



Oxelia™

OXIDATION-ENHANCED BIOLOGICALLY ACTIVE FILTRATION



In the battle with hard-to-treat contaminants, drinking water just got a powerful new ally. Leopold Oxelia™ oxidation-enhanced biologically active filtration.

Harnessing the power of oxidation to enhance the treatment of a biologically activated carbon filter (BAC), Oxelia breaks down and removes the most difficult contaminants, including taste and odor-causing geosmin, 2-MIB, and contaminants of emerging concern (CECs). Backed by Wedeco's expertise in ozone and UV treatment, YSI/WTW precision instrumentation and Leopold's unparalleled filtration capability, the Oxelia system can be configured precisely for your water matrix, energy and regulatory requirements for the most cost-effective solution.

Multi-barrier approach for multiple treatment needs

The Oxelia system provides a multi-barrier defense, oxidation plus filtration, which:

- Destroys recalcitrant organic micropollutants
- Disinfects
- Removes pathogens
- Eliminates oxidation and disinfection byproducts
- Produces water with high biostability

The Oxelia system's oxidation step uses ozone and ozone-based advanced oxidation process (AOP), or UV-based AOP, to break down difficult organic carbon compounds into smaller, biodegradable components while providing an oxygen-saturated water. In the BAC step, naturally occurring microorganisms attach to the granular activated carbon (GAC) fixed bed filtration media, developing into a BAC. The microorganisms assimilate these partially oxidized organics, using the dissolved oxygen to complete the destruction of the total organic carbon (TOC). The result? A disinfected, biologically stabilized finished water much lower in contaminants, TOC, turbidity and suspended solids.

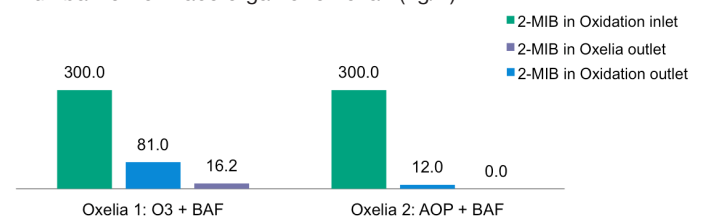
The Oxelia system's oxidation step combined with the filtration achieves the required disinfection credits, inactivating, oxidizing and filtering Giardia and Crypto as well as viruses. The reduction in total organics produces finished water with high biostability. Higher biostability reduces chlorine demand in the distribution system, helping to maintain chlorine residuals while reducing disinfection byproducts such as THMs.

What can the Oxelia system treat?

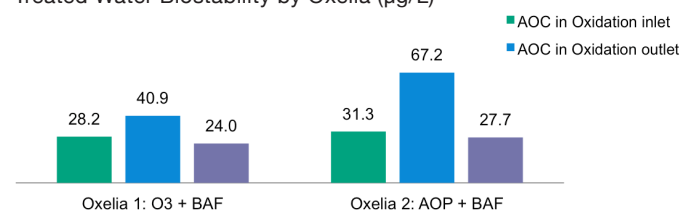
- Taste and odor caused by geosmin and 2-MIB
- Residual pharmaceuticals
- Endocrine disrupting compounds (EDC) in medications and personal care products (PCP)
- Eliminates oxidation and disinfection byproducts
- Pesticides
- Micropollutants from industrial discharges such as NDMA, MTBE and 1,4-dioxane

Get the results you want

Multibarrier for trace organic removal (ng/L)



Treated Water Biostability by Oxelia (µg/L)





Oxidation-enhanced biologically active filtration systems **customized for your potable water.**

Designed with flexible options—because different contaminants require different solutions

The Oxelia system has several options for a custom design based on your specific needs. Options include:

1

OZONE + BAC

for year-round taste and odor control, as well as destruction of certain trace organics, disinfection and removal of disinfection and oxidation byproducts.

2

UV + PEROXIDE (UV-BASED AOP) + BAC

is ideal for chemicals degradable by UV photolysis such as NDMA, year-round disinfection and seasonal taste and odor.

3

OZONE + HYDROGEN PEROXIDE (OZONE-BASED AOP) + BAC

for taste and odor control, disinfection, algae blooms, chemical spills, destruction of trace organics and removal of disinfection and oxidation byproducts, including bromate control.



Efficiency and reliability at every step

Leopold leads the world in filtration innovation, from pioneering underdrain designs to control protocols that optimize filtration efficiency and minimize backwash volume. Extensive testing determined that granulated activated carbon (GAC) produced superior results as a biologically activated filter media when combined with oxidation. BAC filtration can reduce oxidized organics to extremely low levels, in many cases below detection limits. The Oxelia system also significantly extends the service life of the GAC over conventional GAC filters, reducing operation and GAC replacement and regeneration handling costs.

Wedeco's ozone and UV systems are known globally for robust reliability and energy efficiency. With tens of thousands of installations worldwide, treating all kinds of water quality, for all sorts of treatment objectives, Wedeco has the expertise you can trust for your treatment requirements.

Combined, the synergy between the two provides extremely efficient operation and low life cycle costs.

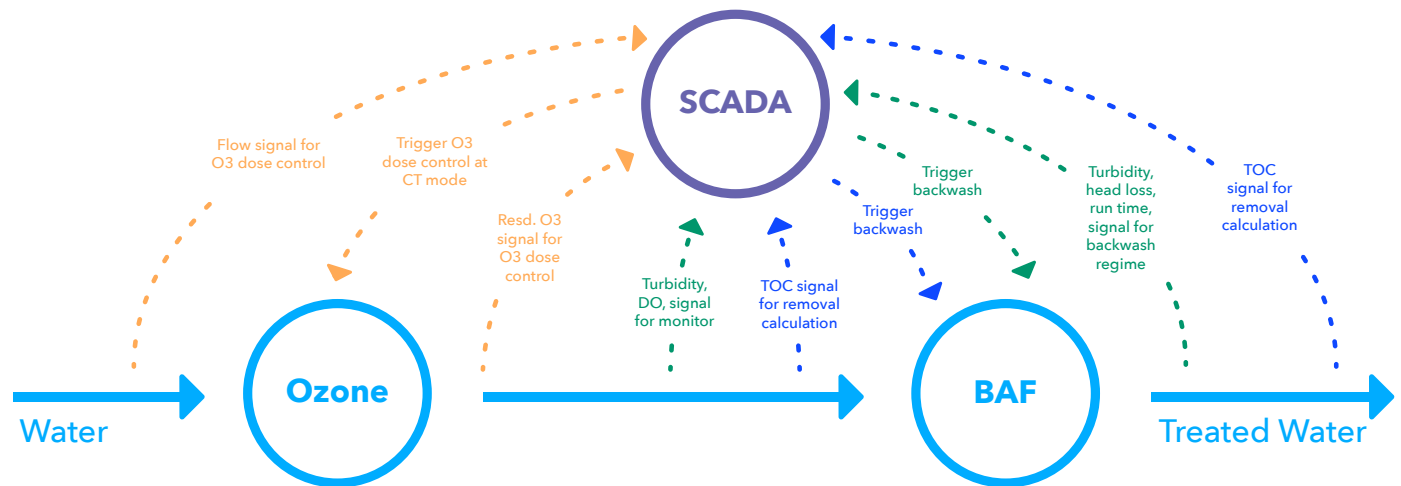
Say goodbye to PAC and hello to higher quality water with safer operation

The Oxelia system eliminates the need for PAC systems, allowing you to say goodbye to handling and dosing hazards and costs associated with replacement. The Oxelia system is safer to operate and produces superior-tasting water with unparalleled biostability for higher quality throughout the distribution system.

For optimal effectiveness and efficiency, control is key

As an integrated solution, the oxidation step and filtration step are interdependent. The Oxelia system's integrated analytics and feedback control provide safe, reliable and cost-effective process operation.

OZONE ENHANCED BIOFILTRATION FOR TASTE AND ODOR CONTROL



Real-time for real control, real protection

- The advanced online sensor network monitors both influent, intermediate and effluent parameters in realtime for enhanced process reliability as well as continuous treatment compliance. You get assured protection of human health at maximum efficiency, which minimizes operating costs.
- The Oxelia system's centralized monitoring and control system utilizes a single PLC and interface for simplicity of design and operation.
- Integrated controls allow for real-time adjustment of ozone dosage or UV dosage, responding to fluctuations in flow rate and water quality to optimize operation and efficiency.
- Controls integrate the oxidation and filtration operations, sequencing backwash operations and controlling dosages to ensure a healthy biofilter for optimal turbidity, TOC and oxidation and disinfection byproduct removal.



Optimal design + optimal control = lowest life cycle costs for your treatment objectives.

The best fit technology—from bench testing to pilot testing, Xylem’s experts can evaluate your needs and determine the system that is right for you

Xylem’s Wedeco experts lead the field in UV and ozone innovation, while Leopold is the recognized leader in filtration design. They have spent years evaluating and perfecting the interaction between the oxidation step and the biological filtration step that together make up the Oxelia system. At test sites in Singapore, Australia and Europe, with a variety of water matrices, over a broad range of operating conditions and contaminant concentrations they have fine-tuned the designs and operating parameters required for efficient and effective operation.

With a full complement of testing facilities as well as pilot testing units for on-site evaluation, Xylem’s experts can evaluate your requirements and your contaminant concentrations, and determine the best possible fit. Their extensive knowledge base as well as the Oxelia system’s broad product lineup, allow them to tailor a system specific to your needs.

Retrofits welcome

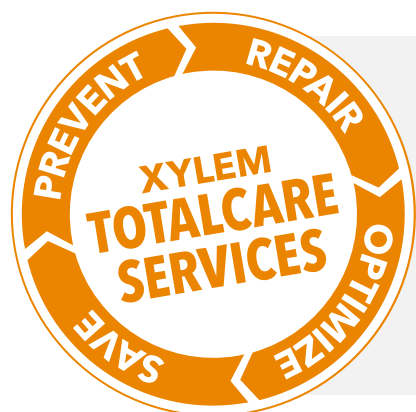
In many cases, an existing plant can be retrofitted to an Oxelia system with minimal disruption to operations. It may be as simple as retrofitting the filters to function

as biofiltration systems, exchanging the PAC feed for an ozone or UV system and upgrading the system controls. Leopold and Wedeco process experts can evaluate your existing system and recommend the right upgrades to meet your regulatory requirements.

Expect Xylem support—from early design through startup and beyond—performance guaranteed

Xylem’s support doesn’t stop at design. As a single source provider, Xylem will be responsible for complete system delivery and startup support, ensuring that nothing gets overlooked. With that commitment comes the Oxelia system’s performance guarantee. The Oxelia system will produce finished water qualities that meet your requirements and will assure your compliance—guaranteed.

With ongoing support through Xylem’s Total Care Services, Xylem’s expert local assistance can also provide preventative maintenance and continued evaluation to ensure that the Oxelia system maintains its optimal performance, for years to come.



**GUARANTEED PERFORMANCE.
GUARANTEED COMPLIANCE.
THAT'S XYLEM'S PROMISE.**

A close-up photograph of a hand turning a chrome faucet to fill a clear glass with water. The faucet and glass are covered in condensation droplets, suggesting the water is cold. The background is a blurred outdoor setting with a blue sky and green foliage.

Together... let's solve
today's treatment
challenges now.

Let's solve water.

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to www.xyleminc.com



Xylem
227 South Division Street
Zelienople, PA
Tel +1.724.452.6300
Fax +1.724.452.1377
www.xylem.com/treatment