



MBR Sewage Treatment Plant



Case Study

Stonecrest Estates

Industry: Private Development
Location: Quinte West, Ontario, Canada
Capacity: 56,000 GPD (212 m³/day)
Installed: 2016

GCL Developments wanted to build a new residential development, however connection to the municipal collection system would be cost-prohibitive. Additionally, Quinte West, a city of 43,000 people along the shores of Lake Ontario, have capacity at its existing sewage treatment facility.

Project Background

Newterra provided a proposal to the developer for a modular, decentralized treatment system that would accommodate the sewage for approximately 350 homes, the existing three schools and some commercial property when fully built out. This was presented to the municipality and the Ontario Ministry of Environment and Climate Control for review and approval.

The developer was required to get planning approval from the municipality and a pre-approval from the MOECC for the servicing plan, based on the treatment system proposal from Newterra.

A key requirement to proceeding with the development was completion of the Municipal Responsibility Agreement. This agreement between the developer and the municipality establishes the responsibilities from each party with regards to infrastructure ownership, operation and maintenance. For some MRAs, the developer maintains ownership and ongoing responsibility for ownership, operation and maintenance. However, the municipality is

ultimately responsible for plant if goes into non-compliance due to the developer going bankrupt or other circumstances. Hence, municipalities ensure the treatment system being proposed meets their standards and criteria for operation and efficacy.

The first phase of the MBR-based system, was installed in July 2016, and treats an average daily of flow of 212 m³. The second phase of the Newterra system will double the plant's treatment capacity to 425 m³/day. Surface water discharge - stringent criteria.

Parameters	Influent	Effluent	Unit
BOD	250	< 2.0	mg/L
TSS	300	< 1.0	mg/L
NH ₄ -N	35	< 0.5	mg/L
TP	8.5	< 0.05	mg/L
TN	-	< 3.0	mg/L
<i>E.coli</i> , Total Coliform, Fecal Coliform	-	< 2.2	CFU/100 mL

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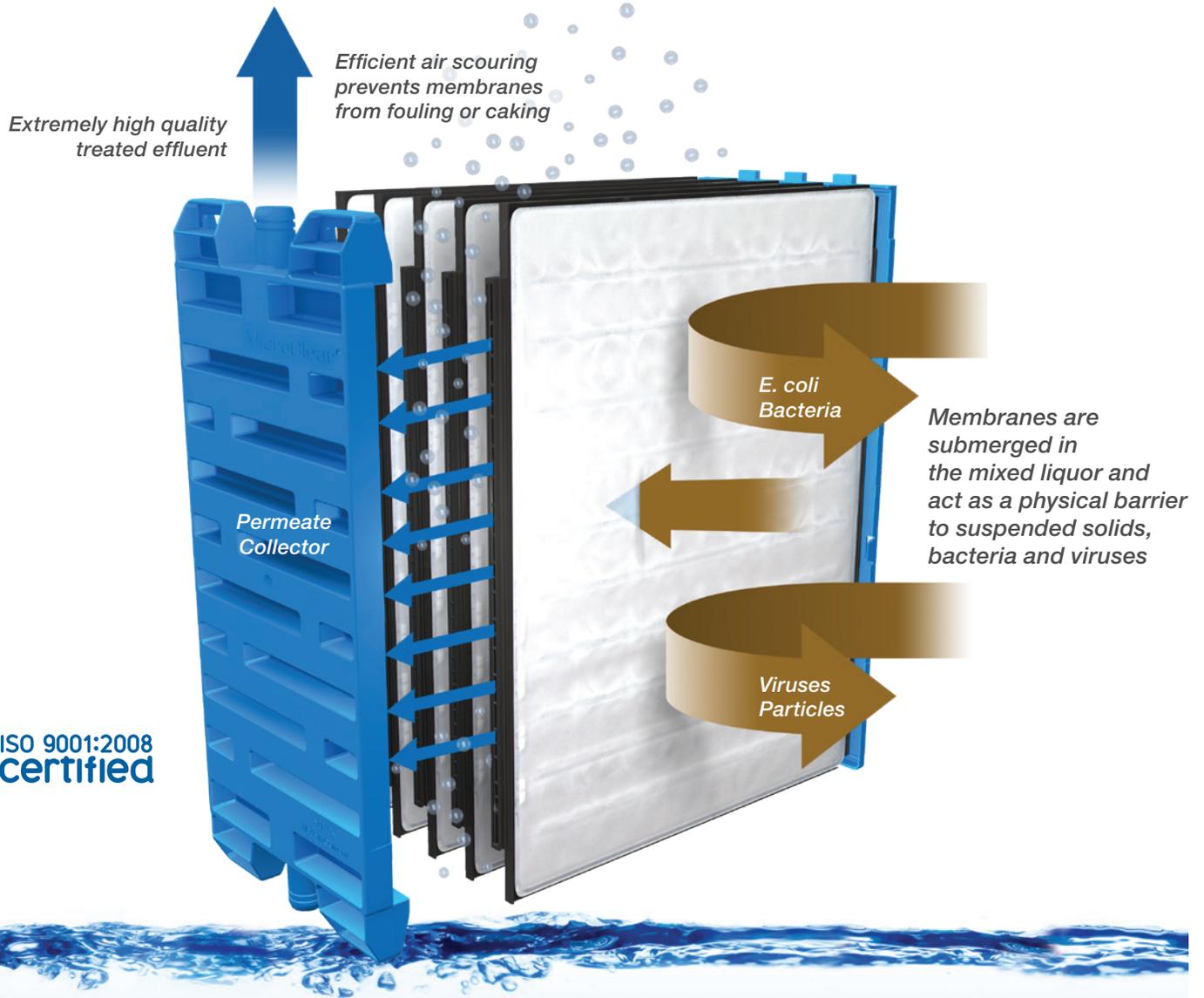
Newterra MicroClear® UF Membranes: The Core of our MBRs

Innovative Design. Outstanding Performance.

A key element of our modular MBR system's ability to produce high quality, treated effluent is the use of **newterra's** patented **MicroClear®** ultrafiltration (UF) membranes. These innovative, flat sheet membrane modules provide a physical barrier to particulate, bacteria, viruses and protozoa. They are submerged directly in the mixed liquor and permeate is drawn through the membrane under a slight negative pressure.

Patented Membranes with Exceptional Packing Density

- Extremely compact; 8 m² surface area per module
- Aeration process reduces power consumption by 50%
- Maintain consistent flux rates for long periods between cleanings
- Consistent long-term performance with fewer membranes & reduced operating costs
- Proven worldwide in thousands of installations



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