

Centralize Effluent Treatment Plant (CETP)

Description:

When we design an ETP, we usually think about one specific plant and design accordingly. If we are working on a big economic zone where multiple plants are there, building different ETPs for each project would be a waste of space and resources. A proper Centralized system is then designed to make sure it is covering all the plant's water resources are treated and properly utilized.

Designing and operating a CETP presents unique challenges due to the varied and often fluctuating characteristics of wastewater streams received from diverse industries. This requires:

- Robust Pre-treatment
- Flexible Biological Process
- Advanced Tertiary Treatment.
- Fair and Transparent Management.

At Water Technology BD Ltd, we specialize in the comprehensive design, construction, operation, and maintenance of CETPs. We understand the complexities of managing diverse industrial effluents and are committed to creating efficient, compliant, and sustainable shared treatment infrastructure that benefits both the industries and the environment they operate. We help industrial clusters transform their collective wastewater challenge into a collaborative success story.



1. Biological (ETP)

Description:

The bread and butter of an ETP is that it will use the bacteria from nature to break down the organic solids and dissolve them in the wastewater. The controlled environment in each tank will ensure a sustainable yet controlled growth for the bacteria to keep the BOD and COD in check. The entire process will occur in three different plants: Anoxic tank, MBBR, and ASP.

Moving Bed Biofilm Reactor (MBBR)

Description:

An MBBR tank is the heart and soul of the entire operation, and this is the step where the main magic happens. Also, it is the most efficient and adaptable technology in biological wastewater treatment. Unlike the anoxic tank, MBBR has an aeration system with thousands of small plastic biochips. At Water Technology BD Ltd, we have partnered with MUTAG BioChip™ to elevate the performance of an MBBR tank.

Mutag Biochip™ is distinguished by its unique, wafer-thin design and intricate internal pore structure. This specialized engineering creates an exceptionally high protected active surface area (over 5,500 m²/m³), far surpassing that of conventional carriers. This vast surface area provides an ideal, stable environment for a dense and diverse microbial population to thrive.

We leverage the advanced capabilities of MBBR technology, specifically integrating the superior Mutag Biochip™, to provide our clients with highly efficient, space-saving, and exceptionally reliable biological treatment solutions. This ensures robust performance, lower operational costs, and consistent adherence to the most stringent discharge standards.

Activated Sludge Process (ASP)

Description:

The final step of the biological treatment plant would be the activated sludge process. Unlike, the MBBR tank, where the microorganism stays afloat with the biochip, here the bacteria move freely throughout the tank and make sure the rest of the biological wastes are taken care of. The aeration system continuously supplies free oxygen to the water so that the bacteria can thrive, and this oxygen-rich environment provides the ideal conditions for a diverse community of aerobic bacteria and other microorganisms to thrive. These microorganisms consume the dissolved organic pollutants (BOD, COD) in the wastewater as their food source for energy and growth. As they grow, they clump together to form "flocs" – visible aggregates of biomass.

2. Chemical (ETP)

Description:

Although the biological part of the modern ETP is more widely used in current effluent treatment, based on the effluent type, sometimes using the traditional method is more profitable for the operations. In a chemical ETP, the goal is to treat the effluent using only chemicals.

A chemical ETP usually works in the following industries:

- Industries with high concentrations of heavy metals.
- Chemical, pharmaceuticals, and textile industries with extreme pH levels.
- Industries with high inorganic pollutants
- High suspended solids/turbidity needs more chemical treatment.

At Water Technology BD Ltd, we possess deep expertise in designing, engineering, and implementing Chemical ETPs. We understand the intricate chemistry of diverse industrial wastewaters, enabling us to select the most effective chemical processes and optimize dosing for superior pollutant removal, regulatory compliance, and responsible environmental stewardship.