

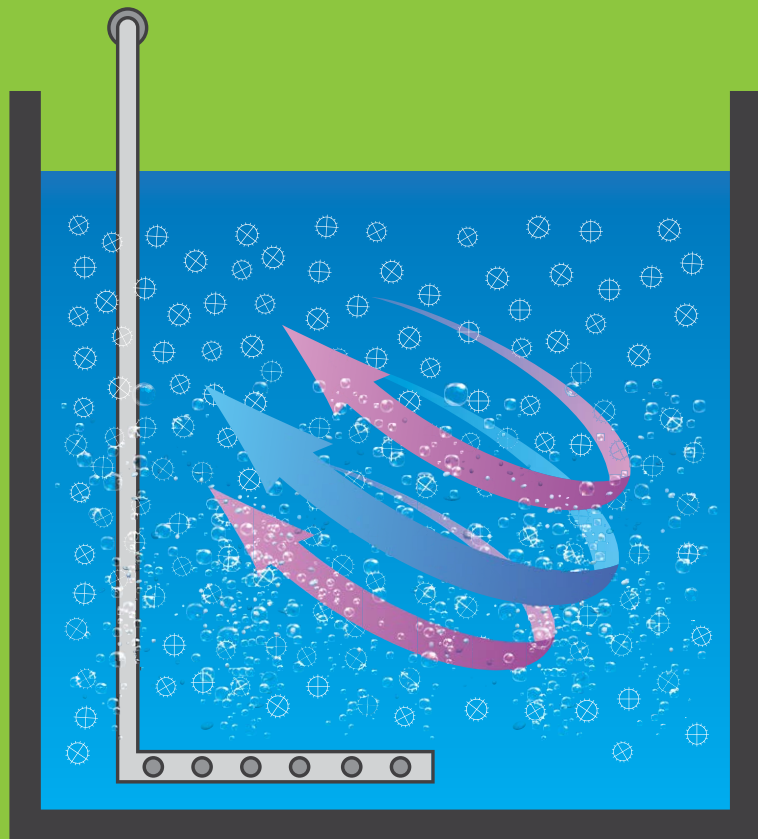
Advanced Wastewater Treatment Solutions

Exceptional Performance. Proven Reliability.

Options for:

- + High Strength Wastewater
- + Nitrogen Removal
- + Phosphorus Reduction
- + Wastewater Reuse





The Moving Bed Biofilm Reactor (MBBR)

The Moving Bed Biofilm Reactor (MBBR), originally invented at the Norwegian University of Science and Technology, incorporates the combined benefits of Activated Sludge and Attached Growth wastewater treatment processes. RH2O® North America adopted and professionally tailored MBBR technology to guarantee performance in the unique Canadian climate and meet specific regulatory and project requirements.



Self-cleaning media at the core of the process

The core of the process is the specially designed biofilm carrier media made from High-Density Polyethylene (HDPE). The media provides a high surface area for optimal biofilm growth to treat the wastewater. The aeration system completely mixes the media inside the biological reactor providing access to oxygen. The media design and mixing process ensures that the media is self-cleaning, will not clog, and does not require replacement.



Applications for RH2O®

Every RH2O® system is uniquely designed and tailored to the needs of each project, from new construction to retrofit or replacement of existing installations. Our systems are flexible and can be constructed from concrete, fiberglass, or polyethylene reducing capital investment using locally manufactured tanks.



EXAMPLES OF APPLICATIONS:



Campgrounds, RV, and Mobile Home Communities



Commercial Plazas and Malls



Communal Subdivisions/Rural Communities



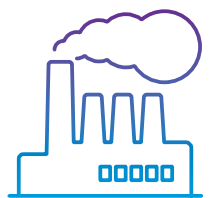
Resorts and Marinas



Restaurants, Rest Areas, and Truck Stops



Schools Institutional Facilities

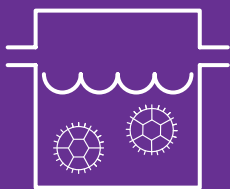


Wineries, Breweries and Industrial Wastewaters

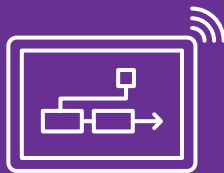
RH20[®] Advantages



RH20[®] Design Software provides process simulation and proactive troubleshooting to ensure each project performs to the most stringent of effluent requirements.



Moving Bed Biofilm Reactor (MBBR) optimized to efficiently remove carbon and ammonia in the smallest footprint even at low wastewater temperatures.



PLC Control System with remote monitoring provides industrial-grade automation with full monitoring and management of control equipment.



The cloud server acts as a real-time, 24-7 virtual operator, proactively monitoring vital data collected from the control panel.



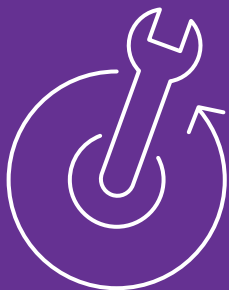
Self-cleaning media doesn't clog or need replacement and is resilient against hydraulic and organic shock loads.



Dissolved Oxygen (DO) Sensor simplifies aeration control to maintain consistent and optimal performance and reduce energy costs.



Our systems can be designed as a complete stand-alone process or may be retrofitted/upgraded to assist other technologies meet performance requirements.



Retrofit/Upgrade Other Treatment Systems

The benefits of our MBBR system can be used for upgrading or expanding existing wastewater treatment plants. From ammonia removal (nitrification) to assistance with high strength wastewater BOD removal, our system can be easily retrofitted in an economical package to help meet increasing regulatory standards.

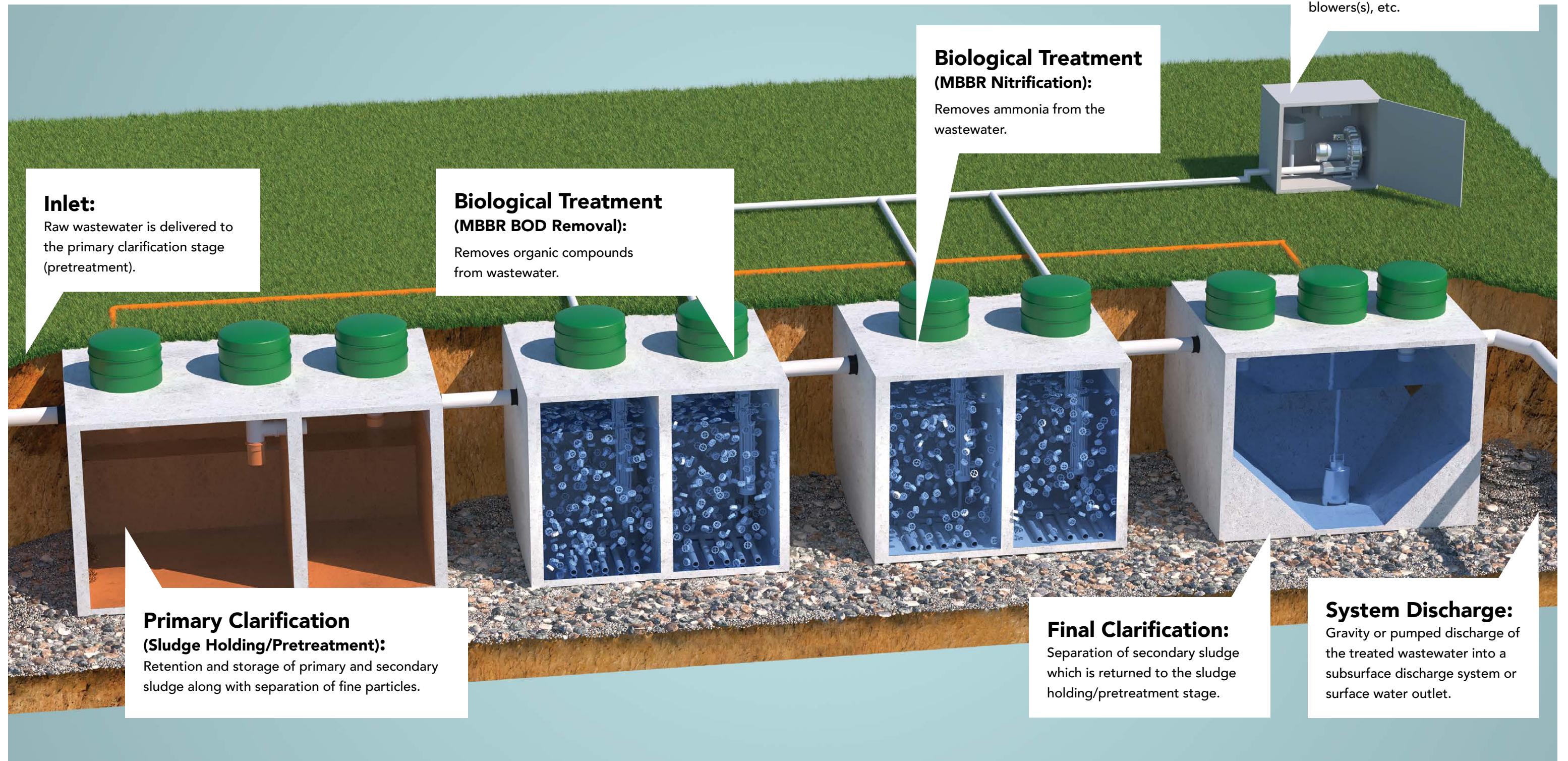


Automated Aeration Control eliminates complexity of operation and reduces maintenance inspections.



RH20[®]

Treatment Process



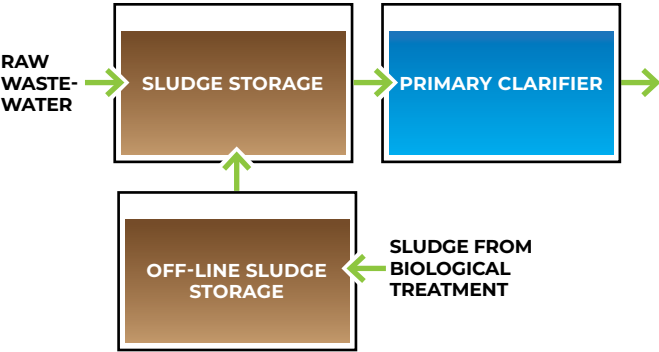
Modular Process

RH2O® provides a range of flexible treatment modules and process concepts as effluent discharge standards become more stringent, especially for nitrogen and phosphorus removal, as well as disinfection of the wastewater. These modules can be easily retrofitted to an existing installation or expanded for tertiary wastewater treatment in new projects. RH2O® also specializes in high strength wastewater applications with installations across the Canada.

Innovative Hybrid Flow Design

RH2O® has never settled down when it comes to innovation. We have developed a hybrid flow regime to combine the advantages of both plug and mixed flows in our bioreactors. The use of partitioned walls in our bioreactors protects from short circuiting and skyrockets the reliability and performance of our treatment systems.

Off-line Sludge Storage

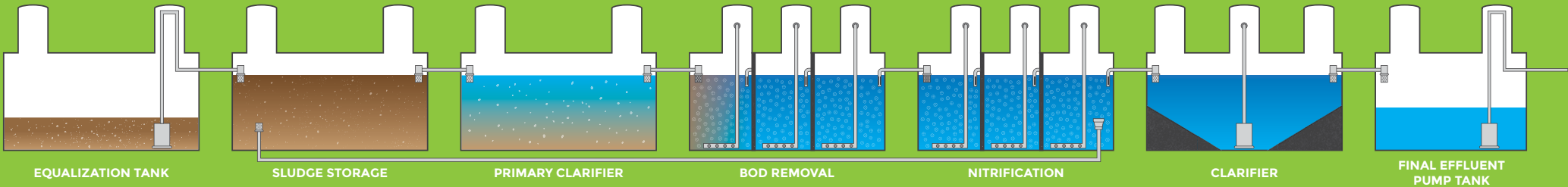


Off-line Sludge Storage is an optional add-on that further protects the system from various hydraulic, PH and toxic chemical shocks.

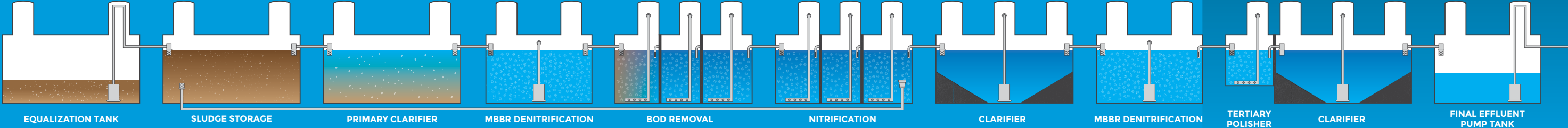
Effluent Discharge Quality:

- CBOD < 10 mg/l
- TSS < 10 mg/l
- Total Ammonia Nitrogen (NH4-N) < 1 mg/l
- Total Inorganic Nitrogen (Ntot):
 - Standard Process 30 – 50% Reduction
 - Standard Process with Recirculation ≤ 80%
 - Enhanced Denitrification (Pre-DN and Post-DN) up to ≤ 2.5 mg/l
- E.Coli / Fecal Coliform:
 - ≤ 200 CFU/100 mL (with UV)
 - ≤ 2.2 CFU/100 mL (with filter and UV)
- Phosphorus (Ptot):
 - Upstream of Final Clarification ≤ 1 mg/l
 - Separate Flocculation Reactor ≤ 0.5 mg/l

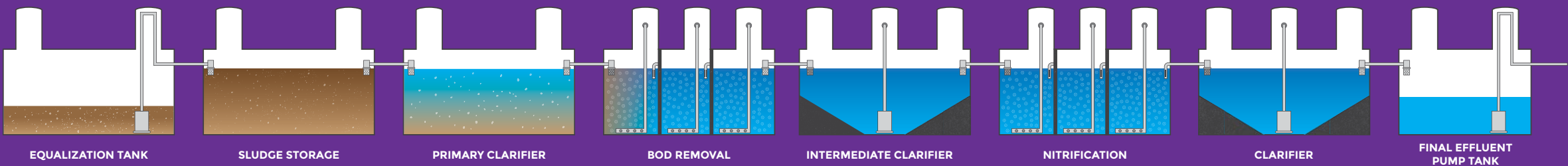
Standard Configuration with Nitrogen Removal



Standard Configuration with Enhanced Nitrogen Removal



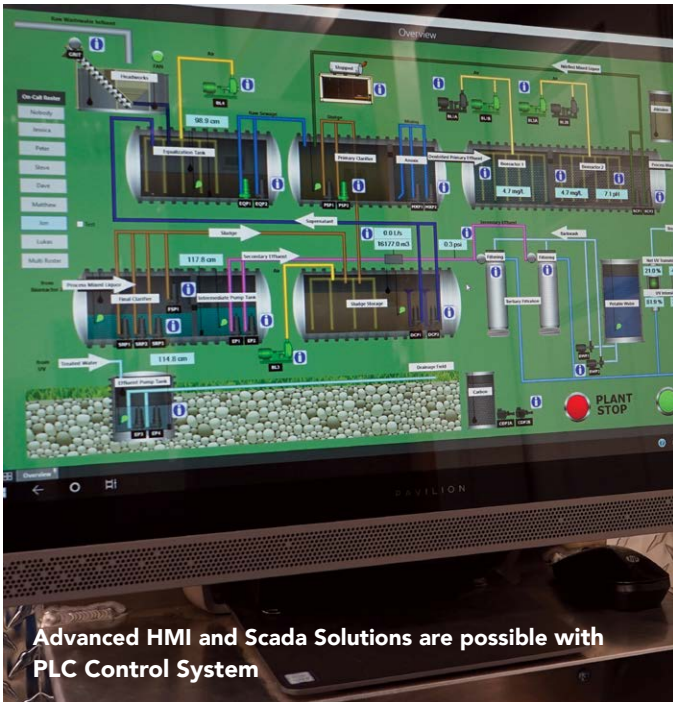
High Strength Wastewater



Municipal technology for cost-effective commercial onsite wastewater systems

A specially designed optical Dissolved Oxygen (DO) sensor integrates with the RH2O® Control System to form an innovative automated aeration control system. The sensor will simplify aeration control to maintain consistent oxygen levels for optimal performance and reduce energy costs. The DO sensor is installed inside of the Moving Bed Biofilm Reactor (MBBR) where the carrier media self-cleans the sensor to prevent fouling.

RH2O® Aeration Control System brings Municipal treatment-like technology to small commercial onsite wastewater treatment systems as an affordable cost-effective package. In many cases the sensor will pay for itself in less than a year in terms of energy savings and reduced maintenance visits while ensuring constant around the clock performance. The Automated Aeration Control eliminates any complexity or tuning the system that previously could only be done through a site visit.



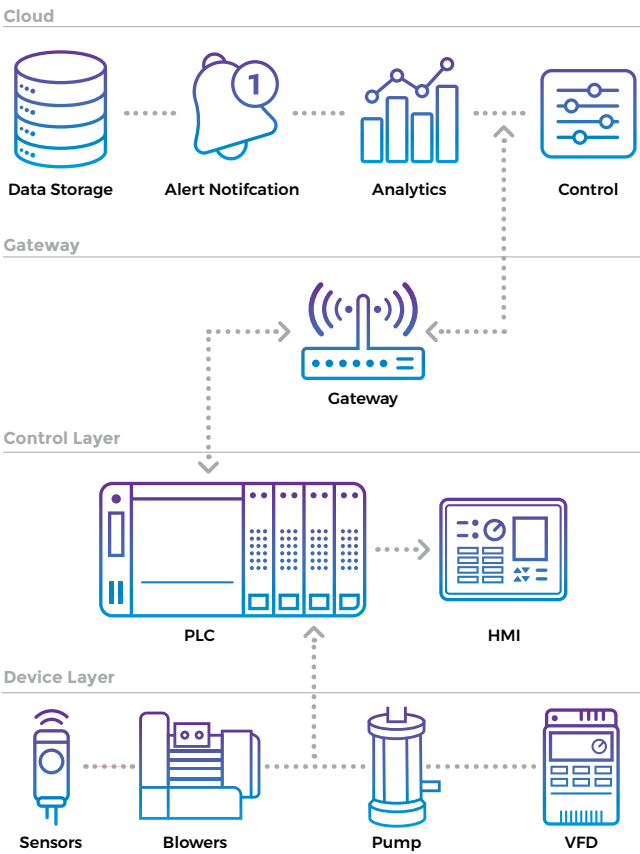
Remote management = peace of mind

Our control system uses a Program Logic Controller (PLC) with touch display screen (HMI) for reliable onsite operation.

The PLC controls and communicates with the local devices connected to the control system (i.e. blowers, pumps, DO sensor, etc).

Our Industrial Internet of Things (IIoT) gateway connects to the PLC to securely transmit data to our cloud server. The cloud server provides full operational surveillance of each system with alarm notification via email and SMS along with full data storage and analytics.

Operators can remote monitor and control the PLC through the cloud server.



Continuous improvement is part of our culture

Our team is dedicated in finding you the best solution. Feedback from operation and maintenance providers has been key for development and continuous improvement of our products. RH2O® operates numerous residential and commercial wastewater treatment plants to provide continuous feedback to our Engineering/Design Team. We have gathered a wealth of experience which is put to use for each new project.



RH2O® is a leading manufacturer of onsite wastewater treatment systems for commercial applications across Canada.

With decades of expertise as our foundation, we are looking to the future and developing better, more effective solutions while maintaining our excellence in world-class service.

Visit our website for case studies and for more information.
Our professional engineering team is ready to help size and design a system to meet your requirements.



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