

A glass sphere containing a miniature forest scene with a tree and rocks, floating in a sun-dappled forest.

Environmental Studies

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Topic

“Visit to MIDC purification plant”



About Company & History

- ❑ Early MIDC industries in **Boisar** had **no centralized wastewater treatment**.
- ❑ Each industry was responsible for its **own purification plant**, but many lacked proper systems
- ❑ To address pollution concerns, the government established the **Tarapur Environment Protection Society Plant**.
- ❑ Promotes **eco-friendly practices** in the industrial sector.

Objective To Visit Plant

- ❑ The textile industry significantly contributes to **global economic growth**.
- ❑ However, it generates large amounts of wastewater, which poses **environmental and health hazards due to toxic pollutants**.
- ❑ Wastewater contains **heavy metals** and **harmful chemicals** from dyeing processes.
- ❑ These pollutants are harmful to **aquatic ecosystems** and **human health**.

Machinery Used

- **Screens and Grinders:** Remove large debris like rags and sticks.
- **Grit Chambers:** Settle out sand, gravel, and other inorganic solids.
- **Aeration Tanks:** Introduce oxygen to help bacteria degrade organic matter.
- **Clarifiers:** Separate suspended solids by allowing them to settle.
- **Equilibrium Tank:** Balances flow rate and pollutant concentration.
- **Blowers:** Provide air to aeration tanks for oxygenation.
- **Pumps:** Move wastewater through the treatment process.
- **Analytical Instruments:** Monitor water quality (pH, oxygen, contaminants).
- **Outfall Tank:** Temporarily stores treated water before discharge.

Treatment Stages

Primary Treatment:

- **Screening & Grit Removal:** Removes large debris and inorganic solids.
- **Machinery:** Screens, grinders, grit chambers.

Secondary Treatment:

- **Aeration:** Promotes bacteria growth to degrade organic matter.
- **Clarification:** Settles suspended solids.
- **Machinery:** Aeration tanks, blowers, clarifiers.

- **Tertiary Treatment (Optional):**

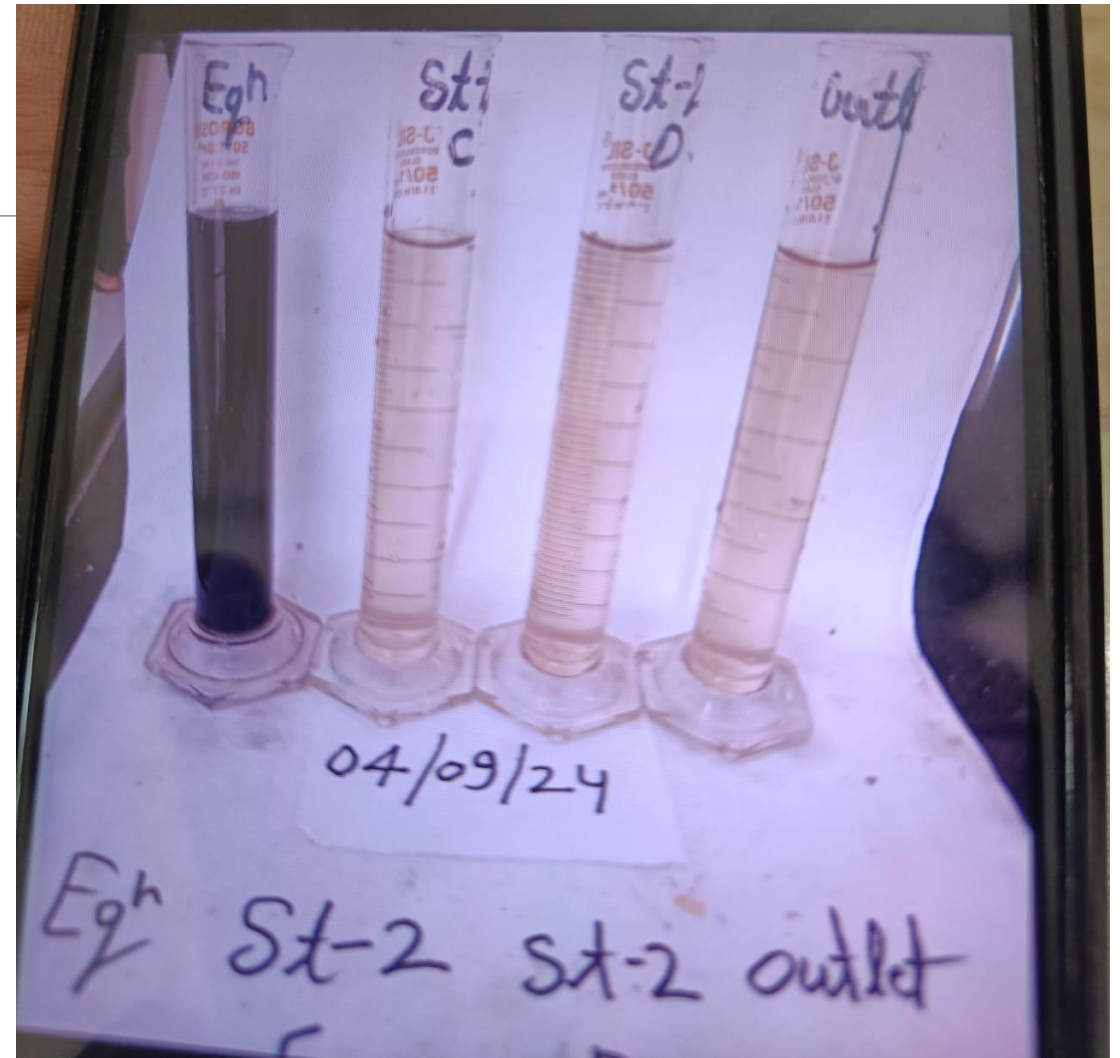
- **Filtration:** Removes smaller particles.
- **Disinfection:** Kills harmful microorganisms.
- **Machinery:** Filters, UV units.

- **Sludge Treatment:**

- Reduces and dewateres sludge for disposal.
- **Machinery:** Thickeners, dewatering equipment.

- **Effluent Discharge:**

- Releases treated water into natural bodies.
- **Machinery:** Discharge pipes.



Summary / Overview

- **Importance of MIDC Tarapur Purification Plant:**
 - Essential for treating industrial wastewater to meet environmental standards.
- **Treatment Process Overview:**
 - **Primary:** Removes large debris and inorganic solids.
 - **Secondary:** Aeration for bacterial breakdown; clarification for suspended solids.
 - **Tertiary:** Filtration, disinfection, and Advanced Oxidation Processes (AOPs).

Conclusion

- **Challenges:**
 - Some industries fail to meet regulatory standards, necessitating stricter enforcement and improved waste management.
- **Significance:**
 - Critical for safeguarding environmental health and water quality.
 - Continuous oversight and technological advancements are vital.
 - Compliance with regulations is crucial for sustainable practices and protecting water resources.



