MARCH 2024

ENDURING INSTALLATION: BEST PRACTICES FOR SUSTAINABLE TREATMENT

In this infoDBO, we will allow you to:

Dive into the heart of our commitment, which is to make a septic system sustainable and high-performing in wastewater treatment.

Explore the reasons behind the exceptional longevity, robustness, and purification performance of System O)) installations.

Learn why, after more than 35 years of experience and extensive testing of our solutions in wastewater treatment, we can assert that the System O)) approach consistently provides effective treatment over time.

Understand our desire to share this experience with you through our documentation, which, when read and mastered, ensures that your System O)) installation will be sustainable throughout your life.

Without a doubt in our minds, after reading our infoDBO, you will find it easy to understand why we claim that our System O)) solutions are both enduring and high-performing in terms of wastewater treatment.

OPERATION OF THE TECHNOLOGY

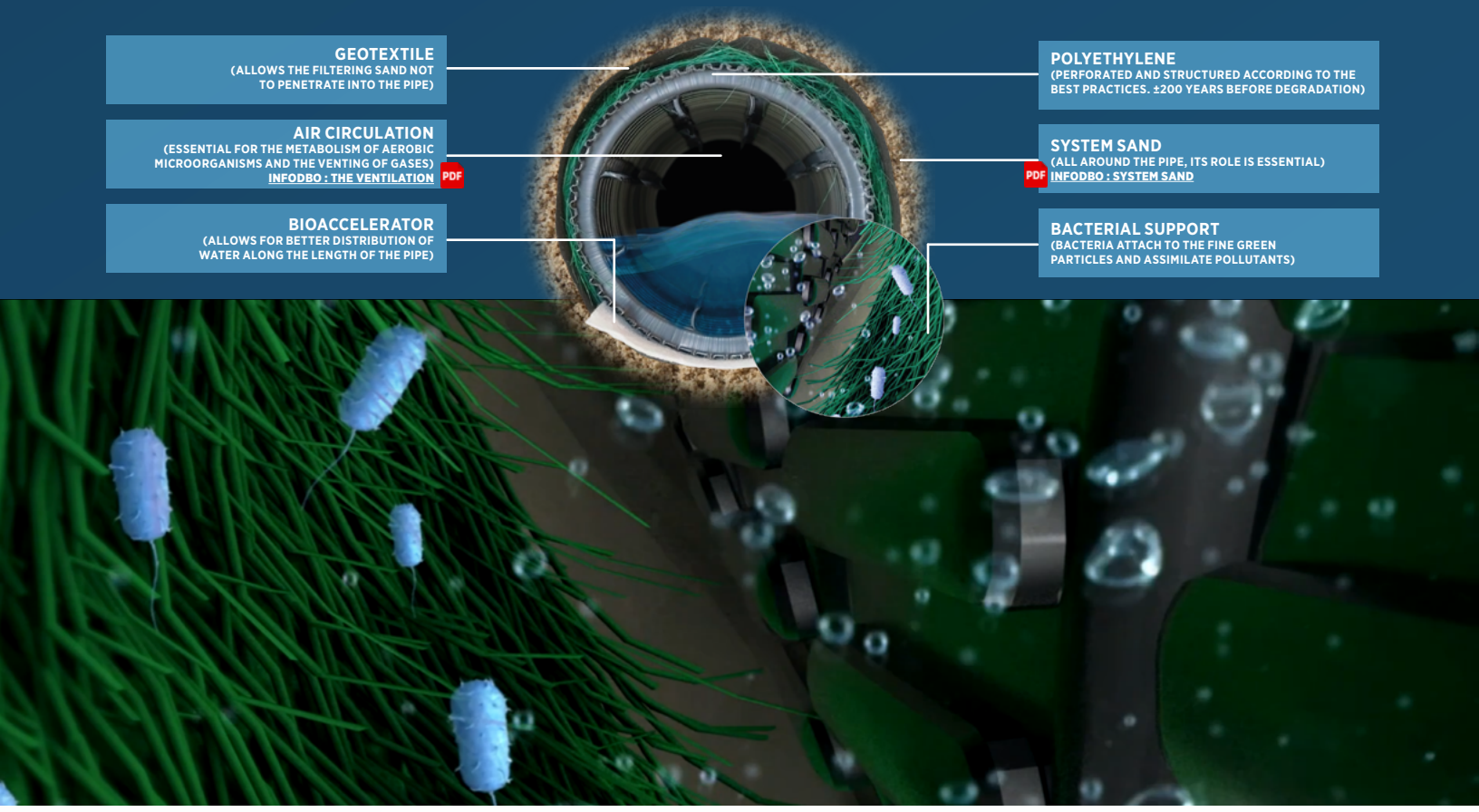
System O)) solutions are optimized by the Advanced Enviro))Septic (AES) technology, which treats wastewater passively and autonomously. The key to this autonomy lies in a specially structured 3-meter polyethylene pipe designed to promote the growth of essential bacterial flora.

Initially developed in 1987 as a sustainable alternative to traditional installations, this unique pipe distributes, treats, and infiltrates wastewater in a single step. Aerobic and anaerobic bacteria, responsible for water treatment, naturally settle on the permanent bacterial support (the fine green particles) around the conduits.

These bacteria play a crucial role by feeding on pollutants in the water, regulating their growth to prevent excessive biomass accumulation. Unlike other technologies that require changing the filtering media and replacement costs, AES technology ensures durability without additional maintenance or component replacement.

Why? Two phenomena contribute to this long lifespan: the controlled growth of a bacterial mat ("biomat") due to aeration and water treatment before infiltration, and the natural management of sludge or mineralization inside the conduits. Those interested in the scientific details can find an "infoDBO" document explaining these biological mechanisms on our website via this link : **InfoDBO : Sludge**

In fact, the technology involves both aerobic and anaerobic environments, i.e., in the presence or absence of oxygen. Wastewater enters the AES conduits in waves based on water usage in the house or building. The water gradually drains through controlled infiltration, facilitated by the conduits and the surrounding filtering sand. These fluctuations force bacteria in the conduits to alternate between different living environments, preventing the accumulation of sludge in the conduits.Another advantage of the System O)) solution is that it represents a completely open ecosystem to nature. A multitude of indigenous organisms, such as insects and even some roots, access the AES conduits. They contribute significantly to reducing biomass and eliminating sludge and minerals inside the conduits.

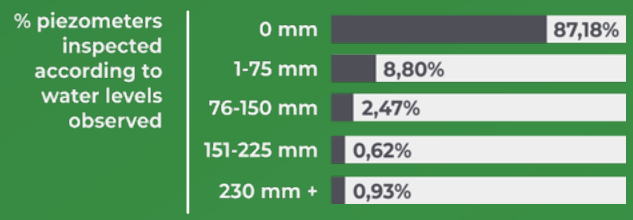


STATISTICS OVER THE YEARS

In Quebec, Canada, current regulations require that every secondary treatment septic system be inspected. To master the art of treating wastewater with our System O)) solutions and comply with these regulations, we have adapted and paired a piezometer, a clever monitoring tool, with all our septic installations, ensuring measurement of each system every year for over 30 years.

After more than 339,254 piezometer inspections conducted from the year 2000 to 2021, the technology behind System O)) installations proves to be the best approach in terms of durability and purification performance on the market.

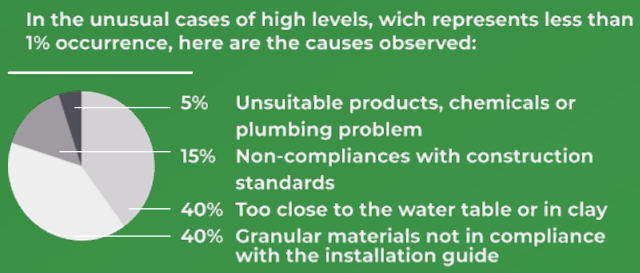
As shown in this graph, you can observe that 99.07% of water levels in the piezometers of all our inspected installations in 2021 indicated a normal situation. A normal situation is defined when the water level in the conduits, measured through the piezometer at the end of each row of conduits, is between 0 and 230 mm.



You read it right, more than 99.07% of the piezometers inspected in 2021 show a perfectly normal water level.

These results mean that the owners of these installations did not incur any expenses for repairing parts or replacing any media.

In the rare cases of elevated levels, here are the observed causes.



System O)) solutions, when designed, installed, and used according to the guidelines, are undoubtedly durable! In the rare cases of elevated levels, our analysis of the situations has allowed us to understand the reasons behind the high levels and implement appropriate corrections.

AMAZING FACTS

- A McDonald's in the United States installed a System O)) over 30 years ago, and it continues to function optimally.
- According to academic research, the materials used in manufacturing our System O)) solutions are expected to last over 200 years before showing signs of deterioration.
- The various System O)) solutions ensure optimal control of biomass, contributing in part to extending their durability.

InfoDBO : The Importance of Biomass in a System O))

USER'S GUIDE AND GOOD PRACTICES

By following the user's guide and good practices, you ensure the proper functioning of your septic system, extending its lifespan while minimizing the risks of problems and costly maintenance. A well-designed, properly installed, used, and maintained System O)) solution sees its lifespan optimized while ensuring environmental protection.

Here is a brief overview:

Wastewater Volume • Limit large amounts of wastewater by avoiding excessive flow rates. • Adjust the wastewater volume to the system's treatment capacity. • Consult an expert in case of changes in the use of the residence or building.	**Bathroom** • Promptly repair leaks. • Use a reasonable amount of toilet paper. • Prefer environmentally friendly cleaning products. • Avoid the use of disinfectant tablets in the toilet.	**Kitchen** • Repair leaks at faucets. • Use low-phosphate soap. • Use the minimum amount of soap necessary. • Opt for environmentally friendly cleaning products. • Avoid using garbage disposals and disposing of non-assimilable items.	**Laundry** • Use phosphate-free laundry detergent. • Minimize water consumption for laundry. • Spread laundry loads throughout the week. • Prefer environmentally friendly cleaning products.
Around the Residence or Building • Divert drainage water away from septic conduits. • Use only environmentally friendly cleaning products. • Avoid connecting unauthorized devices to the septic system.	**Chemicals and Additives** • Avoid the use of chemicals and additives as they can disrupt the system's operation. **InfoDBO : Septic system additives**	**Aeration** • Ensure proper aeration by keeping the vent clear. • Ensure the vent opening on the roof is not obstructed.	**Heavy Vehicles** • Prohibit the passage of heavy vehicles to prevent soil compaction unless stabilized by a civil engineer.
Vegetation • Maintain herbaceous vegetation above the system; avoid planting trees with invasive roots.	**Owner's Responsibilities** • Follow usage guidelines. • Have the tank pumped annually or as needed. • Adhere to current regulations. • Report anomalies promptly.	**System sand** • No maintenance under normal use.	**Drains** • Channel only domestic wastewater to the tank. • Prevent gutter water from being directed into or toward the System O)).
Precautions Above the Installation • Avoid any construction above the system. • Divert runoff water. • Keep an uncompacted snow cover in winter if applicable. • Maintain herbaceous vegetation above the system without invasive roots.	**Anomaly Detection** • React promptly to odors, saturated soil, backflows, abnormal vegetation, flooding, or pump station alarms.	**Component Maintenance** • Follow adjustment procedures for the distribution box if necessary. • No regular maintenance for conduits and piezometers. • Check the vent to ensure proper airflow.	**Fill Surface** • Cover with herbaceous vegetation. • Prevent compaction and erosion.

IN CONCLUSION

by adopting our System O)) solutions, you effectively contribute to achieving United Nations Sustainable Development Goal 6, which aims to ensure sustainable access to sanitation for all. Join in making a difference!

InfoDBO : Taking action for UN sustainable development goal « 6 »

You ensure a high-performing and environmentally-friendly system. The longevity of our installations, supported by proper usage, reflects our commitment to a future where sanitation is reliable, sustainable, and accessible to all.

Contact our experts for the planning of your wastewater sanitation projects.