Sequencing Batch Reactor

Wastewater Treatment Solutions

Mastered Technology
In-depth, long-term expertise allowing for cost effective advanced biological treatment in a single step. A process permitting 98% removal of BOD₅ and TSS as well as nitrification, nitrogen removal and phosphorus elimination.

Operator-Friendly
Integrated control/monitoring PLC-based program, highly developed and able to deal with all plant operating conditions – without any intervention from the operator.

High Flexibility
Inflow/Infiltration (I&I) resilient. One program with two operating modes for flow control strategies – true batch and continuous feed. Consistently meets effluent discharge limits and handles hydraulic and organic load variations. For municipal, industrial and leachate wastewater treatment applications whether in warm or cold climates.

Best Life Cycle
Versatile technology showing proven performances and low-cost operation. High return on investment compared to conventional systems requiring extra mechanized secondary clarifier or chemical (polymer) assisted clarification.
Protecting water courses and drinking water supplies is a shared priority.

With 30 years of experience and hundreds of Ecoprocess™ SBR installations, PTA masters all biological and hydraulic aspects of the technology, applied engineering and design requirements for a wide range of wastewater treatment systems and infrastructures.

Our team of experts will analyse various process configurations and provide support in the selection of the most practical and cost-effective solution for commercial, institutional, municipal and industrial applications.

Installations Across Continents

OVER 1,000 PROJECTS WORLDWIDE
Large Wastewater Treatment Plants
- Targeting advanced biological treatment requirements consistently
- Dealing with Infiltration and Inflow (I&I) in a cost-effective manner (optimal management of influent flow without compromising treated effluent quality)
- Optimal use of space (no secondary clarifier or need for polymer to trap solids)
- Fully automated process (SCADA) to simplify system operation

Leachate Treatment Solutions
- Proven technology to meet all leachate treatment goals
- From large-size landfill applications to smaller sites
- Treats the most difficult effluents, including high ammonia content leachate
- Engineered to maintain all necessary biological and chemical balance to provide nitrification and denitrification, and pH control through alkalinity recovery
- Saves considerable energy and offers high treatment performance without the use of chemicals

Portable Self-Contained Wastewater Treatment Plants
- In-house prefabricated
- Short delivery time
- Ready-to-use unit installed after a septic tank
- Ultra modular unit ideal for small applications with phasing
- Perfect solution for temporary workers camps, relief camps and remote Northern villages

1. Influent
2. Control Panel
3. Transfer Pumps
4. Self-Aspiration Jet (Oxjet™)
5. Waste Activated Sludge Pump
6. Floating Decanter
7. Treated Effluent
Helping Clients Solve Wastewater Issues

Ecoprocess™ SBR combines the advantages of true batch and continuous flow approaches. The system is initially provided with a true batch flow control strategy with no-inflow steps (react, settle and decant) – an integral part of the treatment cycle. This approach is optimal for high strength wastewater.

Then, beyond a specific set point and at very high flow (ex: influent dilution by storm water), the operator can set the system to automatically shift to a continuous flow control strategy – all available SBR tanks thus receiving the flow continuously. As a result, neither significant nor sudden flow rate variations can impact or diminish treatment efficiency.

Ecoprocess™ SBR takes full advantage of both of these control strategies, making it possible to avoid system overdesign for occasional high flow periods.

Key Expertise
- Team of experts in biological treatment processes and hydraulics
- Designs adapted to needs
- Advanced control and monitoring for optimal process efficiency
- Continuous controlled aeration meeting effluent requirements with low energy consumption

Smart Sludge Management
- Ecoprocess™ SBR can be designed to reach significant biosolid reduction and high sludge stabilization. No need for a separate sludge digester.
- Excess sludge can be pumped back to a septic tank – eliminating the need for onsite sludge treatment. Ideal solution for handling small flow systems. Saving costs and energy.
Superior Features and Flexible Operation

In-House Biological and Hydraulics Simulation Platform

The biological and hydraulic functionalities of each Ecoprocess™ SBR system are tested using in-house simulation software certifying the design will bear sustained peak flows. Optimization of operational and equipment costs through lean design.

- Design simulation using specialized software
- Hydraulic simulation validating the impact of peak flows
- Biological simulation validating compliance with all effluent requirements

SwingCanter™
The Most Robust, Reliable and Passive Floating Decanter Available

Most Ecoprocess™ SBR plants include our time-tested highly reliable SwingCanter™ surface decanter – a design developed and improved by our IR&D team over the last 20 years. The SwingCanter™ has proven its reliability in numerous installations and has been evaluated and selected by many engineers for its superior construction and flexible operation.

- Non-mechanical (passive) surface floating design
- Heavy duty stainless steel construction
- Robust structural knee-joint concept resistant to torsional and lateral forces while providing optimal angular operation over a large surface
- PosiAir™ solids exclusion system using simple-air cushion operation, eliminating the need for submerged mechanical valves
- Standard design using a motorized valve located outside the reactors for easy maintenance. Valve-less configuration also available
- No spring-loaded valves used to provide solids exclusion make full-depth decanting possible
- Highly reliable and maintenance-free equipment
Meeting Effluent Requirements under all Conditions

Supervisory Control and Data Acquisition (SCADA)

Our software programs are the core of our technology and are developed and supported by our own team of experts. Electrical concepts are established within a well-defined architecture, ensuring a high quality product which is easy to service and/or to modify.

Mid to large Ecoprocess™ SBR stations are equipped with our SCADA system which monitors and edits all pre-programmed parameters on the treatment plant. It is an ideal communication and service platform to liaise with the PTA service team. Control panels and SBR software programs are duly tested prior to shipping using a unique accelerated mode simulator. Hence, only minor adjustments might be required at start-up.

Our Ecoprocess™ SBR stations are typically equipped with all the necessary software and hardware to enable easy and direct support via Internet.

PTA also offers a local/remote operating system option that includes a PLC-Laptop-Beeper-Modem system to increase work efficiency and save operator time. This state-of-the-art control system guarantees full satisfaction from every Ecoprocess™ SBR installation designed, supplied, commissioned and monitored by PTA.

**Historical Data and Instant Reading**
- Flow
- Water level
- Dissolved oxygen
- Suspended solids
- pH
- Water temperature
- UV intensity

**Intelligent System**
- Alerts in case of loss of communication with instrumentation
- Critical flows to be treated
- Failing electromechanical components

**Telemetry**
- Support/training
- Alarms
- Troubleshooting

A major asset for the client
A reliable tool the operator can trust
Ecoprocess™ SBR

Treatment performances

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Guaranteed Performance</th>
<th>Attainable Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBOD₅</td>
<td>≤10 mg/L</td>
<td>≤5 mg/L</td>
</tr>
<tr>
<td>TSS</td>
<td>≤10 mg/L</td>
<td>≤5 mg/L</td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>≤10 mg/L</td>
<td>≤8 mg/L</td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>≤0.5 mg/L</td>
<td>≤0.3 mg/L</td>
</tr>
</tbody>
</table>

Nutrient Removal

- High-yield technology offering stable performances (see table)
- Enhanced Biological Phosphorus Removal (EBPR) leading to significant savings on chemical use (Alum)
- Complete nitrification and substantial nitrogen removal
- Simultaneous nitrification-nitrogen removal can be further enhanced with sequence fine-tuning to reduce energy consumption

Nitrogen removal during performance testing
Ecoprocess™ SBR, Essex, ON
A Trusted Partner

For more than 90 years, Premier Tech has been building its know-how and reputation on the diversity and technological expertise of its 3,000 team members located in 23 countries around the world. As one of Premier Tech’s business units for over 20 years, Premier Tech Aqua (PTA) has become a world leader in the field of onsite and decentralized wastewater treatment technologies for the residential, commercial, community, and industrial sectors.

PTA offers a local representation in India to better serve all communities. From large municipal wastewater treatment plants to packaged integrated applications in small flows, our teams offer small communities, municipal and industrial clients their complete support at every step of the project – from the design and engineering of the system until the successful commissioning, service and operations.

Our technology solutions set market standards worldwide. One of them will meet your needs.

The Strength of Premier Tech Aqua

- Dynamic team of 800 team members ensuring a local presence in 10 countries
- 100,000 Ecoflo® Biofilters installed in the world
- 1,200 municipal, commercial, community, institutional and industrial installations
- Network of 2,000 installers, 250 service partners and 420 distribution centers
- 25 experts dedicated to IR&D
- 400,000 preventive maintenance performed in 20 years
- 300,000 peripherals sold in the world
- Portfolio of 73 international patents
- 136,000,000 litres of water treated every day
- Offices in North America, Europe and Asia
- Treatment performance surpassing regulatory requirements