An Advanced Biological Process

BioCORE™ Fluidized Bed Bioreactor technology is an advanced biological process that is proven to achieve consistent discharge quality compliance in challenging wastewater applications, while also reducing overall CAPEX and OPEX.
BioCORE™ Advanced Moving Bed Bioreactor (MBBR) is specifically designed to process difficult to treat industrial wastewater. MBBR is well-known as one of the most robust bio technologies and is widely used for processing difficult to treat wastewater applications in refineries, petrochemicals, pulp and paper, steel, and other industries.

BioCORE™ provides effective treatment of high-strength wastewater while achieving a consistent effluent quality that complex with increasingly stringent environmental regulations. The unique design optimizes the contact between the biomass and the wastewater, thus improving, on the one hand, the tolerance to variability in organic load and, on the other hand, the compactness of the system.

BioCORE™ APPLICATION

- Biodegradable Organics (BOD)
- Nitrogen Compounds (TNN or NH4)
- Phosphorus removal (as a nutrient)
- Specific metals (Selenium and Arsenic)

BIOCORE SYSTEM

- Installation cost (less rotating equipment)
- Civil cost impact: from 50% to 40% volume reduction in tanks and/or buildings
- Lower CAPEX
- Lower sludge generation
- Lower mixing energy (disposal sludge, saving in tanks and/or buildings)
- Lower OPEX
- Efficient - Lower Opex and Capex
- Optimized Surface - Media geometry
- Compact - Smaller Space
- Lower downtime, new seeding period
- Easy to fluidize - The special parabolic disc geometry of BioCORE™ helps with uniform distribution and avoids irregular biofilm growth and do not distribute uniformly in the bioreactor which affects the performance. BioCORE™ media has five to six times' higher active surface area (3000 m²/m³) than competing MBBR media available in the market. The parabolic disc shape of BioCORE™ media enables the hydraulic shear forces acting on the media surface to create a constant renewal of biofilm on the media active surface even after years in operation.

Active Surface of New and Used MBBR Media: BioCORE™ requires less media volume and therefore less reactor volume. As a result, the associated tank construction is smaller compared to other processes and thus cost saving in overall capital expenditure.

Energy consumption
- Less power consumption - The special geometry of BioCORE™ helps with uniform distribution and mixing of media in the bioreactor, other MBBR media have irregular biofilm growth and do not distribute uniformly in the bioreactor which affects the performance.
- Geometrically more efficient MBBR - BioCORE™ requires less aeration (mixing energy) to keep the media in suspension. The overall power consumption for BioCORE™-based MBBR system is lower than the competition.

THE HEART OF MBBR TECHNOLOGY

Utilizing a non-clogging carrier with high active surface area is a key for successful MBBR system. Aquatech uses a high speed carrier media that offers several advantages over other MBBR media available in the market.

Space Savings: Smaller footprint - Due to higher active surface area, BioCORE™ requires less media volume and therefore less reactor volume. As a result, the associated tank construction is smaller compared to other processes and thus cost saving in overall capital expenditure.

Active Surface: Higher active surface area - BioCORE™ offers several folds higher active surface area than most of the other well-known MBBR media available in the market. As a result, it is expected that BioCORE™ media volume proposed for a given project is less than the media volume proposed by the competitors, based on the assumption that the specified COD reduction in the inquiry is achievable with MBBR system.

Power Savings: Less power consumption - The special geometry of BioCORE™ requires less aeration (mixing energy) to keep the media in suspension. The overall power consumption for BioCORE™-based MBBR system is lower than the competition.