

Genesis Water Technologies

Mbiotm Advanced Moving Bed Bioreactor (MBBR) Biological Wastewater Systems



About Us

Genesis Water Technologies, Inc. (GWT), is a USA based water & wastewater treatment engineering solutions company with manufacturing capabilities focused on advanced water and wastewater treatment solutions & services focused upon industrial and domestic water & wastewater treatment and reuse applications.

GWT has its corporate office in Florida, USA with offices and local partners across the world to serve our industrial & water utility clients.



What is the Mbio MBBR Wastewater Process?

The GWT Mbio™ moving bed biofilm process is an advanced fixed film biological wastewater treatment process using specialized biofilm carriers suspended in a specifically configured aeration basin or reactor tank.

Each buoyant biofilm carrier is designed to handle the reduction of BOD, COD, TSS, and certain other pollutant contaminants which are absorbed and oxidized through microbiological organisms grown on these biofilm carriers.



GWT Mbio Bio Carriers

How Does The GWT Mbio Wastewater Process Work?

The GWT Mbio™ MBBR consist of an aeration tank or basin containing specially designed submerged and free flowing bio media. The high surface area of the Mbio™ bio media provides plentiful surfaces for bacteria to develop and thrive.

A stainless steel aeration manifold connecting specifically designed GWT AB jet diffusion™ systems on the bottom of the wastewater tank or basin provides both sufficient dissolved oxygen for wastewater pollutant oxidation and reduction through the use of an external air blower. A coarse mesh net above the diffusers eliminates the chance of the biomedica carriers becoming trapped on the bottom of the basin by the diffusers rapid mixing action.

A stainless steel metal or FRP sieve screen is utilized at the outlet of the aeration tank which allows the treated water to move to the post clarification stage of the treatment process while retaining the biomedica carriers inside the tank.

This compact treatment process does not require a return activated sludge pipe line.



Advantages

GWT Mbio™ MBBR Biological Treatment Solutions

Lower construction capital costs versus conventional biological wastewater treatment with applicable design flow rates from 10 gpm (50 m³/d) to 25 MGD (100 MLD) and higher.

Simple to operate with PLC automation of dissolved oxygen levels and temperature, typical 45% reduction in operational related costs versus conventional biological treatment processes due to high Mbio™ bio carrier surface area and efficient micro/nano bubble aeration technology.

Stable under process pollutant variations.

Treatment process can be modified for higher capacity without extensive civil works.

Generates low solids with minimal sludge production and requires no return sludge lines.

Can typically reduce 60-80% of influent soluble BOD, COD, TSS, and oils/greases for new or retrofitting of existing industrial or water utility wastewater systems.



Applications

GWT Mbio™ MBBR Biological Treatment Solutions

GWT Mbio™ moving bed bioreactor (MBBR) treatment solutions have applications in the following industries:

- * Municipal Wastewater Utilities
- * Food/Beverage
- * Petrochemical
- * Pharmaceutical
- * General Industrial
- * Pulp/Paper



GWT Mbio™ MBBR Biological Treatment Client Water Challenges

We take on immense challenges that matter to our clients

- * Water Treatment Recycling and Reuse
 - * Water Resource Scarcity
 - * Regulatory Changes
- * Sustainable Environmental Remediation



Summary

GWT Mbio™ MBBR biological wastewater treatment solutions can be designed and engineered for new treatment plants or it can be integrated into existing activated sludge wastewater treatment systems to reduce operating cost and increase treated water quality with post treatment clarification.

The MBBR systems are designed and engineered to reduce system footprint and construction related capital cost. The flow rate capabilities range from 10 gpm (50 m³/d) to 25 MGD (100,000 m³/d) and higher. These treatment systems can be expanded for additional capacity without significant additional civil works.

The non clogging Mbio™ MBBR bio carrier media and GWT AB Jet Diffusion aeration technology can effectively treat biologically treatable soluble BOD, COD, residual TSS, oil/grease as well as other potential pollutants with typical little generation of sludge solids.

The Mbio™ MBBR process is remarkably more capable of process pollutant load variations versus conventional MBBR or Activated sludge biological treatment systems.



Thank You

Genesis Water Technologies, Inc.
Innovation in Water®

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