DYNATEC SYSTEMS INC.
THE WASTEWATER MEMBRANE SPECIALIST

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The Dynatec Difference

Significant Savings
- Water stream reduction lowers discharge fees
- Water reuse reduces overall consumption
- Higher quality water
- Lower treatment cost
- Reduced operator time

Technology Benefits
Membrane Separation System
Using Tubular Ultrafilters (UF)
- Simple mechanical process
- Consistent high-quality water
- Ability to reuse purified water
- Low operating costs
- Minimal operator time

Contaminants Removed
- BOD
- TSS
- COD
- Phosphorous
- Ammonia
- FOG

Other Services Provided
- Systems Design
- Turnkey Equipment Supply
- Treatability Testing
- Service Contract
- Design Build Own Operate Maintain (DBOOM)

DAIRY CONVERTS EXISTING BIOLOGICAL SYSTEM TO MBR

Dynatec converted an existing conventional biological treatment system at a dairy to a membrane bioreactor (MBR). The converted plant has the ability to process wastewater at the rate of 475,000 gallons per day.

The conversion provided the ability to increase the treatment rate and at the same time improve the quality of the treated water. The system operated at a higher concentration of mixed liquor in the bioreactor and thereby increase the throughput capacity of existing bioreactor and improves the quality of the treated water (0.03 micron membrane allows less bacteria and virus to penetrate the membrane surface) that is discharged.

The Dynatec “out of bioreactor” membrane configuration provided for optimization of both biological and membrane systems. Dynatec’s membrane system decoupled the membrane filtration and biological treatment in a way that allowed for optimization of both the solids liquid separation and the biological system design. The system is capable of operating with MLSS as high as 25,000 mg/L and this has maximized the operators flexibility in plant operations to achieve optimum performance. The positive recirculation through the membrane system minimizes fouling and reduces operator attention.

The amount of space required for the membrane system was small and therefore the membrane system was easily added because of the flexibility in locating the membrane system. Membrane system did not need to be next to or close to the bioreactor. The higher system membrane flux (permeate rate) meant that fewer membranes were required. The simple design required less ancillary equipment and operation at high MLSS meant that no additional tanks were required.
Dynatec’s Hi-Rate™ Membrane system draws on our many years of experience to provide a cost effective, simple system that outperforms other systems, especially with difficult to treat waste streams.

Dynatec's Hi-Rate Membrane system was selected in part because the overall capital cost was lower than alternative solutions and because the conversion was principally centered on the addition of the membrane system which was inexpensive to install and the location did not need to be close to the existing bioreactor.

Another reason for the selection of Dynatec was because Dynatec’s Hi-Rate Membrane Systems are completely enclosed which minimizes maintenance and provides a safe, clean environment for operators. The operators were not exposed to fumes and noxious gases.

The system was designed for remote access on any device with a web browser enabling the operator to review system performance and make changes without a site visit.

The unique operation of the Hi-Rate™ Membrane System makes it the right solution for difficult to treat wastewater applications such as dairy wastewater. The Hi-Rate Membrane System operates using tubular membranes in series with a recirculation flow that continuously scours the walls of the membrane surface. This prevents the buildup of solids on the membrane surface. The elimination of the solids buildup on the membrane surface results in high flux rates and consistent, dependable operation even in difficult applications where the solids do not filter well.