adani Office

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	18.07.2022	54.8	42.7	48.1	43.1	32.5	37.4
2	15.08.2022	53.8	40.0	50.3	42.3	33.2	37.2
3	22.09.2022	54.1	41.2	52.2	44.1	32.0	37.9

(N6) Nr. BTG Area (U/C)

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	18.07.2022	73.1	55.2	64.1	58.4	465.1	52.9
2	15.08.2022	71.2	56.3	65.2	55.9	44.2	50.6
3	21.09.2022	74.4	55.1	66.4	57.2	46.6	51.4

(N7) Nr. CT Area

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	18.07.2022	72.6	55.9	65.8	57.1	44.4	51.0
2	16.08.2022	71.3	56.0	65.3	55.1	43.3	50.1
3	21.09.2022	73.5	54.7	65.9	56.1	44.8	51.6

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	19.07.2022	73.5	50.1	65.9	56.1	46.5	53.5
2	16.08.2022	72.1	48.1	64.3	55.5	46.1	52.2
3	22.09.2022	73.3	51.2	64.8	54.1	47.6	51.6

(N9) Nr. STP (In township)

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	20.07.2022	55.4	42.1	49.2	41.8	33.2	37.1
2	17.08.2022	54.3	40.2	48.6	40.8	31.2	36.7
3	23.09.2022	53.6	41.6	47.6	42.7	32.6	38.1

(N10) Nr. Temple (In township)

Sr. No.	Starting Date	Max Day Time	Min Day Time	Leq (Day)	Max Night Time	Min Night Time	Leq (Night)
	Unit	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
CPCB Standard for Industrial Area		75	75	75	70	70	70
1	20.07.2022	55.1	41.7	48.8	40.5	31.8	36.5
2	17.08.2022	53.7	42.0	48.4	41.7	32.2	37.5
3	23.09.2022	55.5	40.4	48.6	43.2	33.3	38.4

From above tabulated results it can be concluded that the noise level was within the prescribed limits throughout the monitoring period at the stated locations.

Note: Environmental Quality Monitoring Report for the Month of Sep'22 has been collected by Envirotech East Pvt. Limited.

Annexure - II

HALF YEARLY REPORT

(APRIL 2022- SEPTEMBER 2022)

INTRODUCTION

The Adani Foundation, the CSR arm of Adani Group of Companies, executes Corporate Social Responsibility projects for Thermal Power Plant, Motia in four main core areas– Education, Community Health, Sustainable Livelihood Development and Community Infrastructure Development. With a people centric approach, the Foundation responds towards the emerging needs at the grass roots level aligning its activities with the Sustainable Development Goals (SDGs) with a vision to end poverty, protect and preserve planet and also, bring solidarity and peace among all individuals and society. Adani Foundation aims to walk with the communities, empower people to look ahead by making the right choices and securing a bright and beautiful future, together. Gyanodaya program swiftly met the needs of spreading the light of education via electronic & digital media which facilitated over 80,000 students to continue building their career in a new normal. Similarly, it was endeavoured to uplift and enhance the standard of living of rural dwellers through Sustainable Livelihood Development Programme and several Health & Rural infrastructure interventions to upgrade the infrastructure of education and health institutions.

In this half financial year (2022-23), Adani's CSR intervention extends to Godda and Sahebganj districts of Jharkhand state covering 325 villages of Core, Periphery, Railway Siding and Pipeline area. Apart from benefitting and engaging communities from our intervention areas, many of CSR activities were conducted in Godda town too for establishing Adani Foundation as a brand among the intellectuals of the society. Total population of Godda district is 13.13 lakhs, out of which population of our intervention villages is 80000 approximately. We have been able to benefit 5 lakhs people directly and 10.38 lakhs people indirectly across the stretch of 91 Kms ranged from Godda district to Sahebganj district passing through more than hundreds of projects affected villages by organizing various community development activities in Education, Community Health, Sustainable Livelihood and Rural Infrastructure Development verticals.

The robust team of Adani Foundation at Jharkhand comprises of dedicated professionals including Unit CSR Head, Project Officers, Assistant Suposhan Officer and a Medical team comprises of a doctor and four Para medicos.

The progress of CSR projects/interventions from **April 2022 to September 2022** is described in detail as under:

DETAILED DESCRIPTION OF CSR ACTIVITIES

EDUCATION & RURAL SPORTS

Gyan Jyoti Tuition Programme (Providing Quality Education in Society)

1. **'Apna School' initiative to provide coaching classes for students:** This initiative is operational in villages falling under poor socio- economic condition namely Nayabad, Gangta, Baliakitta, Parasi, Amrakanoli, Kauribihar, Kaithartikar of core, and railway line area and Jiyajori, Maniamore, and Baniadih village of pipeline area to provide coaching classes to the students till 8th standard and provide access to formal education to the poor and enthusiastic children.

   The total number of students getting benefitted is **537**. The local teachers from the community have been engaged in the teaching. This initiative has led to improvement in learning and education of children. This coaching class is also useful to interact with the community.

   The initiative has mainly been taken in area with low literacy level i.e., below 50% literacy among Santhal and Yadav Community (Scheduled Tribes and Other Backward Classes).

SN	PROGRAM LOCATION	BLOCK	CLASS	STUDENTS
1	Nayabad	Godda	I to VIII	17
2	Gangta	Godda	I to V	14
3	Baliakitta	Podaiyahat	I to V	28
4	Parasi	Podaiyahat	I to V	28
5	Amrakanoli	Poreyahat	I to V	53
6	Kauribihar	Podaiyahat	I to V	49
7	Kaithatikar	Podaiyahat	I to V	20
8	UMS Jiyajori	Mahagama	I to V	12
	UMS Jiyajori	Mahagama	VI to VIII	18
9	Karnu (Maniamore)	Mahagama	III to VI	41
10	MS Baniadih	Thakur Gangti	V to VIII	257
	TOTAL			**537**

2. **Adani Gyan Jyoti Yojana (Group 30): -** Education plays a vital role in development of society economically, socially, and financially, it also helps to them strengthen, so Adani Gyan Jyoti Yojana was initiated in Motia Village in which 30 students each of 8th, 9th & 10th standard studies at the centre for their concept building. In this year, 110 children are enrolled from class 3rd standard till 10th standard in coaching program in core villages of two-gram panchayat Motia and Sondiha and they are able to prepare for their upcoming examination through concept building and remedial classes provided in Gyan Jyoti Kendra

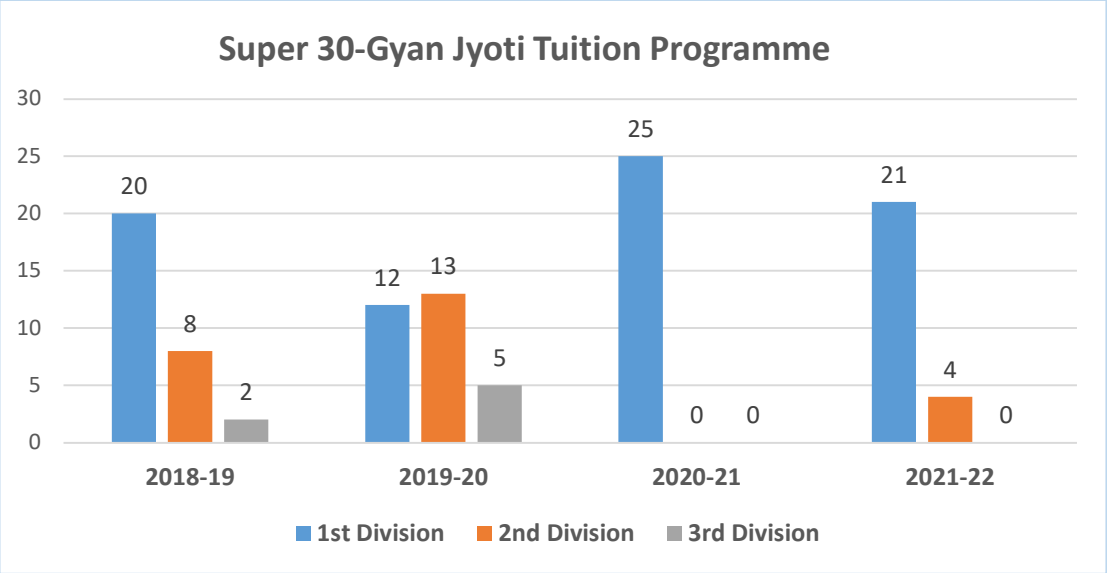
SN	PROGRAM LOCATION	BLOCK	CLASS	STUDENTS
1	Sondiha	Podaiyahat	III to X	60
2	Motia	Godda	IX to X	50
	TOTAL			**110**

Programme Outcome

- **Enrollment in Super 30- Class 10th:** During the last year 2021-22, total 50 students were screened after doing assessment of their performance based on their abilities and awareness after taking examination. Out of which, 25 students of Class 10th were selected and enrolled in Gyan Jyoti Tuition Programme- Super 30 from Motia village.

- **Academic Performance (Session 2021-22):** The students learning under Super 30 program in Gyan Jyoti Kendra, Motia have performed extremely well and passed with high grades of Academic Session 2021-22. The students succeeded with improved marks and passed with flying colours in their 10th board examination. All 25 students have passed the exam **(100% passing percent). 7 students** have passed with **distinction marks above 75%.** Out of total 25 students, 21 (84%) students have passed the examination with **1st division marks** and 4 (16%) students with second division marks.

Super 30- Class 10th Results- Gyan Jyoti Tuition Programme								
Academic Session	**Gyan Jyoti Kendra**	**Students**			**Students**			**Overall Passing %**
		Enrolled	**Appeared**	**Passed**	**1st Division**	**2nd Division**	**3rd Division**	
2018-19	Motia	30	30	30	20	8	2	**100**
2019-20	Motia	30	30	30	12	13	5	**100**
2020-21	Motia	25	25	25	25	0	0	**100**
2021-22	Motia	25	25	25	21	4	0	**100**



3.Gyanodaya Project: **GYANODAYA, 'Mera Mobile, Mera Vidyalaya'**, a step towards enlightening the human lives', was launched by Adani Foundation in partnership with District Administration in August 2018 to promote e-learning through Smart Classes in Middle and Higher Secondary Government Schools for students of 6^{th}-12^{th} standard of Godda district. Gyanodaya project has abled to create its learning space and improved the diverse spectrum of education through digital learning in **316 Govt. Schools** with its outreach in more than **230 remote and untapped villages** of **9 blocks** of Godda district of Jharkhand.

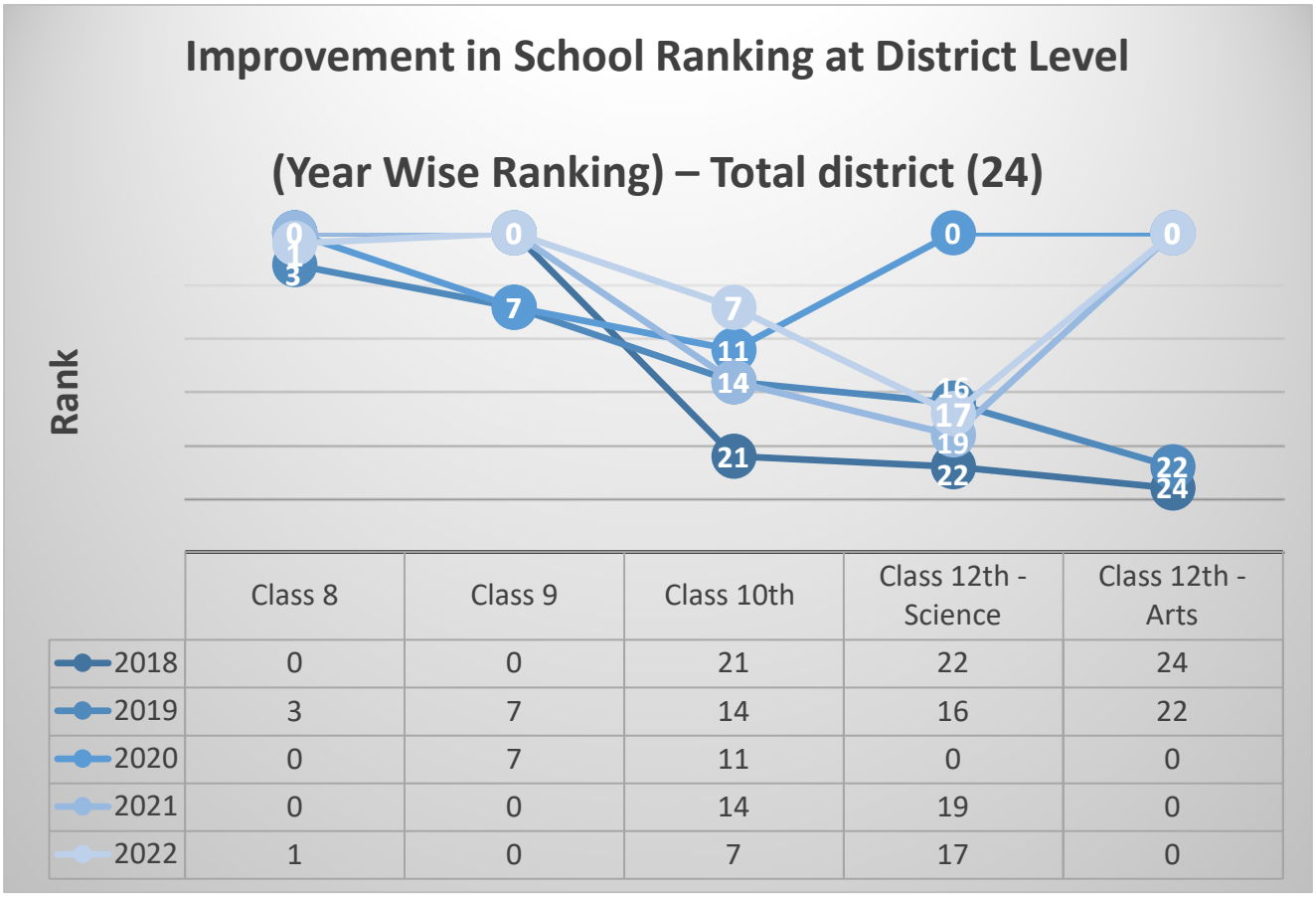
In the tenure of less than 4.3 years, the program has leveraged its services facilitated by over **1872 skilled teachers** and benefitting more than **80,000 students directly**. Transformation in their lives has been observed through multiple benefits of digital learning such as - digital skills, decision making capabilities, visual learning, cultural awareness, improved academic performance and creativity. Gyanodaya model is filling the gap of teachers' shortage by enabling students to access the smart classes with a simple touch of TV remote.

Outreach of Gyanodaya: Gyanodaya program has created its impact in **167** Middle Schools**,** **109** High Schools, **10** Plus 2 Schools, **17** KGBVs, **7** Welfare Association Schools, and **6** JEE/NEET Centres, respectively.

Block	Middle schools	High Schools	Plus2 Schools	KGBVs	Welfares	JEE/NEET Centres	Aggregate
Godda	52	26	3	2	0	3	86
Sunderpahari	3	5	0	2	3	NA	13
Podaiyahat	30	16	3	2	0	NA	51
Pathargama	32	7	1	2	0	1	43
Basantrai	14	5	0	1	0	NA	20
Mahagama	13	17	2	2	0	1	35
Boarijore	5	10	0	2	4	1	22
Mehrama	10	12	0	2	0	NA	24
Thakurgangti	8	11	1	2	0	NA	22
Total	**167**	**109**	**10**	**17**	**7**	**6**	**316**

Programme Outcome

1. **Improvement in School Ranking at District Level:** The magnificent attempt of Gyanodaya program has improved the education system of Godda district and created an ecosystem of education by tapping up the government schools and strengthening the institutions as model school through operation of Digital learning program. Similarly, the intervention has enhanced the learning outcomes in the district significantly as compared to the baseline statistics of education since year 2018. Gyanodaya- E- Learning program has left remarkable footprint with significant increase in the school rankings at district level in the year 2022 as compared to preceding four consecutive years' performance.



	Class 8	Class 9	Class 10th	Class 12th - Science	Class 12th - Arts
2018	0	0	21	22	24
2019	3	7	14	16	22
2020	0	7	11	0	0
2021	0	0	14	19	0
2022	1	0	7	17	0

** Source- Education department, Godda*
**No Examination held of Class 8th and Class 9th in 2018*
**No Examination held of Class 8th due to COVID 19 in 2020 & 2021*

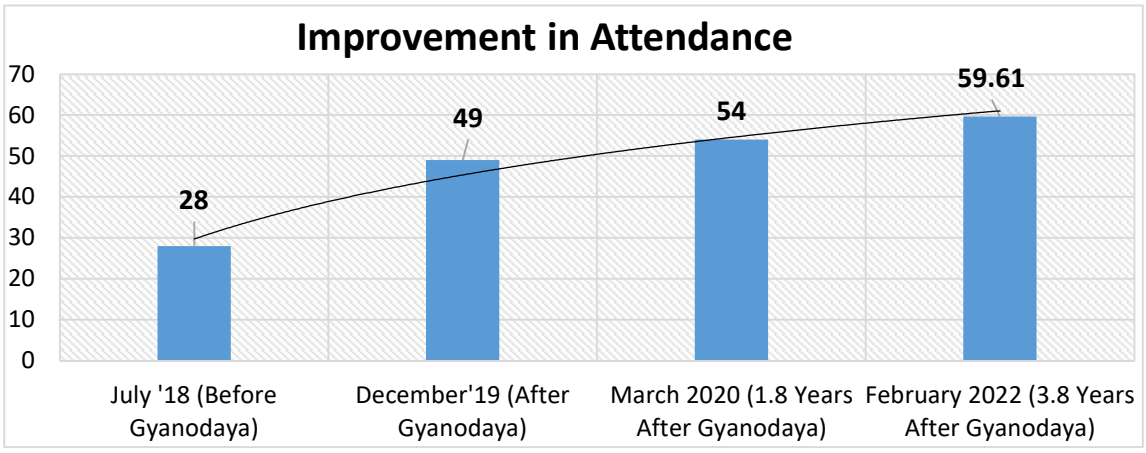
a) **Class 8th** stands at **1st rank (2022)** as compared to **3rd** rank (2019) among 24 districts of Jharkhand state.
b) Class 9th standard upholds **7th** rank position in the year 2019 & **2020** as compared to **21st position** in the year 2018-19
c) The ranking position of Class 10th has improved from 21st rank (2018) to 14th rank (2019) to **11th** rank (2020) to **14th** rank (2021) to a significant achievement by securing **7th rank position in the year 2022.**
d) 22nd rank (2018) to 16th rank **(2019)** to 19th rank (2021) **to 17th rank in 2022** in class 12th (Science) and
e) 24th rank (2018) to **22nd** rank **(2019)** in class 12th (Arts)

2. **Increase in Attendance Rate of Students:** The visually appealing, easy-to-grasp and retainable concepts covered in the study materials has led to **198.05% increase** in the class-wise attendance comparing the figures of past years **(July 18)** from **20% low attendance rate** to a

rise in 54% attendance rate in March 2020 to **an exemplary growth to 59.61% in February 2022** despite of unprecedented circumstances due to second & third wave of COVID 19 and closure of schools due to Lockdown.

A significant reduction in dependency on tuition classes has been observed across the blocks which will thereby increase the faith of students and parents likewise on government schools. The growth in the class-wise attendance has been a result of making learning engaged and interactive using conceptualized and animated concept videos being taught under the Gyanodaya model.

Improvement in Attendance after implementation of Gyanodaya		
July-18 (Before Gyanodaya)	**March 2020 (1.8 Years After Gyanodaya)**	**February 2022 (3.8 Years After Gyanodaya)**
20-30%	54%	59.61

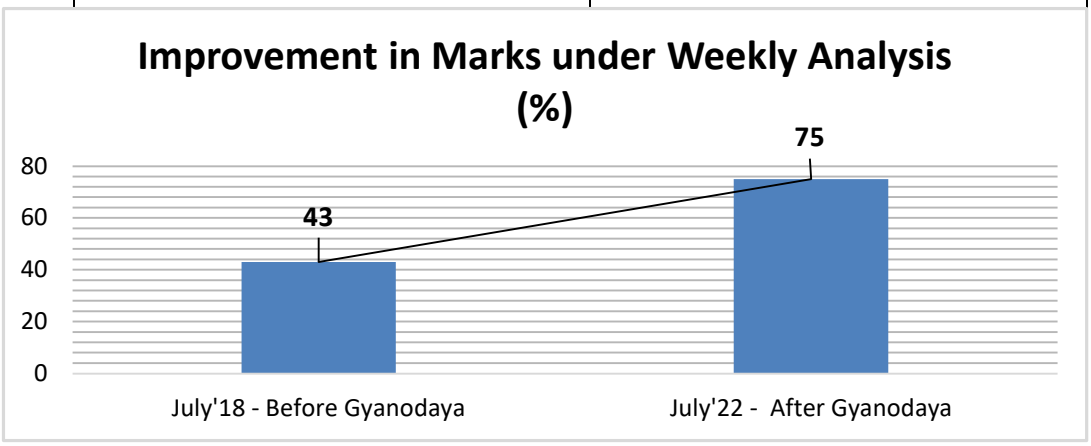


3. **Improvement in Marks of Students:** Prior to educational initiative of Gyanodaya, the students used to fall under 30-40% marks bracket which has now shifted to **70-75%** marks bracket on an average due to better understanding and retention of basic concepts and a daily quiz after every video.

Impact of Gyanodaya project on Results is as given below:

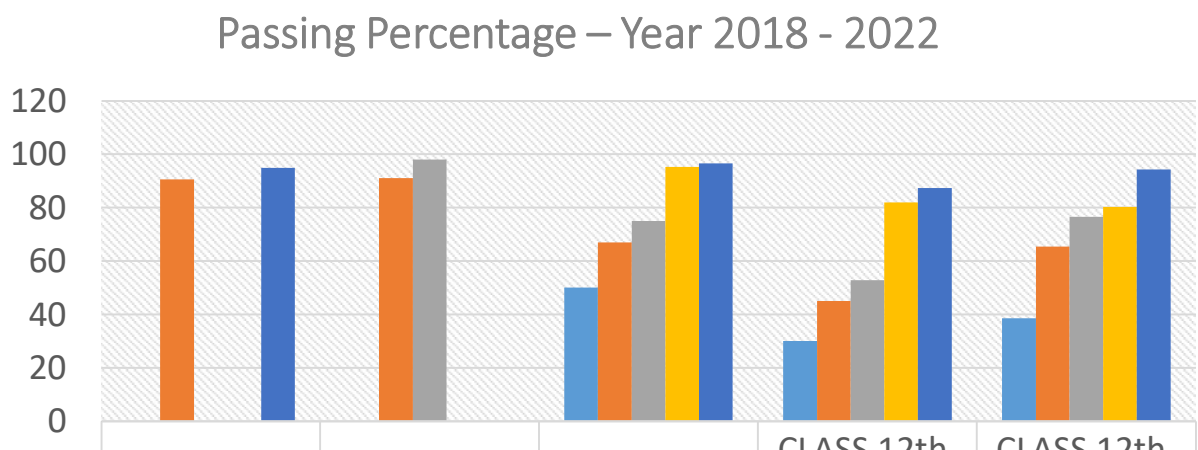
July-18 (Before Gyanodaya)	**July-22 (After Gyanodaya)**
Improvement in Marks under Weekly Analysis	

30% - 40%	70-75 %



4. **Increase in Passing Percentages:** With the advent of Gyanodaya, the passing percentage of students of Class 8th, Class 10th and Class 12th has increased progressively in the year 2022 as compared to previous four consecutive years 2021, 2020, 2019 and 2018.

**Year Wise Passing %*



	Class 8	CLASS 9th	CLASS 10th	CLASS 12th (Science)	CLASS 12th (Arts)
2018	0	0	50	30	38.57
2019	90.58	91	67	45	65.42
2020	0	98	75	52.81	76.52
2021	0	0	95.26	81.86	80.28
2022	94.80	0	96.59	87.27	94.23

i. **Class 10th:** The passing percentage of Class 10th students has increased in **2022 (96.59%)** as compared to status of 2021 (95.26%), 2020 (75%), 2019 (67%) & 2018 (50%).

ii. **Class 12th (Science):** The passing % of Intermediate students has improved significantly as compared to figures of 30% in the year 2018, 45% (2019), 52.81% (2020), 81.86% (2021) to major improvement of **87.27% (2022)** in Intermediate (Science)

iii. **Class 12th (Arts):** The passing % has also improved from 38.57% (2018) to 65.42% (2019) to 76.52% (2020) to 80.28% (2021) **to 94.23% (2022)** in Intermediate (Arts) Stream.

iv. **Class 9th:** Passing percentage increased from 91% (2019) to **98%** in the year **2020**

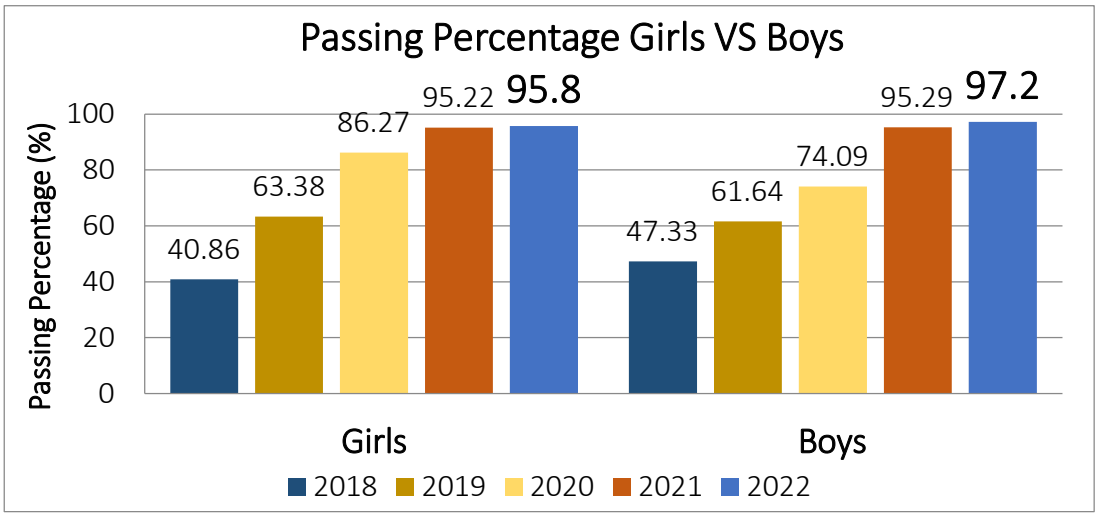
v. Similarly, the passing percentage of **JAC 8th Board** students has improved from **90.58%** in the year 2019 **to 94.80% in the year 2022**.

Class-wise Improvement in Passing Percentages					
Academic Year	**Class 8th**	**Class 9th**	**Class 10th**	**Class 12th Science**	**Class 12th Arts**
2017-2018	0	0	50	30	38.57
2018-2019	90.58	91	67	45	65.42
2019-2020	NA	98	75	52.81	76.52
2020-2021	NA	NA	95.25	81.95	80.28
% Increase	NA	**7.69**	**90.5**	**173.2**	**108.1**

**Exams were not conducted of class 8th & 9th in 2018*

***% increase figure from 2018 to 2021*

5. **Passing Percentages of Girls Vs Boys:** The graph presents a sharp increase in the passing percentage of girls and boys as compared with last 4 years. In the session 2017-18, girls passing percent was 40.86% which increases to **95.8% in the session 2021-22**. Simultaneously, boys passing percentage in the session 2017-18 was 47.33% which increases to **97.2% in the session 2021-22.**



Source: Education department of Godda district

❑ Gyanodaya Initiatives during COVID 19 Epidemic

- **Gyanodaya YouTube Channel: Gyanodaya YouTube Live class** for the students studying in class 10th and 12th. Live class benefits can be availed by the students of any district of Jharkhand state. The syllabus of live class is based on Jharkhand Board. So far, **84,026 views from April 2022 to September 2022.**

❑ **Delivery of Gyanodaya Equipment & Handholding to New Gyanodaya Schools:** During Half Yearly (April- Sep'22) Gyanodaya Smart Class equipment was delivered in 26 Schools of 5 blocks of Godda district namely, Godda, Basantrai, Boarijore, Pathargama, and Mehrama. A detailed Handholding session was also conducted in each new Gyanodaya school to operate Smart Classes properly. On the day of handholding, Gyanodaya team makes the teachers and students familiar with technology.

In addition, teachers are being trained for the proper use of the content to ensure that the students can utilize it in the best possible manner. A nodal teacher is appointed with the help of Headmaster of the school. With help of other teacher at the school, nodal teacher keeps the record of various activities like total class conducted, student's attendance, daily test, and analysis test marks. The parents of the students are also involved, and they are made aware about the Gyanodaya Smart Class and the benefits of attending the Gyanodaya Class for their children.

- **Parents Teacher Meeting:** Gyanodaya team participated and conducted PTMs in all 9 blocks and discussed the importance and value of education and made them aware about Gyanodaya simulation and how the initiative is helping and will be helpful for their children. The Parents were also introduced to the Gyanodaya class. More than **250 Parents had joined the session.**

- **Career counselling** session for students of class 10th and 12th were organized by Gyanodaya team in all 9 KGBV's of Godda district and 20 High School of Godda since April 2022. The main objective of the session was to help students choose an appropriate career based on their interests, skills, and abilities. A total of **1500 children** took advantage of career counseling. Most of the female students have to become nurses and police and male students have to take jobs after doing ITI. During the career counseling, some of the best questions were asked by the students, whose answer, and the way to achieve that goal was told by Gyanodaya team.

- **Back to School Campaign:** Gyanodaya Godda is organizing "Back to School" campaign under the aegis of District Administration, Godda and Adani Foundation. Aimed at retention and enrollment of dropouts, immigrants and not yet enrolled children and children with special needs. Gyanodaya team visited village Karudih, Jamua, Indrachak, Pipra etc. and met parents and students and raised awareness about the importance of going to school. **Total 4 Villages & 80 HHs covered and interacted with 120 students.**

GUEST VISIT

- **Azim Premji Foundation:** Prof. Shanta Kumar and Prof. Subrata Mishra from Azim Premji Foundation visited Godda in July 2022 to do assessment on Gyanodaya Project and found it as a great tool that can Empower Teachers and Improve Educational Achievements.

- **Adani Head Office team visit:** Gyanodaya Godda program was introduced to the visiting team from Adani HO to Adani office at Godda in September 2022. The team visited KGBV Pathargama and HS Motia, while visiting team found a very positive environment in the Gyanodaya classroom and very energetic students taking benefits of Gyanodaya class. Team also interacted with the school teachers, mukhiyas and local people. Overall, it was a great experience and a matter of honor for them that Gyanodaya is providing quality education in the remotest areas of Godda, Jharkhand.

Showcasing Gyanodaya in Digital India Week

Digital India Week was organized by **Ministry of Electronics and Information Technology (MeitY) from July 1-7, 2022**, to celebrate India's digital transformation journey, at the Pragati Maidan, New Delhi. Digital India Day on July 1, 2022 was graced by Hon'ble Prime Minster with participation of Tech Startups and Digital India beneficiaries from all over India.

The aim of Digital India Week was to celebrate and showcase India's technological prowess to the world, explore collaboration and business opportunities for Tech Startups and inspire the NextGen citizens by presenting a techade of opportunities for them. The over- arching theme for Digital India week was **"Digital India: Catalyzing New India's Techade".** Digital Expo- 'Digital Mela' was setup from July 1-3 at the Pragati Maidan Showcasing the best of eGov and digital solutions from Startups, Central and State Governments, Academia, and Industry Partners.

The grand exhibition had pavilions for emerging technologies such as AI, Blockchain, AR/VR etc. In addition, four-day training/orientation program- Digital India Knowledge Exchange: Showcasing India Stack and India's Digital Products & Services was organized in virtual mode from July 4-7, 2022. The platform brought together practitioners and Digital Transformation leaders, who shared their experience of implementing transformational projects at population scale.

The stellar role of Adani Foundation in "Gyanodaya eLearning Platform" project was selected to participate and showcase the milestones on Digital India Day event from **4th to 9th July 2022**.

- **Celebration of International Yoga Day 2022:** International Yoga Day was celebrated on 21st June 2022 at Officer Club, Shantivihar Township and community level in core and railway line villages. Over 200 members including employees and their family members had attended the yoga workshop organized at APJL site. Similarly, more than 100 students of Gyan Jyoti Tuition Programme had actively participated during the occasion and inculcated various Yoga asanas and their benefits to keep healthy and understand the importance of Yoga in life.

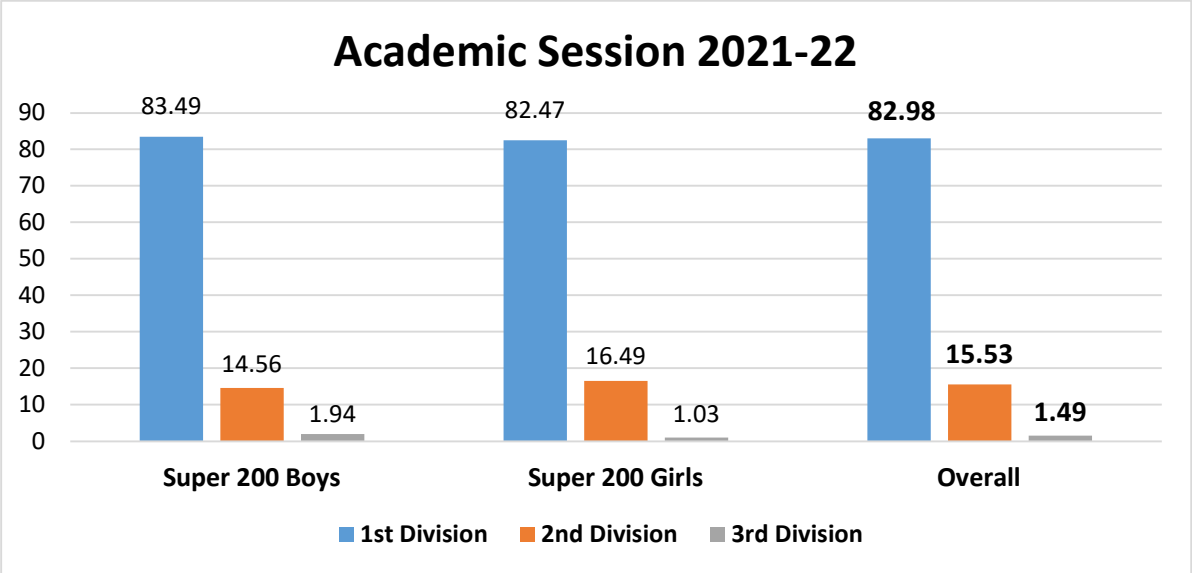
4. Super 200 Program: Online Super 200 class was operational for the preparation of 10th board examination of **200 meritorious students (103 boys and 97 girls)** of Godda District studying in class 10th. Online Classes was conducted under Gyanodaya program facilitated by **20+ best teachers** of Godda. The students got the opportunity to join online live class, and availed the facilities like daily assessment, one to one interaction with teachers, study materials etc.

Performance of Students of Academic Session 2021-2022

- **Super 200 Girls:** During the Academic Session, 2021-22, 97 girls had appeared in 10th Board exams. Out of which, **80 girls (82.47%)** secured **1st division marks**, 16 students (16.49%) got 2nd division marks, and 1 student got 3rd division marks.

- **Super 200 Boys:** 103 boys had appeared in the board exam, out of which **86 boys (83.49%)** of Super 200 programme got **1st division marks**, 15 students (14.56%) got 2nd division marks, while 2 students fallen under 3rd division. District Administration, District Education Officer (DEO) and whole team of Gyanodaya, Godda, Super 200 Program and Adani Foundation were applauded for their endeavour in changing the scenario of education in Godda district.

Academic Session 21-22 (Passing Results in %)							
Super 200 Students	**Total Appeared**	**1st Division**		**2nd Division**		**3rd Division**	
		Students	**%**	**Students**	**%**	**Students**	**%**
Super 200 Boys	103	86	83.49	15	14.56	2	1.94
Super 200 Girls	97	80	82.47	16	16.49	1	1.03
Overall	**200**	**166**	**82.98**	**31**	**15.53**	**3**	**1.49**



5. Coaching Program for Jawahar Navodaya Vidyalaya (JNV)- Class 6 Entrance Examination, an initiative of Utthan program of Adani Foundation was begun in January 2020 with an objective to address educational needs of poorer, rural, and tribal children, provide opportunities to bring them at par with others in the development of conducive environment and build their bright and secured career from right schooling.

Methodology Adopted

a. Identification of students studying in govt schools for securing selection from rural quota (Enrolment Policy of JNV-75% rural quota, 25% urban quota, Total number of seats -80)
b. Enrollment of students for preparation of entrance examination in coaching centres followed by registration of students for appearing in entrance examination
c. Special coaching classes by teachers (Offline mode) is conducted at different locations at village level and online access to learning materials by students (self-study) are adhered.
d. The preparation of the examination includes arrangement of learning materials, stationery items and miscellaneous items.
e. Weekly tests are conducted by teachers for evaluation of students' performance and proper follow-up of students is done for improvement area.

- **Enrollment for Session 2022-23:** Coaching Program for Jawahar Navodaya Vidyalaya (JNV)-Class 6 Entrance Examination, an initiative of Adani Foundation under Utthan program is initiated in core and pipeline area of Godda district facilitated by ten skilled Utthan Sahayaks for Academic Session 2023-24.

  The objective of the program is to address educational needs of poorer and tribal children and provide opportunities to build their bright and secured career from right schooling. The Navodaya entrance examination for session 2022-23 was conducted on 30th April 2022 in which all 147 students had appeared in the examination. This year entrance examination for Navodaya coaching program for session 2023-24 has been started in every coaching centre located in core and pipeline villages of Godda district.

- **Selection of Student in JNV Class 6:** Out of 147 students, 1 student (Sakshi Kumari from Sondiha village- Sondiha center) have cleared the examination and selected for the admission in JNV for Academic Session 2022-23.

6. School Education Sponsorship Program

Context

Jitpur coal block is in north-western part of Chuperbita Basin of Rajmahal coal field in Godda district of Jharkhand. Around, 70 % of population are PVTGs including Santhal and Paharia tribes who resides in outskirts area in rural Godda depending upon traditional culture and lifestyles for their survival. Rain fed farming, NTFPs collection, and wage labor in coal mines during drought period is their only, source of earning and substantial number of people falls under below poverty lines. Due to lack of income, illiteracy, agriculture debt; lack of awareness about their rights and basic provisions, alcoholism and superstitions enters them in vicious circle of poverty.

Also, the tribal children cannot access to basic education due to poor socio and economic condition of their families. They are rather engaged in agriculture, labor, livestock grazing, and

monotonous work of households. In times of nurturing with education and constructive environment, their childhood is lost in solitude and despair with chain of hardships and labor**.** Also, due to no availability of adequate school and school teachers, there was 100% incidence of dropout in schools.

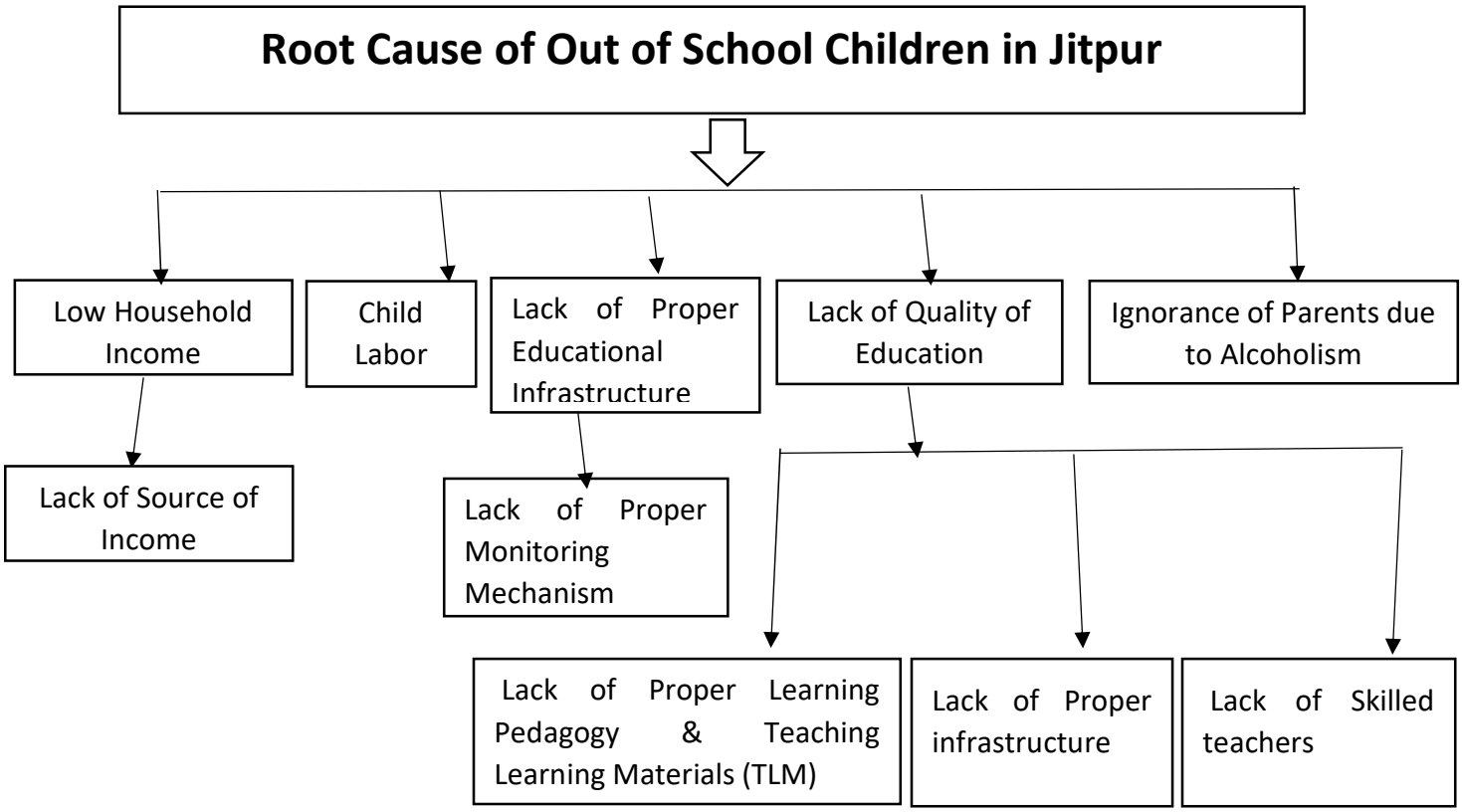


Fig. 1 Root Causes of Drop out of Children in Jitpur coal mines area

C. Intervention

To reduce the plight of families and overcome difficulties, and reduce dropout rate of tribal children, Adani Foundation team launched *School Education Sponsorship Program* in the year 2016 to provide 100% Education Support for one ward each from 275 Project Affected Families of Jitpur mines to reduce dropout by focusing on quality education and thereby regular attendance of students and ensure 100% literacy in new generation.

C.1 Services under Umbrella of Education Sponsorship Program

Under this programme, 100% Educational support is provided which comprises of (a) School Fees, (b) Books, (c) Stationary items, (d) Accommodation facilities, and (e) Fooding and Logistic facilities

i. **School Fees:** The School fees of each child are paid by Adani Foundation under Financial Support for education of children.
ii. **Accommodation facilities:** The students are permitted residential facilities on annual basis for the duration of regular academic session.
iii. **Fooding and Logistic facilities**: The fooding and conveyance facilities are also provided for the children to gain access to schools coming from remote villages. Children are provided three times nutritious and healthy food keeping in safety and security as utmost priority.
iv. **Teaching Learning Tools and Materials** such as Books, Stationary items, and related needs are taken care of each children going to school under umbrella of Education Sponsorship Program.
v. **Skilled Teachers:** Highly qualified and well-versed teachers in nutshell of teaching sector grooms' students towards their better and bright future.

D. Annual Investment on Building Bright Future of Children

The annual expenses on each child are borne by Adani Foundation. The unit cost of each child ranges from 1500 to 2000 per month i.e., investment of Rs. 24000 annual expenses on each child. During the preceding two consecutive financial years 2020-21, and 2021-22, total thirty-three lakhs for 275 tribal children was supported by Adani Foundation (Negotiated rate due to COVID 19).

Table 1 Financial Investment on Education of Children

Year	Enrolled Students	Expenses per month/ward	Total Expenditure (in Lakhs)
2016-17	155	1500	**27.90**
2017-18	275	1750	**57.75**
2018-19	275	2000	**66.00**
2019-20	275	2000	**66.00**
2020-21	275	1000	**33.00**
2021-22	275	1000	**33.00**

C.2 Triggers of Adani Foundation

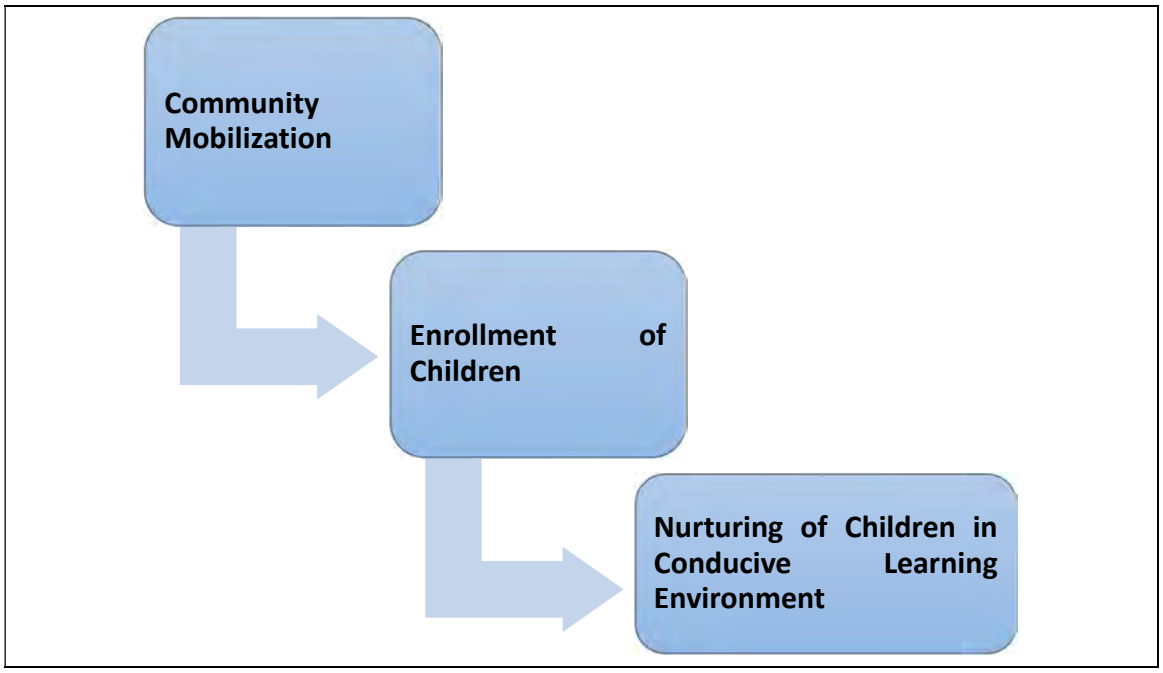


Fig. 2 Process of Intervention

I. **Community Mobilization:** The families were approached to inform, educate, and sensitize on provisions and importance of Residential School Facility under this programme. The community were mobilized with support of Village Resource Person, Community Leaders and active persons which helped disseminate knowledge regarding the services.

II. **Enrolment:** On June 2016, the parents of 155 wards were convinced in each family to enrol their children in educational institutions who were further, admitted in reputed private schools fulfilling all amenities (Table 3). In the first year, it was challenging to retain the enrolled students and attend regular classes, AF team put dire efforts to stabilize and continue the regular course.

Table 2 VILLAGE WISE ENROLLED CHILDREN FROM PROJECT AFFECTED FAMILIES (PAF)

SN	Village	Enrolled (2020-21)	Total No. of Wards	Enrolled (2021-22)	Total No. of Wards
1	Dahubera	29	29	31	31
2	Pakeri	13	13	13	13
3	Dandagora	20	20	22	22
4	Dumarpalam	29	29	29	29

5	Jitpur	84	84	81	81
6	Kairajori	22	22	23	23
7	Paharpur	64	64	65	65
8	Sunder Pahari	07	07	07	07
9	Telvita	07	07	04	04
Total		**275**	**275**	**275**	**275**

Gradually, with quality learning pedagogy used by teachers and facilities provided to the students helped retain children who attended classes with their own interest, effortlessly. This resulted in streamline a greater number of children in the succeeding years with enrolment of total 275 children from 275 families in current duration (Table 2 & 3).

Table 3 YEAR WISE PROGRESS IN ENROLLMENT OF TRIBAL CHILDREN UNDER EDUCATION SPONSORSHIP PROGRAM

2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
155	275	275	275	275	275

II.1 Enrolment of Children in Schools: The children are enrolled in different Private Schools as per their interest, suitability, and convenience from respective villages. 132 students are learning in Veena Bharti Residential School, 73 students are learning in Viswa Bharti Mission School, 21 students in Nav Prabhat Mission School, and 49 students in Evergreen Bhartiya Charitable Trust (Table 4).

Table 4 School Wise Enrolled Children under Education Residential Program

SN	School	Location	No. of Students
1	Evergreen Bhartiya Charitable Trust	Tiyodih, Sunderpahari Road, Godda	49
2	Viswa Bharti Mission School	Hanuman Nagar, Pakur Road, Godda	73
3	Veena Bharti Residential School	Gunghasa, Poriyahat, Godda	132
4	Nav Prabhat Mission School	Godda	21
Total Students			**275**

II.2 Students Enrolled in Elementary, Primary and Middle Schools: The objective of mainstreaming the poorer tribal children in formal education system has been reached by admitting children in reputed and qualified Private Schools in Godda district of Jharkhand. The commitment to link the tribal children of unheard and marginalized families are fulfilled keeping assuring *"Equal Right of Education for Every Child".*

Table 5 Class Wise Students under Education Sponsorship Programme (2021-22)

SN	School/Class	Number of Students											Total
		Nursery	L.K. G	U.K. G	I	II	III	IV	V	VI	VII	VIII	
1	Evergreen Bhartiya Charitable Trust	0	0	15	18	5	4	4	3	0	0	0	**49**
2	Viswa Bharti Mission School	0	10	6	14	18	17	3	4	1	0	0	**73**
3	Veena Bharti Residential School	0	0	21	31	29	22	14	5	5	4	1	**132**
4	Nav Prabhat Mission School	0	0	6	4	11	0	0	0	0	0	0	**21**
Total		**0**	**10**	**48**	**67**	**63**	**43**	**21**	**12**	**6**	**4**	**1**	**275**

Class Wise Enrolment of Children: Out of total 275 children studying under Residential Education /Sponsorship Programme, in the year 2021-22, 10 students studied in L.K.G., 48 students in class U.K.G., 67 students in class 1, 63 students in Class 2, 43 students in class 3, 21 students in class 4, 12 students in class 5, 6 students in class 6^{th}, 4 students in class 7^{th} and 1 student studied in class 8^{th} standard (Table 5).

E. Project Outcome & Impact

i. **Reduction in Drop Out Rate & Attendance rate of students:** Dropout rate of students studying in schools sponsored by Adani Foundation for the development of children has reduced to 0%. For the last six years of intervention, since 2016-17, the program has effectively retained the 275 tribal students in schools with 100% attendance rate. In the last two consecutive years, 2020-21, & 2021-22, the program was facilitated through online coaching by teachers for students having smart phones due to COVID 19. On the other hand, the children with no access of smart phones were provided coaching and needful preparation at village level (Table 6).

Table 6 Details of Dropout & Attendance Rate of Students

SN	Academic Session	Total Students	Dropout Rate (%)	Attendance Rate (%)
1	2016-17	155	0	100
2	2017-18	275	0	100
3	2018-19	275	0	100
4	2019-20	275	0	100
5	2020-21	275	0	100
6	2021-22	275	0	100

ii. **Average Marks of Students:** The average marks scored by each student in the year **2019-20 and 2020-21** was **74.31% and 59.74%** respectively. On the other hand, the highest average mark 78.62% (2019-20), 72.30% (2020-21) and 67% (2021-22) was attained by students of Nav Prabhat Mission School. Relatively, the average marks scored by each student in the last year **2021-22** was **55.75%** (Table 7).

iii. **Overall Passing % of Students:** All 275 enrolled children under Sponsorship Programme had appeared in the examination since previous four consecutive years and all the students had passed the examination with 100% passing percentage. Their parents are no longer forcing their wards to engage them in farming and other activities. The children have also become a social agent who passes the message for development of conditions of other children living in their villages and debarring the culture of alcoholism by people in the community for betterment of their society (Table 8).

Table 7 Academic Performance of Students of Session

SN	School	Average Marks of Students (%)		
		2019-20	2020-21	2021-22
1	Evergreen Bhartiya Charitable Trust	74	43.34	46
2	Viswa Bharti Mission School	72.78	64.93	51
3	Veena Bharti Residential School	71.85	58.37	59
4	Nav Prabhat Mission School	78.62	72.30	67
Average Marks		**74.31**	**59.74**	**55.75**

Table 8 Year Wise Overall Passing % of Students

		Students	

Academic Session	Total Students	Enrolled	Appeared	Passed	Overall Passing %
2016-17	155	155	155	155	100%
2017-18	275	275	275	275	100%
2018-19	275	275	275	275	100%
2019-20	275	275	275	275	100%
2020-21	275	275	275	275	100%
2021-22	275	275	275	275	100%

iv. **Academic Performance (2021-22):** The academic performance of students in the year 2021-22 came out in range of medium to moderate range with slight improvement in marks secured by students under the category of 1st division, 2nd division and 3rd division marks. Out of total 275 children, 106 students (38.55%) achieved 1st Division marks, 84 students (30.55%) secured 2nd division marks and 85 students (30.91%) secured 3rd division marks respectively (Table 9).

Table 9 Academic Performance of Students- 2021-22

SN	SCHOOL	Total Students	1st Division (Students)		2nd Division (Students)		3rd Division (Students)	
			Number	%	Number	%	Number	%
1	Evergreen Bhartiya Charitable Trust	49	5	10.20	8	16.33	36	73.47
2	Viswa Bharti Mission School	73	16	21.92	14	19.18	43	58.90
3	Veena Bharti Residential School	132	64	48.48	62	46.97	6	4.55
4	Nav Prabhat Mission School	21	21	100.00	0	0.00	0	0.00
TOTAL		275	106	38.55	84	30.55	85	30.91

7. Education Support to Palni

- **Story of Palni Kumari:** Palni Kumari of Simdega, Jharkhand is a teenager nurtured by her only mother in family. At her minor age of 1.5 years, she lost her father. However, Palni and her mother did not lose the courage and showed remarkable resilience in dealing with the difficult situations. It is righty said, age is just a number if we envision to achieve our ambitions debarring all the obstacles and hurdles in the path.

  Her perseverance and tenacity, led to pass the class 6^{th} examination with 75% distinction marks and currently studying in 7^{th} class standard. With a dream to fly high, she aspires to become Nurse and serve the poorer people along with the responsibilities of her mother in her shoulder. Together, Palni and her mother earn their bread and butter and paying school fees by selling chickpeas at the roadside of her locality

- **Adani Foundation Support for Palni's Education:** The Chairman of Adani Group, Hon'ble, Shri Gautam Adani has taken up the Noble work by taking the responsibilities of educating Palni, girl from a small town, Simdega to fulfil her dream of becoming a Nurse. For five years of duration, Adani Foundation will discharge the duty of Educating Palni Kumari and nurture her in a healthy environment.

8. Distribution of Science Book in core villages: Adani Foundation initiated 'Science Book Distribution Drive' in 14 schools of core area namely, Middle School, Patwa Samarua (83), Middle School, Karikado (115), High School, Gumma (511), Middle School, Dumaria (248), Middle School, Kauribahiyar (281), Middle School, Motia (637), Middle School, Baksara (293), High School, Motia (329), Middle School, Basantpur (331), Middle School, Rangania (112), High School, Sondiha (243), Middle School, Parasi (274), Middle School, Birniya (257), +2 High School, Baksara (633), benefitting over **4300 students**. The objective of the program is to strengthen the educational standard and improve the quality of education among rural and poorer children by bridging the gap of learning resources and materials.

Five types of Science Book {(Vigyan Ke Prayog (Part-1), Vigyan Ke Prayog (Part-2), Vigyan Ke Prayog (Part-3), Eyes & Visual Perception and Chemistry Experiments} of 3 unit each was delivered to School Management Committees (SMCs) for making effective school libraries and enable access to variants of science books for knowledge enhancement, concept building and practical implementation of subjective knowledge of students in the fields of science and technology.

Moreover, it will motivate the rural children to actively attend the classes without failing attendance strength and making the learning more meaningful, interactive, and effective.

9. Support to Improve School Infrastructure of Middle School, Motia: Adani envisage a vision to improve the standard of education of Godda district, which is one of the aspirational districts of Jharkhand. The academic curriculum imparted to the students strengthens

the quality of education in the educational institutions. **20 Ceiling fans** has been provided to Middle School, Motia.

It will encompass upgradation of classrooms enabling space for the education of students with adequate and conducive learning environment. It will also facilitate the School Management Committee to plan and execute school development related activities for the growth and bright future of deprived and secluded rural children.

10. Support to a Poor Athlete from Jharkhand: Adani Foundation has supported **Ms. Supriti Kachhap, a National 5000 meters athlete from Jharkhand** to bridge the gap of sports materials for preparation of World Under-20 Athletics Championship 2022 held in Columbia from 2nd to 7th August 2022.

Name- Ms. Supriti Kachhap, Father- Late Ram Sewak, Mother- Balmati Devi, Village- Burhu, Block- Ghaghra, District- Gumla, State- Jharkhand.

Supriti Kachhap, a National 5000 meters athlete, hails from Burhu village of Ghaghra block of Gumla district, located in range of 95 km from Ranchi district of Jharkhand. She was born and raised in economically weak family with her 5 siblings. She lost her father (farmer from occupation) early in her life (in Maoist violence) at the age of eight months. She and her siblings are now survived by her mother, an only bread winner in the family.

She has won 14 National Tournament and 13 medals in National games so far. She has been a record breaker in past four years by making record in 3000-meter race by defeating her opponent, Ms. Sima from Himachal in just 9.46 minutes. She is qualified for Under-20 World Championship to be held in Colombia in August ’22. She gets training in Centre for Excellence, Bhopal and currently, is a part of National Camp in Patiala for Under-20 World Championship preparation.

At this point of time, she was struggling to get required sporting gear for her training. She was not getting adequate support from any source including state government. At this juncture, Adani Foundation has supported Supriti with amount in tune of Rs 50,000 for getting sports materials for preparation of her training.

11. Educational Support (Books) for Needy Children: The district administration has intervened an Education Sponsorship Programme by adopting 200 children belonging to economically backward families including tribals, scheduled castes and OBCs. Under the initiative Education learning materials and amenities will be provided for continuation and completion of their studies with good academic grades and development of personality.

At this juncture, Adani provided support with respect to Academic Books of different streams namely, Science, Arts, and Commerce during an event at Maulana Abul Kalam Aazad College,

Basantrai. Total 24 categories of Books were provided to 168 girl students of Intermediate for the betterment of their studies and learning.

12. Tablets for felicitation of Toppers 2022 of Class 10th & 12th : A Talent Award cum felicitation ceremony was organized by Adani Foundation under aegis of Gyanodaya team and District Administration on 26th August 2022 at SDO office, Godda to honour and felicitate champions (matric & intermediate toppers) of district by providing Tablets as a token of appreciation and boost the morale of 22 rank holders & meritorious students for building their bright career.

During the event, renowned dignitaries had graced and honoured the students, namely, Sh. Rituraj (I.A.S.), SDM & SDO Godda, Jharkhand, Mr. Sushil Kumar, District Education Officer (DEO), Premnandan Mandal, Social Activist, and Principal of Plus 2 School.

13.Support of Basic facilities for Strengthening Anganwadi Centre: Adani Foundation endeavor to combat malnutrition & state of hunger in particularly of children and community in more than 25 villages of core, railway line and pipeline area. The project goal includes to make Community Managed Sustainable Model of Anganwadi to ensure health & wellness and cognitive development for holistic development of 'Mother & Child' through improved infrastructure and availability of resources in Anganwadi Centres.

During September 2022, basic Anganwadi materials was provided to ICDS functionaries in **two Anganwadi centres of core area (AWC, Motia (Kahar tola) and AWC, Patwa)** including kitchen items, chairs, and Almirah with an objective to achieve the vision of Model Anganwadi and transform the state of target groups comprising of children (0-5 years), adolescents, pregnant women, lactating mother, and community with advanced tools for their holistic development. The project aims to provide a caring environment that addresses the educative, health and nutritive requirements of rural children.

SN	Month	Beneficiary Group	Material Support
1	Sep-2022	AWC, Motia (Kahar tola)	Chairs+ Almirah+ Kitchen items
2	Sep-2022	AWC, Patwa	Chairs+ Almirah+ Kitchen items

Capacity Building & Awareness Programme

1. **Students' Farewell (Class 10th)- Gyan Jyoti Tuition Programme:** Adani Foundation had organized Farewell Ceremonial for Class 10th students of Gyan Jyoti Tuition Programme- Super

30 to acknowledge and praise them for their hard work and dedication in studies and wishing good luck for their future assignments and bright career.

2. **Back to School Campaign-** Adani Foundation has triggered for bringing back the children to the school who lost/excluded/dropout from school due to COVID 19 in **13 core & railway line villages**. After the schools were closed and lockdown was imposed in the district, the students were habituated of learning through online/digital based curriculum. Back to School Campaign attempts to reinvigorate the thinking process and reform the education status by educating and mobilizing the wards and their parents to send their children to schools.

   Adani teachers have actively joined in the campaign through door-to-door household visit in core villages, informing the parents about the campaign and its objectives, listing details of students and follow-up of parents & children in regular manner. This initiative will play a major role in retention and enrolment of the students (class 1-12), students from Covid affected families, drop- out, migrated, un-enrolled and Children with Special needs.

3. **Monthly Parents-Teacher Meeting:** Monthly Parents-Teacher Meeting was organized in coaching centres of core villages to review and share status of learnings and performance of students to the parents followed by recommendation on follow-up of their wards, motivation for going to school, and coaching centres regularly. The session was also instrumental in doubt clearance and development of tools for improvement of academic performance of students.

4. **Medhavi Chhatra Samman Samaroh:** Medhavi Chhatra Samman Samaroh was celebrated at Block office, Thakurgangti managed by Rastradharma organization E.D., Thakurgangti team with participation of over 300 Guardian, Youths, Students, and community from across the block of Thakurgangti for felicitation of students in August 2022. During the event, 40 rank holders of Class 10^{th} & 12^{th} standard from Thakurgangti block of Godda district were felicitated for doing outstanding performance in fields of education.

Supporting Sports Events

1. **Sports Kit Distribution: 5 Sports kits** were distributed to 5 Sports team comprising of carrom and cricket including sports material, and cricket kit to 5 youth groups under rural youth engagement program to promote recreational activity and sports events in 4 core, and pipeline villages of Boarijor, Podaiyahat and Borio block of Godda and Sahebganj district. It helped them in regular practice and a means of recreation. The distribution of kit help youth in more engaged in constructive activity.

Sports Kit Distribution					
Particulars	**Date**	**Village**	**Block**	**Quantity**	**No. Of Team**

Carrom Kit	May 2022	Maniyamore	Boarijor	1	1
Carrom Kit	May 2022	Dakaita	Boarijor	1	1
Cricket Kit	27.09.22	Petbi	Podaiyahat	2	2
Cricket Kit	14.09.22	Dhobi Jharna (Muk Baghir Vidyalaya)	Borio	1	1
Total				**5**	**5**

2. **Sports Tournament: 7 sports tournament** including Football, Badminton, Cricket, Netball, and general sports were organized with coverage of 7 villages of core, and pipeline areas of Godda district involving children & rural youths to instill them with confidence, develop their personality and motivate them for shaping bright future and development of youths in athletes. More than **2243 players** and **4130** audiences had participated and cheered their favorite team from nearby villages, maintaining safety protocols.

Sports Tournament						
SN	**Sports**	**Date/Month/ Year**	**No of Villages/ locations**	**No. of Participants**	**No. of Players**	**Average Audience Size**
1	Badminton tournament- National Sports Day	29.08.22	1	32 teams	32	400
2	13th Senior Netball Competition, 5th Sub-Junior Netball Competition	29.08.22, 30.08.22, 31.08.22	1	10 teams	1300	1000
3	Football Tournament in Jhirli	15.09.22	1	2 teams	30	80
4	Football Tournament in Dhamani Simariya	28.09.22-29.09.22	1	16 teams	240	450
5	Cricket Tournament in Petbi	27.09.22-07.10.22	1	16 teams	176	350
6	Cricket Tournament in Deobandha	30.09.22-06.10.22	1	15 teams	165	300
7	General Sports Tournament at Gandhi Maidan, Godda	28.09.22	1	20 teams	300	1550
Total			**7**		**2243**	**4130**

COMMUNITY HEALTH PROGRAMME

Mobile Health Care Unit (MHCU)

During the **"Half Financial Year- 2022-2023 (April- September 2022)",** four Mobile Health Care Units have together catered to **30,297 patients** from the Core, Periphery, Railway line and Pipeline villages. Adani Foundation runs its own MHCU in core villages, while it has partnered with Helpage India and Wockhardt Foundation to extend primary medical services in periphery and pipeline villages respectively. All of these four MMUs provide services in the villages as per schedule through a team of a Doctor, a Pharmacist, an ANM, and a Social Protection Officer. AF supported mobile medical facilities goes a long way to ensure access of poor people to quality primary health care services at their doorstep. The services provided at doorsteps during COVID 19 has been instrumental in protecting the health of the individuals of all age group and gender.

- **Mobile Health Care Unit in Core villages:** During the Half Financial Year, April- September 2022, Adani operated Mobile Health Care Unit in core villages of TPP area have conducted medical camp along with disbursement of free medicines at 9 locations covering 13 villages along with for labourers working at Site office on daily basis to cater medical needs of the villagers at grassroots. Moreover, 24 hours emergency services were regulated from Ambulance at Site Office, Motia for treatment/hospitalization of critical patients of nearby project affected areas in concerned hospitals outside district.

  Total **6285** patients including **1909** males, **2662** females & **1714** children have been served in this year.

Patients treated by Adani Operated MHCU- Core on April-Sep 2022					
SN	**Month**	**Males**	**Females**	**Children**	**Total**
1	April	138	180	87	**405**
2	May	308	463	291	**1062**
3	June	328	535	299	**1162**
4	July	378	533	259	**1170**
5	August	310	409	298	**1017**
6	September	447	542	480	**1469**
Gross Total		**1909**	**2662**	**1714**	**6285**

- **Helpage India operated MHCU for Periphery Villages:** Helpage India operated MHCU delivered medical services in 26 periphery villages coming under buffer zone 1 and railway siding villages of Adani Power Plant. MHCU was operational at 17 sites covering 26 locations benefitting over total **9489** patients including **2901** males, **3738** females and **2850** children. Apart from sites visit, to cope up and mitigate the impact of COVID 19, Ambulance services was made available for COVID 19 cases at Godda district.

Patients treated by Helpage India MHCU on April-Sep 2022					
SN	**Month**	**Males**	**Females**	**Children**	**Total**
1	April	370	444	401	**1215**
2	May	401	472	269	**1142**
3	June	440	689	599	**1728**
4	July	496	647	625	**1768**
5	August	523	727	416	**1666**
6	September	671	759	540	**1970**
Gross Total		**2901**	**3738**	**2850**	**9489**

- **Wockhardt Foundation operated MHCU for Pipeline Villages in Godda:** Adani supported Wockhardt Foundation MHCU team commenced its operation for pipeline area in the villages of Godda district since October '18. Total **8092** patients including **2817** males, **3433** females and **1842** children in 42 villages from 4 blocks namely, Mahagama, Boarijor, Pathargama and Thakurgangti were treated and disbursed free medicines.

Patients treated by Wockhardt Foundation (Godda) MHCU on April-Sep 2022					
SN	**Month**	**Males**	**Females**	**Children**	**Total**
1	April	501	600	353	**1454**
2	May	405	431	227	**1063**
3	June	540	659	404	**1603**
4	July	403	500	182	**1085**
5	August	484	537	302	**1323**
6	September	484	706	374	**1564**
Gross Total		**2817**	**3433**	**1842**	**8092**

- **Wockhardt Foundation operated MHCU for Pipeline Villages in Sahebganj:** Adani supported Wockhardt Foundation MHCU team commenced its operation for pipeline area villages of Sahebganj district since 21st September '18. Total **6431** patients including **2227** males, **2722** females and **1482** children were treated till September'22 in 40 villages from 4 blocks viz. Mandro, Borio, Sahebganj and Taljhari (Boha village) in total 60 stoppages.

Patients treated by Wockhardt Foundation (Sahebganj) MHCU on April-Sep 2022

SN	Month	Males	Females	Children	Total
1	April	465	612	269	**1346**
2	May	356	349	206	**911**
3	June	91	133	86	**310**
4	July	314	389	186	**889**
5	August	510	588	312	**1410**
6	September	491	651	423	**1565**
Gross Total		**2227**	**2722**	**1482**	**6431**

2.Covid Sample Collection Center at Health & Wellness Center/Clinic in Motia:

The **Covid Sample Collection Center** is operational in Primary Health Center (PHC), Motia village has swiftly cope up with the need of detecting COVID 19 infection in the individual and provide instant medications and counselling to them. The Medical team has bravely come forward in shielding their community from the threat and attack of COVID virus and continued imparting and disseminating the knowledge and generating awareness about the new variants of Covid and their complexities to poor people living in remote areas. **Total Sample Collected- 17477, No. of Positive - 186, No. of Negative- 17291**

COVID Sample Collection (April 2022- September 2022)				
SN	**Month**	**Total Sample Collected**	**No. of Positive**	**No. of Negative**
1	April	**1850**	10	1840
2	May	**4165**	12	4153
3	June	**3319**	22	3297
4	July	**3023**	83	2940
5	August	**3118**	45	3073
6	September	**2002**	14	1988
	Total	**17477**	**186**	**17291**

3.Specialized Medical Camps: During Half Financial Year (2022-23), April- September 2022, Adani Foundation endeavored to cater health needs in a specific health issue of the masses amidst Epidemic outbreak by adhering to safety protocols. The Foundation strives to be a catalyst to 'Sustainable human development' and serves the deprived and marginalized human mankind and community with means of rendering appropriate services at grassroots. The triggers adopted for development encompasses health as one of a major element for holistic development of individual. Moreover, the drive aligns with **Sustainable Development Goals (SDG) 3, 'Ensure healthy lives and promote well-being for all at all ages.**

Adani Foundation has organized **54 Specialized & Mega Health Camps in several specializations namely, Ophthalmic, Paediatrics, Gynec, Cardio, Osteo, and General Physician** and delivered services in Health & Wellness Centre, Motia and other intervention villages of core, railway line and pipeline area of Godda district. Total **1104 patients** including **354 males, 540 females and 210 children from over 15 villages** were screened, treated, and provided with free medicines**.** Specialized Medical Camps was organized with an objective to provide critical and specialized health care services in villages to cater untreated illness/ medical issues concerning women/ girls and children, elders, and community for whom access to safe and standard health services remains a challenge.

Details of Specialized Medical Camps & Mega Health Camps								
SN	**Block**	**Village**	**Date**	**Specialization**	**Patients treated**			
					Male	**Female**	**Children**	**Total**
1	Godda	Health & Wellness Centre, Motia	7/4/2022	Cardio	6	7	0	**13**
2	Godda	Health & Wellness Centre, Motia	21/4/2022	Cardio	6	7	0	**13**
3	Godda	Health & Wellness Centre, Motia	13/4/2022	Pediatric	0	0	8	**8**
4	Godda	Health & Wellness Centre, Motia	27/4/2022	Pediatric	0	0	9	**9**
5	Godda	Health & Wellness Centre, Motia	9/4/2022	Osteo	3	7	3	**13**
6	Godda	Health & Wellness Centre, Motia	8/4/2022	Gynec	0	20	0	**20**
7	Godda	Health & Wellness Centre, Motia	15/4/2022	Gynec	0	13	0	**13**
8	Godda	Health & Wellness Centre, Motia	5/5/2022	Cardio- Dr. Narendra Kumar	4	6	0	**10**
9	Godda	Health & Wellness Centre, Motia	19/5/2022	Cardio- Dr. Narendra Kumar	5	6	0	**11**
10	Godda	Health & Wellness Centre, Motia	11/5/2022	Pediatric- Dr. K.N. Choudhary	0	0	11	**11**
11	Godda	Health & Wellness Centre, Motia	25/5/2022	Pediatric- Dr. K.N. Choudhary	0	0	10	**10**
12	Godda	Health & Wellness Centre, Motia	14/5/2022	Osteo- Dr. Satendra Mishra	1	0	1	**2**
13	Godda	Health & Wellness Centre, Motia	28/5/2022	Osteo- Dr. Satendra Mishra	3	7	2	**12**
14	Godda	Health & Wellness Centre, Motia	7/5/2022	Gynec- Dr. Kiran Jaiswal	0	5	0	**5**
15	Godda	Health & Wellness Centre, Motia	20/5/2022	Gynec- Dr. Kiran Jaiswal	0	7	0	**7**
16	Godda	Beldiha-Helpage	7/5/2022	General Physician	13	18	1	**32**
17	Godda	Health & Wellness Centre, Motia	2/6/2022	Cardio- Dr. Narendra Kumar	7	10	0	**17**
18	Godda	Health & Wellness Centre, Motia	16/6/2022	Cardio- Dr. Narendra Kumar	3	5	0	**8**
19	Godda	Health & Wellness Centre, Motia	15/6/2022	Pediatric- Dr. K.N. Choudhary	0	0	8	**8**

20	Godda	Health & Wellness Centre, Motia	22/6/2022	Pediatric- Dr. K.N. Choudhary	0	0	19	**19**
21	Godda	Health & Wellness Centre, Motia	11/6/2022	Osteo- Dr. Satendra Mishra	7	3	5	**15**
22	Godda	Health & Wellness Centre, Motia	23/6/2022	Osteo- Dr. Satendra Mishra	3	10	0	**13**
23	Godda	Health & Wellness Centre, Motia	3/6/2022	Gynec- Dr. Kiran Jaiswal	0	12	0	**12**
24	Godda	Health & Wellness Centre, Motia	17/6/2022	Gynec- Dr. Kiran Jaiswal	0	5	1	**6**
25	Godda	Health & Wellness Centre, Motia	4/6/2022	Dr. Sumit Kumar (Opthalmic)	4	6	0	**10**
26	Godda	Health & Wellness Centre, Motia	1/7/2022	Gynec- Dr. Kiran Jaiswal	0	3	0	**3**
27	Godda	Health & Wellness Centre, Motia	2/7/2022	Dr. Sumit Kumar (Ophthalmic)	16	9	3	**28**
28	Godda	Health & Wellness Centre, Motia	9/7/2022	Osteo-Dr. Satyendra Mishra	4	8	5	**17**
29	Godda	Health & Wellness Centre, Motia	13/7/2022	Pediatric- Dr. K.N. Choudhary	0	0	12	**12**
30	Godda	Health & Wellness Centre, Motia	27/7/2022	Pediatric- Dr. K.N. Choudhary	0	0	22	**22**
31	Godda	Health & Wellness Centre, Motia	28/7/2022	Cardio- Dr. Narendra Kumar	5	14	1	**20**
32	Godda	Dhodhari	2-Jul-22	General Health Camp	29	35	1	**65**
33	Godda	Chaprasi Mohalla	16-Jul-22		14	38	5	**57**
34	Godda	Health & Wellness Centre, Motia	5/8/2022	Gynec- Dr. Kiran Jaiswal	0	21	0	**21**
35	Godda	Health & Wellness Centre, Motia	6/8/2022	Dr. Sumit Kumar (Ophthalmic)	9	19	1	**29**
36	Godda	Health & Wellness Centre, Motia	13/8/2022	Osteo-Dr. Satyendra Mishra	4	3	4	**11**
37	Godda	Health & Wellness Centre, Motia	27/8/2022	Osteo-Dr. Satyendra Mishra	11	6	3	**20**
38	Godda	Health & Wellness Centre, Motia	10/8/2022	Pediatric- Dr. K.N. Choudhary	0	0	26	**26**
39	Godda	Health & Wellness Centre, Motia	18/8/2022	Cardio- Dr. Narendra Kumar	10	16	1	**27**
40	Godda	Health & Wellness Centre, Motia	25/8/2022	Cardio- Dr. Narendra Kumar	5	6	2	**13**
41	Godda	Chaprasi Mohalla	6-Aug-22	General Health Camp	20	30	2	**52**
42	Godda	Health & Wellness Centre, Motia	1/9/2022	Cardio- Dr. Narendra Kumar	7	5	1	**13**
43	Godda	Health & Wellness Centre, Motia	12/9/2022	Cardio- Dr. Narendra Kumar	16	30	0	**46**
44	Godda	Health & Wellness Centre, Motia	2/9/2022	Gynec- Dr. Kiran Jaiswal	0	21	0	**21**
45	Godda	Health & Wellness Centre, Motia	16/9/2022	Gynec- Dr. Kiran Jaiswal	0	9	0	**9**
46	Godda	Health & Wellness Centre, Motia	14/9/2022	Pediatric- Dr. K.N. Choudhary	0	0	19	**19**
47	Godda	Health & Wellness Centre, Motia	28/9/2022	Pediatric- Dr. K.N. Choudhary	0	0	19	**19**
48	Godda	Health & Wellness Centre, Motia	12/9/2022	Dr. Sumit Kumar (Ophthalmic)	9	12	0	**21**

49	Godda	Health & Wellness Centre, Motia	10/9/2022	Osteo- Dr. Satyendra Mishra	6	22	0	**28**
50	Godda	Health & Wellness Centre, Motia	24/9/2022	Osteo- Dr. Satyendra Mishra	16	11	2	**29**
51	Godda	Chaprasi Mohalla	3-Sep-22	General	16	22	0	**38**
52	Godda	Chilkara- Helpage	18-Sep-22	Mega Camp	40	30	3	**73**
53	Godda	Chilkara- Wockhardt- Sah	18-Sep-22	Mega Camp	30	15	0	**45**
54	Godda	Chilkara	18-Sep-22	Eye Camp	22	1	0	**23**
Total					**354**	**540**	**210**	**1104**

4. **Blood Donation Drive:** The Adani Power (Jharkhand) Limited, Godda and Adani Foundation, Godda organized the **Blood Donation Camp** under joint aegis of Medical CSR and OHC to mark the **60th Birthday of Sh. Gautam Adani, Chairman of the Group** on **June 24th at Officer's Club, Motia site**. The Site Head, APJL, Mr. Naresh Goel, welcomed the Civil Surgeon, Sadar Hospital, Mr. Anant Jha with a flower bouquet and jointly inaugurated the Blood Donation Camp. Both the dignitaries recognized the good work of the blood donors and gave away the certificates to boost the morale of donors. More than 355 employees, contractors' staff and workers donated blood on this occasion creating an indelible mark of the highest collection on a day in the district. **Total blood unit collection- 358**

   The occasion witnessed the enthusiasm and passion among the blood donors to serve the cause of humanity. The idea was to save human lives at the time of emergency. The significance of the Blood Donation could be gauged from the fact that the donated blood was used by the government the next day for treating the thalassemia patient, thereby saving the lives of the young child, informed the OHC staff.

   The Adani Foundation and the Occupational Health Centre played a major role in organizing the camp and the efforts of all the organizers including the HR-Administration was appreciated by all. T- Shirts, Selfie point, Prizes, juice, and snacks were arranged for the donors and the organizers on the occasion.

   Donors were also awarded certificate of appreciation duly signed off by the Adani Foundation Chairperson, Mrs. Priti G. Adani, that provided the sense of elevation to all. It turned out to be a memorable moment.

5. **Plantation on the eve of 60th Birthday of Chairman of the Group: On 60th Birthday of Sh. Gautam Adani, Chairman of the Group** on **June 24th**, the team of Intake Pump Point, Sahebganj had organized Plantation program under which 12 saplings of horticulture & timber plants were planted including Mango, Shagwan and Amla at the site area. The team

had also expressed their love and affection by beautifully crafting and sketching the iconic figure, Sh. Gautam Adani.

6. **Awareness Drive on Specialized Health Camps:** Health Camp Awareness Drive has been initiated to inform, aware and educate the villagers and community of 17 core and railway line areas of the intervention of Adani Foundation of providing free Specialized Health Care services at PHC Motia, instrumental in safeguarding the life of approx. 2000 economically backward and marginalized rural population of the society.

   Door to door household visit and awareness campaign is conducted in each village in which the target households are informed about Doctors' schedule, specialization of diseases diagnosed, and sensitized about the importance of good health and productive life for a happy living. Five doctors of concerned specialization namely, Gynec, Pediatrics, Osteo, Cardio, & Ophthalmic are deputed at PHC, Motia on respective days and time duration in monthly and fortnightly manner where the patients reach to the health centre along with their health card for diagnosis of their health complication and follow-up as per doctor's prescription.

7. **Medical Support** and **health checkup** services are carried out by Ambulance and Medical team of Adani Foundation, Godda providing immediate ambulance services in affected region of Godda district.

8. **Health Card Distribution Drive:** Adani Foundation initiated **Health Card Distribution Drive** in 2 core villages namely, Gangta, and Petbi benefitting over 8 tribal households of Santhal community. Generation and issuance of Health cards to the residents of core villages is essential for identification of deserving beneficiaries, diagnosis and treatment of diseases, and promotion of wellness at all ages followed by regular monitoring and appropriate actions for critical cases. The objective of the drive is to mainstream the marginalized, socially, and economically excluded rural population to gain access to primary health care services at their doorsteps and Primary Health Care centre for clinical services under Specialized Health Camp intervention.

   The motto of sustainable development is also attained by raising awareness, and dissemination of knowledge among the poorer, illiterate, and unaware masses. It also plays a pivotal role in behavior change of community towards seeking health care services and detain quacks/unskilled practitioners.

Details of Health Card Distribution			
SN	**Month**	**Village**	**Households**
1	July 2022	Gangta	6

2	July 2022	Petbi	2
Total			**8**

Health Awareness Programmes

9. Suposhan Program

Support Program for Sustained Health and Nutrition (SuPoshan): SuPoshan programme, a flagship programme of Adani Foundation, was launched in Godda in January ’17 with an objective to reduce the occurrence of malnutrition & anemia amongst children, adolescent girl, pregnant & lactating women within five years of implementation period, Suposhan project has reached out to over 9000 direct beneficiaries.

The program has been able to achieve set goals by administering program inputs with target groups such as regular focused group discussions, awareness events, family counseling on topics to bring about change in behavior pattern within the community and raise awareness on various related issues like feeding practices for newborn, introduction of complementary feeding, pregnancy care, health and hygiene, facts and myths related to menstruation cycle, diet and care during sickness, effective methods and habits of cooking, etc. Activities like Hb screening, promoting IFA tablet to anemic girls and women, check-up by pediatrician and MHCU doctor, immunization in VHND, vegetable seeds support too contributed to bring about improvement in health status of malnourished children, girls, and women.

Awareness Events

Various awareness events like celebration of world breastfeeding week, national nutrition month, world environment day, etc. were conducted spreading the message in the community. Various competitions were organized under SuPoshan which play an effective role in spreading the message for care of pregnant lady, signs of malnutrition, right food and care for malnourished child, importance of hygiene/ sanitation and timely vaccination for good health of child and family to masses as it easily draws attention of public and conveys messages through Banner on MHCU, Slogan writing, Pamphlet, etc. in local language. Activities to stimulate thinking among participants were also conducted on topics such as significance of nutrition and its constituents in regular diet, vitality and method of hand washing, pregnancy care, proper latching and breastfeeding, nutritional requirement, and its impact on newborn health, etc.

SN	Event Name	Mode	Date/Duration	Beneficiary

1	**World Menstrual Hygiene Day**	Village level	28th May 2022	50
2	**World Environment Day**	Village level	5th June 2022	100
3	**International Yoga Day**	Village level	21st June 2022	150
4	**World Breastfeeding Week**	Village level	1st Aug'22-7th August'22	325
5	**National Nutrition Month**	Village level	1st-30th September 2022	360
	Total			**985**

10. Nutrition Garden (Poshan Vatika) Programme

- **Context:** Godda district is one of the aspirational districts of Jharkhand which falls under state of underdevelopment and backwardness with respect to less scope of employment, restrained economy, with the prevalence of stereotype and societal taboos in the remotest of the villages. The socio-economic limitations in the villages of Godda district has been a major reason of poor health condition. The financial Inabilities of rural households to find a sustainable source of income to meet the subsistence needs of the households' results into occurrence of both chronic and acute diseases and the cases of high range of malnutrition. Due to knowledge gap and lack of awareness about importance of balance diet and proper food intake in daily routine in the villages results into improper growth & development of children, and adolescents.

- **Triggers of Adani Foundation:** Adani Foundation endeavors to transform the lives of deprived and marginalized groups of community by mainstreaming to the entitlements and provisions of poorer rural and tribal households from the periphery. It aligns its activities with Sustainable Development Goals (SDGs) by envisaging its interventions with NITI Aayog, Planning Commission of India. The flagship programme Suposhan is a modified term of development which implies development with an approach of gender equality and equity, women empowerment, improvement of health & well-being, and capacitating with skills and knowledge base to supplement livelihood in a sustainable manner.

- **Nutrition garden**, also spelled as Poshan Vatika is a sustainable model which provides all micronutrients with an availability and access of all households to all varieties of green leafy vegetables, and fruits rich in Vitamin, Minerals, Iron, Proteins and other Macro and micronutrients throughout the year. It helps to mitigate the challenges of food resources and provides an equitable amount of food availability to the households. The programme alleviates the problems of food scarcity and nutritional gaps in the households and enhances the standard of living through improved health and well-being of each individual in the family.

Methodology

- **Baseline Survey, Need Assessment and Root Cause Analysis of Problems of Households:** The village volunteers and the community mobilizers of Adani Foundation rigorously conducts baseline survey to find out the socio-economic condition of the villagers followed by collection and collation of their various needs and selection of one root cause of the problems. After completion of the survey, project planning is done for doing the interventions to change the circumstances. Further, list of the beneficiaries is prepared village wise of core, railway line and pipeline areas and accordingly, proposed activities are executed as per timelines.
- **Intervention**

    i. **Vegetable Seeds Distribution** to selected households including children, adolescents, and women
    ii. **Training** to women and farmers on establishing Poshan Vatika, its importance, and advantages
    iii. **Exposure Visit** to established Ganga Maa model in village for Capacity Building on Poshan Vatika and its benefits
    iv. **Setup of Poshan Vatika Model for Demonstration** in selected villages with higher reach and accessibility by the villagers including school going and out of the school children, adolescents, women, elders, and frontline workers viz. ICDS functionaries, SHG, PRI members, village volunteers, etc.

❖ **AF Supported with Vegetable Seeds: Vegetable seeds distribution** under Poshan Vatika programme was commenced on September 2022 in **six villages of TPP Core area** to over **185 families.** It focuses on providing vegetables throughout the season making it sustainable including the target groups of Suposhan.

Medical Services

❖ **Health Awareness:** with collaborative efforts of Adani Foundation & Helpage India in Peripheral & Railway Line village area to provide support for better community health. Health Awareness Program are organised in area to aware rural people about harmful diseases, maintenance of cleanliness, direction for balance diet which help them to fight from diseases and the COVID 19 virus affecting the populations at large scale followed by all safety norms. School children and community persons have become more vocal with active approach towards curbing diseases and sharing of such valuable information among community.

❖ **Critical Health cases:** Diagnosis of critical cases of laborers working in TPP (site office) is done by CSR Medical Team regularly in an emergency manner.

- **Ambulance Facility to Poor Patients**: Families from 13 core villages have been benefitted from this initiative of Adani whose families remain loyal and grateful to company for the support provided by us in times of distress. Ambulance service is given to poor people belonging to TPP area in times of medical emergency or for transfer of critical patients to higher centre and for COVID health check-up, doing home quarantine and quarantine center and treatment like Bhagalpur, Deoghar, Ranchi, and Patna & Other nearby hospitals.

Seasonal Assistance

- **Aids & Appliances Distribution:** Adani endeavors to engage the community in promoting traditions and diversity of culture in the fields of art and music. The community are supported to organize local festivals, cultural program and perform puja rites with great joy, festivity and solidarity uniting the community. One Amplifier & 2 Horns was provided to the Puja committee of Hanuman temple in Niyamatchak village, Thakurgangti block in April 2022.

- **Support (Mike & Speaker) for Recreation & Cultural Program in 2 Schools of Core area**: Provided Support of Mike & Speaker to School Management Committee of High School, Motia (29th September 2022) and Plus 2 High School, Baksara (30th September 2022) for organizing cultural program and extra- curricular activities at different occasion in schools for the recreation of students.

- **Relief Materials Support to Affected Families from Natural Hazards:** Under Welfare Support, Relief Materials are distributed to support families affected from natural hazards or manmade calamities for the safety of their health and lives. The distribution of these materials has helped us to build positive image of Adani amongst people of Godda as well as strengthen our ties with key stakeholders during Pandemic.

  i. **Tarpaulin Assistance for Natural Disaster Management:** Under 'Poorer Welfare & Assistance' program, Adani supports the poorer and weaker sections of society affected from natural calamities or uncertain disasters such as fire, flood, cyclone, thunderstorm, etc. **On dated 19th May 2022, heavy thunderstorm, rainfall, and cyclone** was experienced in all over the Godda district causing massive damage to the capacity of beneficiaries to earn their living and loss to materials, also causing injury and loss to human life, nonetheless.

     Adani instantly supported **248** affected families of core and railway line villages namely, Baksara, Baliakitta, Petwi, Nayabad, Kauribahiyar, Bhartikitta, Bohra, Sondiha, etc. with Tarpaulin sheets for addressing the issue and safeguarding over **1240 beneficiaries** in Godda district.

Seasonal Assistance to Community					
SN	**Project Area**	**Distribution duration**	**Name of block**	**Location/Village**	**No of HHs/families**
Material Support to Community: Tarpaulin (Affected Families from Natural Hazards)					
1	Core Area	May-June'22	Podaiyahat	Baksara	6
2	Core Area	May-June'22	Podaiyahat	Chhoti Baksara Laiya Tola	1
3	Core Area	May-June'22	Podaiyahat	Baliyakitta	9
4	Core Area	May-June'22	Godda	Bhartikitta	17
5	Core Area	May-June'22	Podaiyahat	Bohra (Laiya Tola)	3
6	Core Area	May-June'22	Podaiyahat	Dahupakhar	6
7	Core Area	May-June'22	Godda	Dumaria	16
8	Core Area	May-June'22	Godda	Gangta Govindpur	1
9	Core Area	May-June'22	Podaiyahat	Jalgo	5
10	Railway line area	May-June'22	Godda	Kauribahiyar	17
11	Periphery area	May-June'22	Godda	Kumarkund	4
12	Periphery area	May-June'22	Godda	Laxmikitta	1
13	Periphery area	May-June'22	Podaiyahat	Majdiha	2
14	Periphery area	May-June'22	Podaiyahat	Maltola Bohra	1
15	Core Area	May-June'22	Godda	Motia	50
16	Core Area	May-June'22	Podaiyahat	Petbi	6
17	Railway line area	May-June'22	Godda	Ramnagar	1
18	Core Area	May-June'22	Podaiyahat	Rangniya	2
19	Core Area	May-June'22	Godda	Ranitikar	2
20	Pipeline area-Sahebganj	June-July'22	Sahebganj	Sahebganj	10
21	Core Area	July'22	Podaiyahat	Baksara	3
22	Core Area	July'22	Godda	Gangta	25
23	Core Area	July'22	Godda	Karikado Laiya tola	12
24	Core Area	July'22	Godda	Motia	12
25	Core Area	July'22	Godda	Nayabad	20
26	Core Area	July'22	Podaiyahat	Petbi	1
27	Core Area	July'22	Godda	Siktia	1
28	Periphery area	July'22	Podaiyahat	Tesho Bathan	1
29	Godda	July'22	Godda	Godda	2
30	Core Area	July- Aug'22	Podaiyahat	Sondiha	11
	Total				**248**

ii. Team Participation in cultural event: Adani supported the local villagers in organizing festivals and social events to strengthen ties and build relation with community. It emphasizes to celebrate the cultural program with huge joy and enthusiasm among the rural people. Social occasion program such as Sarhul Parv, Sawan Mahotsav, Dusshera, International Day of Indigenous Peoples, Harinam Sankirtan, Santmant Satsang, Ganesh Chaturthi, etc. was celebrated in the villages.

Welfare Support

iii. Assistance in Health, Marriage and Death: Adani provides financial support to poor people for such events which require huge expense such as marriage ceremony, educational needs, major illness including hospitalization of patient, death of a person. **603** beneficiaries from more than 10 villages have been extended financial support to the tune of **Rs. 20,08,340/-**

Support Cause	No. of Beneficiaries	Supported Amount
Health Support	17	206500
Others Support	8	38140
Marriage Support	18	162500
Death Support	23	190000
Education Support	4	175000
Social Occasion Support	533	1236200
Total	**603**	**2008340**

SUSTAINABLE LIVELIHOODS

1. **Adani Skill Development Centre:** Adani Skill Development Centre- ASDC, Godda was inaugurated by Executive Director AF- Education and Skills on 27th September 2018. Total Eight trades viz. Welder, Fitter, Mason and Bar bender, General Duty assistant, Hospitality, Electrical, industrial Sewing Machine Operator, and Digital Literacy classes is operational in which over **3884** candidates were trained and benefitted till Financial Year 2021-22.

Trainees Enrolled and Benefitted in Various Trades at ASDC						
S. N	Trade	Year 18-19	Year 19-20	Year 20-21	Year 21-22	Total
		No. of trainees benefitted in 1st Batch	No. of trainees benefitted in 2nd Batch	No. of trainees benefitted in 3rd Batch	No. of trainees benefitted in 4th Batch	
1	Fitter (2 year)	29	91	64	218	**402**
2	Welder	30	35	43	57	**165**
3	Ass. Electrician (2 year)	30	50	65	150	**295**
4	Hospitality	30	65	55	114	**264**
5	Digital Literacy	257	985	432	374	**2048**
6	G.D.A.	30	175	72	191	**468**
7	Bar Bending	30	80	25	107	**242**

Total	**436**	**1481**	**756**	**1211**	**3884**

- **Enrollment in New Batch in 2022-23:** In the year 2022-23, new training batch of Domain Business trades was started from April 2022 onwards. Nine batch is operational consisting of **730** candidates provided online training under **Skilling India Program of National Skill India Corporation from Online & Offline mode of training classes at ASDC in Business Trades viz. Fitter, Bar-Bender, Asst. Elec., Welder, GDA, SMO, F&B, and Digital Literacy trade.** 393 Candidates has been certified in Current Financial Year. The Self-learning model enables the candidate to build repository of knowledge through access of learning materials provided in the link and after the completion of course, the candidates will appear on examination to self-evaluate their performance followed by certification duly provided by NSDC.

ADMISSIONS APRIL '22 TILL SEPTEMBER' 22								
Sr No	**Job Role**	**Apr-22**	**May-22**	**Jun-22**	**Jul-22**	**Aug-22**	**Sep-22**	**Total**
1	Sewing Machine Operator	96	22	27	24	14	0	183
2	Sewing Machine Operator Outreach	0	0	0	20	0	24	44
3	Assistant Electrician	3	2	7	7	7	2	28
4	Fitter Mechanical Assembly	16	22	20	17	31	5	111
5	F & B Service Steward	3	12	15	12	17	3	62
6	General Duty Assistant	18	11	10	19	30	3	91
7	Welding Technician	0	0	0	0	0	0	0
8	Bar Bender & Steel Fixtures	0	0	0	0	0	0	0
9	Digital Literacy	40	26	21	65	36	23	211
	Total	**176**	**95**	**100**	**164**	**135**	**60**	**730**

- **On Job Training & Placement of Saksham Trainees at ASDC**

This year, the candidates bagged the offer and got placed at different reputed organization in their domain field. Total **67 youths** in **Fitter (39), F & B (17), and GDA (11) trade** have got placement

and joined the reputed organizations with decent annual package and accommodation facilities. The candidates have expressed their heartfelt gratitude towards Adani Foundation for giving them a platform to rejuvenate their conditions and succeed with bright career through skill training under Skilling India Program.

Placement of Trainees at ASDC (April'22-September'22)						
S No	**Trade**	**No of Trainees**	**Location**	**Company Name**	**Salary per Month**	**CTC (In lakhs)**
1	Fitter	3	Godda	IPL (Incredible Project Logistic Limited), Adani Power (Jh.) Ltd	12000	1.44
2	Fitter	3	Kolkata	Reliance Warehouse	11000	1.32
3	F & B	2	Kolkata	Reliance Warehouse	11000	1.32
4	F & B	5	Delhi	Barbeque Nation	10000	1.2
5	F & B	4	Mumbai	Barbeque Nation	10000	1.2
6	GDA	5	Hyderabad	PORTEA Medical Hyderabad	16000	1.92
7	GDA	4	Ranchi	24 Hour Health care	10500	1.26
8	GDA	2	Godda	Apollo health Plus	5000	0.6
9	Fitter	6	Hyderabad	BIG Basket	17000	2.04
10	Fitter	22	Godda	Techno Power under HTG Adani Power Plant, Godda	12000	1.44
11	Fitter	2	Godda	IPL Adani Power Plant	12000	1.44
12	Fitter	1	Giridih	Venue Organic Pvt Ltd.	10000	1.2
13	Fitter	1	Godda	Chandar Power under Adani Power Plant	28000	3.36
14	Fitter	1	Sahebganj	Coal Field Equipment Pvt. Ltd.	15000	1.8
15	F&B	6	Delhi	Barbeque Nation	12000	1.44
	Total Trainees Placed---67					

2. Celebration of World Environment Day (5th June 2022) at Motia: On the occasion of World Environment Day on June 5, Adani Foundation had organized Awareness Rally and Plantation drive in Motia village with participation of more than 200 children, school teachers, PRI members and community. The program was inaugurated in presence of Mukhiya Sh. Ashok

Choudhary and school teachers at Middle School, Motia who delivered speech and motivated the students on importance of Environment Day and conservation of environment. Various environmental & global issues such as deforestation, environmental pollution, soil erosion, land degradation, health issues and global warming based on sign boards, posters, etc. were informed to the community within radius of 2 km in Motia village. The students were provided saplings of Ashoka tree for plantation at home and community level. Apart from students, the villagers also had a good participation in the **Rally led by 200 villagers who planted 150 Ashoka saplings** in nearby villages and school area.

3. Plantation of Horticulture plants in villages: **Promote Environment Conservation, Ecological Restoration and Conservation of Biodiversity**

With, the motto of 'People and Planet', the community were educated to spread awareness on the significance of Plantation with the sustenance of livelihood of the flora and fauna and enlighten the lives of the poorer and downtrodden community. **In August 2022, over 200 households from 30 core, railway line, periphery, and pipeline villages of Godda district** were supported with fruit bearing saplings of **Mango (1000), and Lemon (150)** to encourage plantation at households and community level and, supplement their livelihood to improve their health and well- being.

The community praised Adani Foundation for its continued support for Plantation of trees helps to make the environment cleaner and ensure fresh air around us. Also, the women and adolescents were made aware and sensitized to include nutritional diet in daily routine to reduce occurrence of malnutrition among children and anaemia in adolescents.

4. Veterinary Health Camp in Godda

Adani Foundation in association with Animal Husbandry Department, Godda had organized Specialized Health Camp & Vaccination for Livestocks' with mutual guidance and needful support of District Animal Husbandry Officer (DHO). **3 Veterinary Health Camps** were conducted in 3 villages of TPP area, Godda benefitting over **227 households & livestock farmers** directly through camp services. Total **1190 Livestock** including cattles and other domesticated animals were screened

S.N	Date	Village	Household	Livestock
1	27.09.2022	Motia	68	410

2	28.09.2022	Dumaria	78	425
3	29.09.2022	Sondiha	81	355
	Total		**227**	**1190**

5. **Skill Development & Employment Generation for Youths at Women's College at ITI, Godda:** On April 2022, an **MoU under Public Private Partnership (PPP) Model was signed between Adani Skill Development Centre (ASDC) with Government of Jharkhand, and Ministry of Training and Industries** for 10 years duration stating roles & responsibilities of all the stakeholders. The infrastructure of Govt Women's ITI College has been adopted for commencing Skill development programme in different trades with an objective to skill the youths and generate employment opportunities for sustainable living and transformation of lives.

   Govt Women's ITI College in Godda, Jharkhand was inaugurated in the year 2016 to provide employment based Vocational Training under Skill Development Mission Government of India. This initiative will serve over 1500 marginalized and vibrant youths of rural area to outshine their obstacles and uplift their living by sharpening their skills and gets self-employed in concerned area of interest (mechanical & non-mechanical). **On dated 17th May 2022, Sh. Jatin Trivedi, COO, ASDC visited 'Women's ITI College at Siktia, Godda'** and interacted with the officials of Government department and staffs regarding Adoption of Women' ITI College by Adani Skill Development Centre (ASDC), Godda and discussion was held on provision of Handover of Women's ITI College by Government of Jharkhand to Adani Skill Development Centre (ASDC), Godda.

6. **Plantation Survival Survey in Villages:** Plantation Survival survey was conducted in the month of May 2022 in Dumaria, Baksara, Sondiha, Motia village of core area and 18 pipeline villages of Godda district to assess the success of plantation and measure the survival % on an average for the horticulture plants distributed during the year 2021-22. The survival survey was conducted on random basis in 4-5 villages comprising of 69 households of core area while total 28 households were surveyed in pipeline villages. The result of the survey was 82% survival of total 150 mango plantation in pipeline villages while, in core villages, 51% survival was analysed of mango and lemon plantation.

7. **Support to SHG for Income Generation:** Adani Foundation supported the Women Self Help Group- Phoolo Jhano Saksham Sakhi Mandal (PJSASM) in accomplishment of flags stitching in a short span of around **1,16,713 Flags** assigned by JSLPS and District Administration, respectively with an objective to celebrate **Independence Day under the National Campaign of Government of India- "Har Ghar Tiranga" as part of 75th 'Azadi Ka Amrit Mahotsav' from 13-15 August 2022.** More than 200 women members were engaged and also earned income from flag stitching work at core and outreach sewing centres namely, ITI Siktia, Pathargama, ASDC, Motia, Dumaria, Sondiha, Rangania and Bahuria respectively.

8. Chief Guest Visits & Important Days Celebration

- **Celebration of Independence Day among community:** Adani endeavors to commemorate the freedom fighters and exhibit patriotism towards the Nation by fostering growth & development of community for progressive and sustainable future. On the eve of Independence Day (15th August 2022), Adani had organized **National Campaign of Government of India- "Har Ghar Tiranga" as part of 75th 'Azadi Ka Amrit Mahotsav' from 13-15 August 2022**, by providing National flags stitched by Women SHG to villagers and community of intervention villages and public of Godda district and instilling them with true essence of patriotism in remembrance of the martyrs and freedom fighters. The 75th Independence Day was marked with great pride, vitality, and festivity among every patriot of the 'Mother Earth' and the 'Nation'.

- **Social Presentation at Group level – Chief Guest Visit- Adani Foundation: Four days' Site level Review Visit was held from dated 12th September 2022 till 15th September 2022** among dignitaries of Adani Foundation, Ahmedabad, and site level CSR team to get deeper understanding of the CSR projects being carried out at the location, Godda (district Godda, and Sahebganj, Jharkhand). The dignitaries had reviewed and interacted with different stakeholders including the beneficiaries of core programs namely, Education, Health, SLD and RID in Godda and Sahebganj. The prospective programs with structured approach were discussed with site team so that the efforts and resources could be prioritized. **'Vision 2026'** was also suggested to the Godda team which would be governed by a vision for the villages at the site.

RURAL INFRASTRUCTURE DEVELOPMENT

Water Conservation, Ground water recharge

1. **Deepening work of Ponds:** Pond plays a crucial role in the functioning of natural cycle with enhancement of livelihood of human mankind, and natural species of flora and fauna. It enhances the soil moisture in the agricultural land, increases the water storage capacity of other harvesting structures and recharges ground water level in catchment area enabling access to drinking water namely wells, community wells and hand pumps.

   Pond Deepening work caters to multipurpose usage in relation to livelihood generation for poorer households and community, and water security which entails the reliable availability of an acceptable quantity and quality of water for health, livelihoods, and production, coupled with an acceptable level of water-related risks. It also promotes Environment Conservation & Protection, Ecological Restoration and increase access to Water Commons and other Common Pool Resources (CPRs) in the villages.

   During April- Sep'22, pond deepening work was carried out of six ponds in six villages falling under core, railway line and pipeline area. More than 200 farmers availed benefits from pond deepening for doing irrigation in their agricultural land of 180 acres along with enhanced soil fertility and restoration of ecology. Along with pond deepening work, Canal and pond cleaning and stair work at pond was completed in four villages, to benefit the farmers and community for channelizing economic as well as domestic, cultural, and religious activities in villages.

SN	Activity	Village	Duration
1	Barabandh Pond cutting at Barabandah village	Barabandah	22-Apr
2	Cleaning of Pond at Tulshikitta village, Pathargama block	Tulshikitta	22-Apr
3	Deepening of Mal tola pond at Bohra Village	Bohra	22-Jun
4	Deepening of Madhuri Pond at Asadhi Madhuri village	Asadhi Madhuri	22-Jun
5	Deepening of Kura Pond at Motia village	Motia	22-Jun
6	Deepening of Pond at Dumaria village	Dumaria	22-Jun
7	Deepening of Pond at Kauribahiyar village	Kauribahiyar	22-Jun
8	Canal Cleaning (3.5 Km long)	Bhagwanpur	22-July

9	Stair at Pond	Kauribahiyar	22- Aug
10	Stair at Pond in Dhamsai temple	Dhamsai	22- Aug

Drinking Water Facility

1. **Drinking water facility in villages –Borewell, Community Well etc.:** 1 Submersible installation at doctor's quarter, Thakurgangti Hospital on August 22 and 10 wells was renovated in 3 villages of core & railway line area. The work will facilitate the villagers, community, hospital staffs and patients during the summer season and all the year for drinking & domestic use.

Well renovation						
S. N	**Duration**	**Block**	**Village**	**No. Of Wells Renovated**	**Total HHs**	**Beneficiary**
1	22-Apr	Godda	Kauribahiyar	2	50	400
2	22-Apr	Podaiyahat	Gumma	2	50	400
3	22-May	Godda	Kauribahiyar Mal	2	60	480
4	Aug-22	Godda	Kauribahiyar	3	45	180
5	Sep'22	Godda	Motia	1	15	60
	Total			**10**	**220**	**1520**

2. **Installation, Renovation & Repairing Work of 310 Hand pumps & Hand pump Platform:** Hand pumps are primary source for drinking water and other domestic need in the TPP area. Adani Foundation has been taken up the hand pumps maintenance and repairing work of hand pumps, its installation and construction of hand pump platform in 6 blocks including core, railway line and pipeline villages. With this work, we are ensuring 100% functionality of the hand pumps in the area. This year we have renovated and repaired 303 hand pumps in villages of Godda, Podaiyahat, Thakurgangti, Mahagama, Mehrama & Boarijor blocks of core, railway & pipeline area and 7 hand pump was installed in core, railway line and pipeline villages benefitting more than 30,000 rural population. Branding of hand pumps repaired by Adani Foundation has also been done for its recognitions and better monitoring.

Hand Pump Repairing				
Sl No	**Duration**	**Block**	**No. Of Village Covered**	**No. Of Hand Pump Repaired**
1	May-22	Mahagama	14	63
2	May-22	Meharama	5	16
3	Jun-22	Mahagama	11	24
4	Jun-22	Meharama	8	19
5	Jul-22	Mahagama	31	61
6	Jul-22	Mehrama	31	53
7	Jul-22	Boarijore	3	8
8	Aug-22	Mahagama	14	29
9	Aug-22	Meharama	8	13
10	Sep-22	Mahagama	5	11
11	Sep-22	Meharama	4	6
		Total	**134**	**303**

Handpump Installation						
S.N	**Duration**	**Block**	**Village**	**Unit**	**Total HH**	**Beneficiary**
1	Apr'22	Podaiyahat	Gumma	1	20	80
2	22-Jun	Podaiyahat	Gumma	1	20	80
3	22-Jun	Podaiyahat	Gumma	1	30	120
4	Aug-22	Sahebganj	Sahebganj	1	25	100
5	Aug-22	Godda	Motia (Laiya tola & near Shailesh temple)	2	44	176
6	Aug-22	Godda	Gangta	1	22	88
Total				**7**	**161**	**644**

Educational infrastructure Development

1. **School Development of High School, Motia:** During the year 2020-21, six Classroom was constructed in High School, Motia. The remaining work was taken up in the succeeding years to develop adequate infrastructure and make the school functional including sanitation facilities, drinking facilities (installation of borewell), flooring, plumbing, tiles, painting, and beautification work of the classrooms. It will bridge the infrastructural gap in pursuing education for poorer and rural children in a proper space and conducive learning environment. During April- Sep'22, Centering work of Septic Tank, Stone Flooring work of Classrooms, and Painting work of classrooms has been completed.

2. **Construction of School Kitchen in Middle School, Motia** was completed in June 2022 with an objective to improve **Health, Nutrition, and Wellness of children** and increase the attendance rate of students and academic performance.

3. **Beautification work at Virkuwar Singh Inter College Gate** was done in May 2022 to provide better rural infrastructure and enable access to educational institutions for more than 200 students

4. **Construction of Boundary Wall at Gangwara village School** in April 2022 and **Middle School, Kaithatikar** in May 2022 & BALA Painting was completed in Middle School, Basantpur in April 22 to protect the school premises and contribute towards imparting quality of education to rural children.

5. **Strengthening Anganwadi Centre (AWC)- Infrastructural Support for Model Anganwadi:** Several infrastructural work was initiated in 2021-22 which was completed during Half Year (2022-23) including education related sanitation facilities, kitchen facilities, drinking water facilities and BALA paintings as learning aid with an objective to achieve the vision of Model Anganwadi and transform the state of target groups comprising of children (0-5 years), adolescents, pregnant women, lactating mother, and community with advanced tools for their holistic development. The project aims to provide a caring environment that addresses the educative, health and nutritive requirements of rural children.

SN	Anganwadi Center	Intervention	Status	Intervention	Status
1	Dumaria	Drinking water facility-Water Supply System & Water tank	Completed	Beautification work of buildings including kitchen & construction of Soakpit	Completed
2	Patwa	Drinking water facility- Water Supply System & Water tank with Boring & Submersible	Completed	Renovation of Kitchen & Anganwadi centre	Completed
3	Motia (Kahar tola)	Construction of Soak pit (Connection of Drain)	Completed	Boundary Wall construction	Completed
4	Baksara (Laiya tola)	Sanitation facility- Construction of Toilet & Septic tank	Completed	-	-
5	Gangta	Sanitation facility- Construction of Toilet	Not started	-	-
6	Motia (Harijan tola)	Drinking water facility- Water Supply System & Water tank with Boring & Submersible	Completed	-	-
7	Birniya	Sanitation facility- Construction of Toilet	Not started	Drinking Water facility- Handpump Installation with Boring	Not started

Health and Sanitation infrastructure Development

Good Health and Well-being is an important indicator of development of individuals, groups, family, and society. It also contributes towards achievement of Sustainable Development Goals, ***SDG** 3 "Ensure **healthy** lives and promote well-being for all at all ages".* However, due to weakened health institutions, the people face many difficulties and challenges in availing the public health care services. Ultimately, it results into miserable health conditions and other uncertain situations for whole family due to low household income to afford medical expenses of private hospitals. Similarly, due to defunct and damaged health infrastructure, the operational deliverable in line gets adjourned, affecting the health of the people.

1. **Construction of Labor Room in Mahagama Hospital:** Completed in July 2022. It has helped the hospital staffs and patients to operate all health services in a better manner serving over 1000 patients and pregnant women for health treatment and safe delivery in Mahagama hospital.

Other Village development structures

1. **Construction of 1 Model Bathroom & Soak pit near Handpump:** As we are working towards creating awareness for cleanliness and hygiene by our program named "SWACCHAGRIH" with an aim to aware and engage people in creating cleanliness culture. Some time ago people had no bathroom facility in their village, and they were using open places for toilet as well as bathing purpose which invites unhygienic condition and diseases among the people and makes the women more vulnerable to several social issues. To get rid of from this issue we have constructed 1 model bathroom with soak pit near hand pump in Sarwa village of periphery area of Godda district to provide better rural infrastructure in the villages

S. N	Duration	Block	Village	No. Of Bathroom	Total HHs	Beneficiary
1	April'22	Podaiyahat	Sarwa	1	15	30
Total				**1**	**15**	**30**

2. **Construction of 6 Seating Place (Chabutra) in villages:** Construction of 6 Seating place has been done in 5 core and pipeline villages. Normally village not having common places in the village for seating purpose for elders and senior citizens. This is being used by the common people in the village for seating purpose.

SN	Village	Block	Unit	Duration
1	Sarwa	Podaiyahat	1	April'22
2	Kauribahiyar	Godda	1	April'22
3	Bhagwanpur	Thakurgangti	1	April'22
4	Korka	Godda	1	May'22
5	Ratanpur	Thakurgangti	1	June'22
6	Kauribahiyar	Godda	1	August'22
Total			**6**	

3. **Construction of Conference Hall at Sibu Soren Janjatiya Inter College, Borio Block** at cultural heritage sites in Sahebganj to provide adequate infrastructure to held meetings, seminars, and cultural events for tribals students & community (1st Part Completed)

4. **Construction of Cultural Stage** at **Ratanpur village of Thakurgangti block of pipeline area** for organizing community level program.

5. **Renovation of Community Hall at TPP area for Community Programs** for Promotion of cultural activity and local events at village level for community. It helps share peace and harmony among community. As we are committed to provide better community structures to the village,

we have renovated 1 community hall in Motia, Kahar Tola of core area. This hall is also being used for community purpose.

SN	Duration	Village	Unit
1	July 2022	Motia, Kahar Tola	1

6. **Construction of Drains:** Construction of Drains was carried out in various core villages, namely at Motia (Yadav tola) (100 m), Kauribahiyar near Bhairan baba temple (80 m), Drain (130 m) at Patwa village, Motia (Mandal tola) (123 m), 2 Drains at Sondiha (105 m, 170 meter) and Kauribahiyar (80 m) village for proper drainage system and sanitation in the rural area.

7. **Construction of 2 nos. Shed at Sahebganj:** To provide better infrastructure facilities to the public of Sahebganj district.

8. **Renovation of Women's College ITI Building at Sikatia, Godda:** To provide better infrastructure facilities to trainers, candidates, and staffs for Skill development program

9. **Construction of Green room at Sarwa** for better rural infrastructure facilities to the villagers.

10. **Renovation and construction of 20 community structures:** We have taken up the renovation & upgradation of old, defunct, and dilapidated community structures and cultural heritage structures in 17 intervention villages to restore, adapt and conserve structures of heritage and cultural value. Moreover, it enables the villagers to organize local festivals, perform puja rites and conduct village level meetings such as SHG meeting, Gram Sabha, Sports Committee meeting, etc.

11. **Painting work for 15th August 2022 (Independence Day) program** at Historical places of Godda: Adani endeavors to commemorate the freedom fighters and exhibit patriotism towards the Nation by fostering growth & development of community for progressive and sustainable future. On the auspicious occasion of **15th August 2022** (Independence Day), Painting work was done at several Historical places of Godda for conducting flag hoisting ceremony in presence of chief dignitaries, and police force.

12. **Repairing of Village Road** at Gumma Village completed in April 22 to provide better rural infrastructure facilities to the villagers for commuting**.**

13. **GSB Filling Road was done in Basantpur village** to provide better infrastructure facilities to the villagers of Godda district in Sep 22.

14. Construction of Paver block pathway beside Flag Hoisting Stage at Sahebganj

Annexure – III

Green Belt Developed till September'22: 9.7 acres

Sl. No	Species	Sl. No	Species
1	Kadam (Neolamarckia cadamba)	13	Plumeria Alba
2	Thuja (Thuja occidentalis)	14	Polyalthia longifolia
3	Foxtail Palm	15	Koral tree
4	Washingtonia	16	Fishtail palm
5	Mango	17	Pipal
6	Bouganvellia	18	Amaltas
7	Meligtonia	19	Guava
8	Bottle Brush	20	Sisham
9	Neem (Azadirachta indica)	21	Lemon tree
10	Pride of India (Lagerstroemia speciosa)	22	Ber
11	Bauhinia Blackiana	23	Hedge
12	Golden callistemon	24	Shrubs

Green Belt Development

Plantation along the boundary (Inside plant)

Green Belt Development

Plants in Nursery (inside plant)

Green Belt (inside plant)

Green Belt under Development

Outside Avenue Plantation

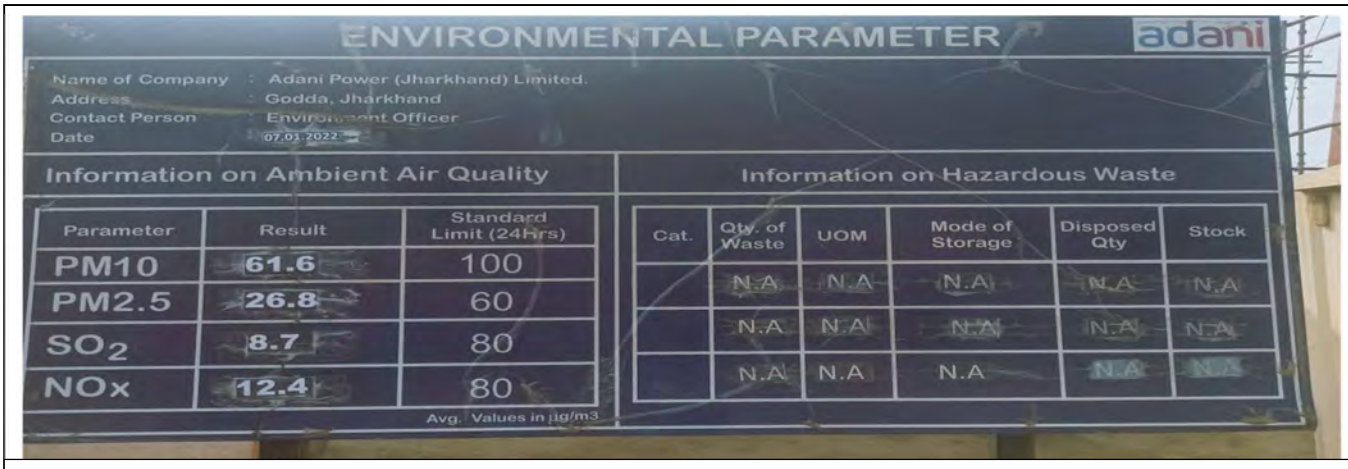
Outside Avenue Plantation

Admin Building with Plantation in Progress

Main Plant View

Water sprinkling on road to reduce fugitive emission

Cooling Tower



Manual Display Board at Main Gate

Raw Water Reservoir

Electro Static Precipitator (ESP)

Fly Ash Silo with Bag Filter

Coal Settling Pond

Rain Water Harvesting Pond