

PRODUCT SPECIFICATION SHEET

The patented EDI ATLAS-IS™ (Internal Separator) system uses an innovative biological solids separator module and “equilibrium” solids management design to provide advanced treatment in a lagoon-based wastewater treatment system. Conventional lagoon treatment systems that are experiencing any of the following conditions will benefit from the application of the ATLAS-IS system:

- Hydraulic or organic overload
- Inadequate BOD or TSS reduction
- Poor ammonia conversion
- High effluent total nitrogen
- Reduced cold weather performance

Biological processes are limited in their ability to treat wastewater by the mass of microorganisms that can be retained and suspended in the biological reactor. The ATLAS-IS system effectively increases the inventory of microorganisms in the system by operating the lagoon in a complete mix, activated sludge mode with an innovative internal separator for solids retention. The management of biomass allows for a shorter hydraulic residence time, longer sludge age and low food to microorganism ratio for high process stability and maximum cold weather performance.

The synthesis of organic materials in the wastewater results in a net production of biological solids. A long sludge age is used to stabilize the mass of biological solids that are produced and minimize downstream solids management

requirements. Biological solids that are not retained by the internal separators are carried to downstream a partial mix aerated zone for continued stabilization and storage. Finally, a quiescent zone is provided for effluent polishing prior to discharge.

The ATLAS-IS system is provided with aeration to address the oxygen demand and mixing requirements of the process. When combined with an EDI high efficiency FlexAir® diffused aeration system and patented BioMizer™ mixing technology, the ATLAS-IS system is one of the more energy efficient, wastewater treatment processes available in the industry.

The ATLAS-IS system can also be effective in reducing total nitrogen. By operating the complete mix zone at a controlled low dissolved oxygen concentration, co-current nitrification / denitrification is achieved. Operating under this optimized condition provides additional benefits including alkalinity recovery and reduced energy consumption. The system may also be configured with anaerobic or anoxic biological selectors for added process performance and control.

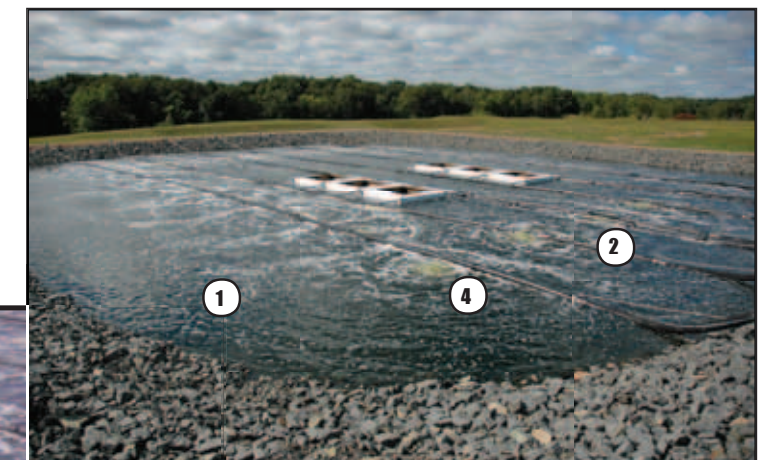
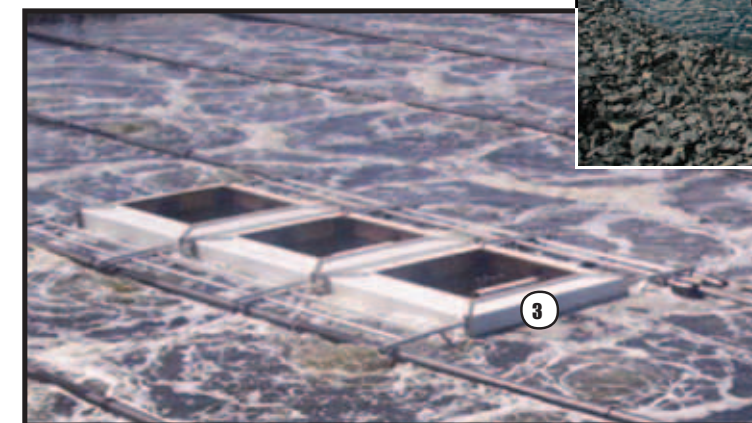
The ATLAS-IS system is one of many efficient, low cost, lagoon-based technologies available from EDI. For detailed information on how to improve the performance of lagoon-based systems, contact EDI or a local EDI representative.

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EDI ATLAS-IS™ (Internal Separator)

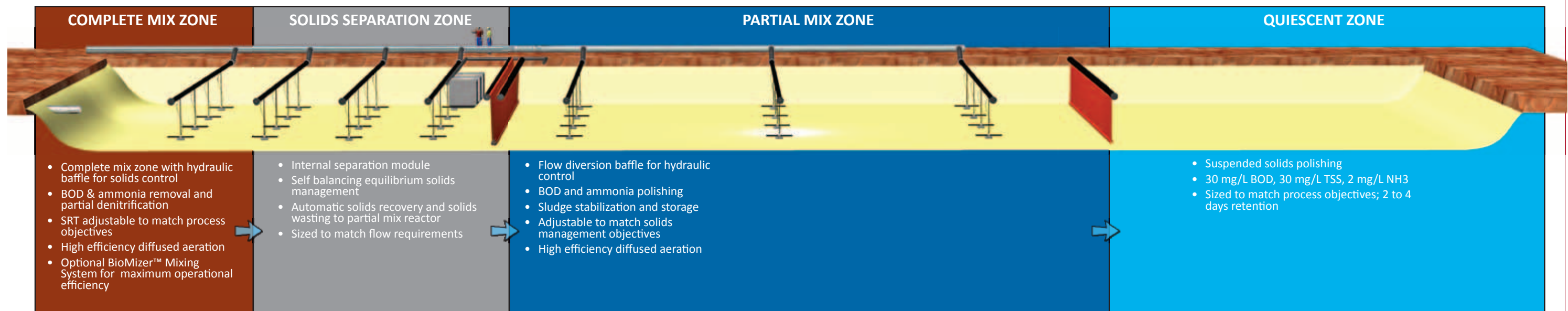
Innovative Biological Solids Separation Technology for Advanced Treatment Lagoon Performance

- Full nitrification; less than 2 mg/L even in cold climates
- High BOD and TSS reduction; less than 30 mg/L
- Complete mix basin with continuous or sequential BioMizer™ designs available.
- High process stability with low f/m ratio and long sludge age
- Continuous inflow and discharge
- Efficient biological solids retention and biomass control with internal separation modules
- Install in new lagoons or convert existing lagoons with no interruption in service
- Simple system; minimum operator interface, self-regulating “equilibrium” solids management design
- Economical solids digestion and long term storage in partial mix aeration zone
- No return or waste sludge pumps
- Low operating costs
- Low maintenance requirements



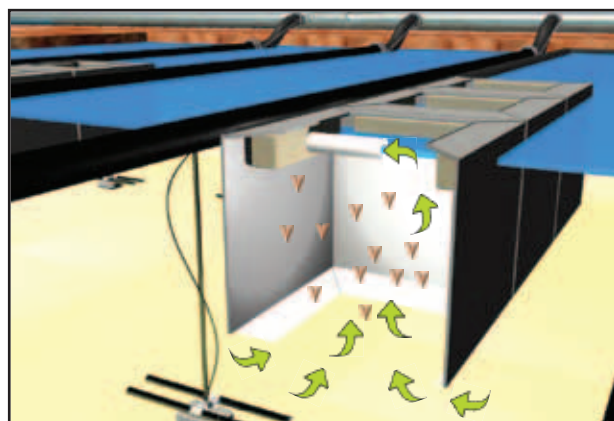
1. Complete Mix Reactor
2. Floating Lateral Aeration System
3. Internal Separator Modules
4. FlexAir® Magnum High Efficiency Diffusers

EDI ATLAS-IS™ (Core System)



The ATLAS-IS system is ideally suited for new or existing lagoons. The system uses multiple core components for optimum system performance and ease of installation including online conversions with no interruption in service.

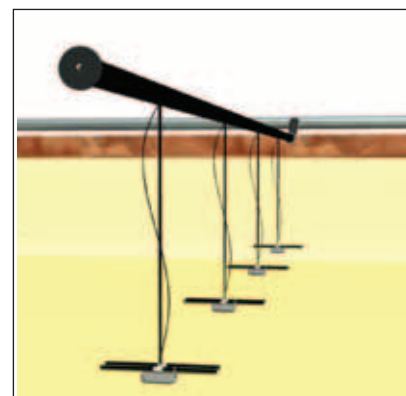
Internal Separator System - The separator device dissipates mixing energy allowing suspended solids to be retained in the complete mix reactor. Retained solids are automatically redispersed by the aeration components in the reactor.



Internal Separator System

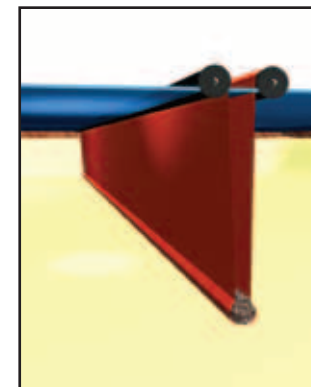
Self-Regulating “Equilibrium” Solids Management - Excess biological solids are discharged to a partial mix, aerated reactor for additional stabilization and long term storage. The inventory of biomass in the complete mix zone is self-regulating. No pumping or operator input is required to control the biomass inventory in the system.

Floating Lateral Aeration System - A floating lateral diffused air system with FlexAir Magnum diffusers is typically used to supply the required oxygen and mixing in the complete mix zone of the process. In mixing limited situations, the patented BioMizer aeration control technology is used to maintain the high operating efficiency of the aeration system.



Floating Lateral Option

Hydraulic Baffle - A hydraulic baffle is used to separate the complete mix and partial mix treatment zones when an earthen berm is not available. The baffle features a positive bottom seal that provides a hydraulic separation between the complete mix and partial mix zones.



Hydraulic Baffle

Submerged Lateral Aeration Alternate - A submerged lateral diffused air system is available for the partial mix zone when heavy ice formation is anticipated. This system configuration puts all aeration components under the water surface for full protection from floating ice.



Submerged Lateral Option

Flow Diversion Baffle A floating flow diversion baffle is used to provide optimum polishing conditions in the final quiescent zone.

When the highest level of effluent quality is required, the following additive technologies may be integrated into the system for enhanced performance. These supplemental technologies may be incorporated at any time to improve the performance and long term viability of lagoon-based systems:

BioShade™ floating cover system reduces UV exposure and minimizes the growth of algae in the system.

BioInsulate™ floating cover system minimizes heat loss and maintains reactor temperatures in extreme cold conditions.

Suspended fixed film BioReef® system increases the mass of biological solids that are retained in the system and provides BOD, TSS and ammonia polishing capabilities. BioReef Media System offers easy of deployment and economical system cost. (Patents pending.)