



Waterloo Biofilter Systems Inc.

on-site wastewater treatment

Advanced Wastewater
Treatment for Commercial
and Communal
Applications




U.S. EPA's Environmental
Technology Verification Program
www.epa.gov.etv



Is Yours a Waterloo?

Developed at the University of Waterloo in Ontario, the Waterloo Biofilter® is an advanced septic system ideal for commercial, light industrial, LEED®, and communal applications. Since 1991 the Waterloo Biofilter has proven itself to be the most reliable advanced wastewater treatment system available. The key to its success is the engineered filter medium that is optimized to be stable over long periods of time, accept very high loading rates without plugging, provide an aerobic treatment environment passively, and absorb wastewater thereby increasing retention time and treatment levels.



Waterloo Biofilter filter medium provides an ideal environment for beneficial bacteria to thrive and degrade contaminants found in wastewater

Advantage

Waterloo Biofilter

Permanent Filter Medium	Filter medium is warranted to last 20 years in residential-strength applications, and will likely last much longer
Energy Efficient	Provides aerobic treatment passively, requiring up to 85% less power than competing activated sludge technologies
Low Maintenance	Few moving parts, no high energy and high maintenance air compressors or air diffusers, maintenance is reduced to a simple inspection and does not require a skilled operator
Treatment Consistency	Maintains high levels of treatment during surge flows, low flows, and seasonal use, preventing solids from escaping and potentially clogging the disposal bed
Lowest Long Term Operating Costs	With a permanent filter medium and very low power consumption, Waterloo Biofilters cost you less to operate than any other advanced treatment unit
Nitrogen Removal	Removes 50-65% of total nitrogen, with WaterNOx® BAF available for TN < 5mg/L in the final effluent
Cold Weather Performance	Developed for the Canadian climate! Proven performance in cold climates, without the need to heat sewage or rely on summer testing only
No Aerobic Sludge Management	No activated sludge to manage, competing aerated sludge technologies typically require annual pumping to maintain treatment levels
Small Footprint	Compact nature requires less area for installation, minimizes mounding and tree removal, allows you to increase the use of your property
No Short Circuiting	Provides a physical barrier between raw sewage and the environment, even during power outages no untreated sewage enters the environment
Wide Product Selection	Available in many configurations, with one suitable for your preferences, your property, and your application.

**Engineered & Manufactured
in Ontario!**

Waterloo Biofilters are known in the onsite industry for their outstanding treatment consistency, longevity, low power consumption, and Nitrogen removal capabilities.

Four Flexible Solutions

Packaged Wastewater Treatment Plant



SC Shipping Container Biofilters™ are pre-assembled, modular, and are shipped anywhere as a standard ISO container. SC treatment units are customizable, painted to blend in with your site, and require minimal onsite installation. One SC-40 unit can treat effluent from 25 three-bedroom homes to tertiary quality.

Expandable Treatment Plant



Ideal for phased-in developments, **PE-5 Biofilters™** are modular, lightweight, and come pre-assembled for ease of installation. Housed in a new or existing maintenance building, PE-5's can easily be added over time as the development progresses, reducing up-front costs.

Below Ground & Out of Sight



Basket Biofilter™ systems are completely below ground, sized for locally available concrete tanks, and can be scaled up for use with higher flows. Baskets are rigid and strong, yet lightweight and easy to maneuver onsite. Multiple tanks can be installed in parallel to further increase treatment capacity.

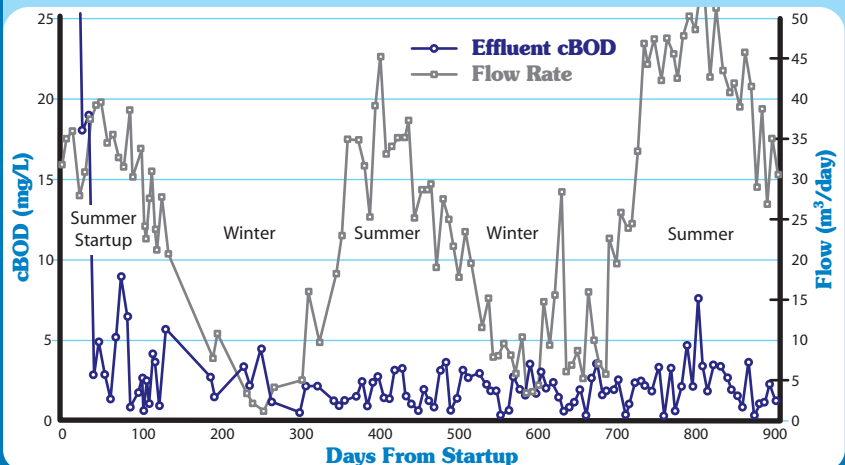
Maximize Treatment Capacity



Bulk-Filled Biofilters™ are completely below ground and maximize the volume of tankage used for treatment. Local concrete or fiberglass tanks are sourced and modified onsite as Waterloo Biofilters. Bulk-Filled tanks require more installation time, but reduce overall tankage costs and are a good option for higher flows.

Waterloo Biofilters easily handle variable flow rates without affecting treatment, ideal for seasonal applications like golf courses, campgrounds, and resorts.

Rattlesnake Point Golf Club



Make your commercial wastewater treatment project a success with Waterloo Biofilter®

Waterloo Biofilter® provides a permanent combination of biological treatment and physical filtration of wastewater not matched by any other treatment technology. Our unique and patented process uses a filter medium that is highly resistant to clogging, has the highest surface area-to-volume ratio in the industry, and is warranted to last 20 years in residential sewage-strength applications!

Waterloo Biofilter has extensive experience treating commercial, high-strength, and communal wastewaters for applications such as golf courses, resorts, campgrounds, LEED® projects, condominiums, truck stops, churches, schools, grocery stores, eco-lodges, and many more.

Waterloo Biofilters work like a low-pressure membrane, providing a physical barrier that wastewater must pass through for treatment before entering the environment. Even when the power supply is interrupted, the Waterloo Biofilter's design ensures no untreated sewage enters the environment, so you can feel confident you are protecting your clients, your property, and your water supplies from contamination.

Time-Proven Technology

The Waterloo Biofilter has been proven in many thousands of installations across North America since 1991. No other technology can match the Waterloo Biofilter's:

- Very low energy usage
- Few moving parts & low maintenance requirements
- Tertiary quality treatment even in very cold climates
- High level of Nitrogen removal
- Aesthetically pleasing impact on your property

We will work with your project engineer to provide a solution that is cost-effective, easily maintained, has minimal impact on your property, and consistently exceeds your effluent requirements. A number of Waterloo Biofilter system add-ons are available to provide advanced system functionality such as:

- Reuse for toilet flushing or irrigation
- WaterNOx® BAF for enhanced nitrogen removal
- Phosphorus removal
- Remote monitoring service
- UV disinfection or chlorination

**The Choice is Clear
Is Yours a Waterloo?**

Third Party Cold Weather Testing Results

Environmental Technology Initiative¹

	Waterloo Biofilter	Removal
cBOD ₅	8 mg/L	95%
TSS	4 mg/L	98%
NH ₄ -N	0.5 mg/L	98%
TN	14 mg/L	59%

¹ US EPA Twenty-four month cold weather testing program installed in triplicate

Environmental Technology Verification²

	Waterloo Biofilter	Removal
cBOD ₅	7 mg/L	96%
TSS	5 mg/L	97%
NH ₃ -N	0.7 mg/L	97%
TKN	1.6 mg/L	96%
TN	13 mg/L	65%

² US EPA & NSF Fourteen month cold weather testing program

Waterloo Biofilter Shallow Area Bed Testing³

	Waterloo Biofilter + Shallow Area Bed	Removal
Fecal Coliforms	<1 cfu/100 mL	>99.999%

³ Buzzards Bay Test Facility Report

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