

Water Recovery Opportunities for Perry's Ice Cream



Challenge

Perry's Ice Cream is continually interested in making sustainability improvements to their operation.

Solution

NYSP2I conducted an onsite assessment to determine optimum water recovery and reuse options from their on-site water treatment facility and evaluated various filtration technologies.

Results

Best options appear to be utilization of UF or NF membranes with up to \$120,000/year savings can be realized by Perry's.

NYSP2I is evaluating a newly developed technology, developed by SUNY Buffalo as part of a NYSP2I R&D project, to improve membrane performance and make the recycling process more cost-effective.

Perry's Ice Cream

Perry's is an ice cream manufacturer located in Akron, NY, and produces over 10 million gal/year of ice cream. Perry's is a client of Insyte Consulting and has been continuously working to make sustainability improvements in all of their operations.

The company purchases approximately 60,000 gal/day of city water, primarily for cleaning of equipment, and discharges a similar amount of pre-treated wastewater to the municipal sewer system.

"Perry's Ice Cream has been a mainstay in western New York as a supplier of ice cream for many decades. As part of our efforts to become more sustainable, we have developed our own programs that make our ice cream products better for the environment. We also use and discharge a significant amount of water and want to reduce our water footprint by reusing up to 50% of the water. The engineers at the New York State Pollution Prevention Institute (NYSP2I) have helped us learn more about various technologies that can be used to clean and reuse water. NYSP2I provided very useful in depth analyses and has been great to work with."

Brian T. Perry, Perry's Ice Cream

Challenge

Perry's has been working with New York State Pollution Prevention Institute (NYSP2I) to determine optimum water recovery and reuse options from their on-site water treatment facility. An initial study using reverse osmosis (RO) indicated that treated water could be purified for potential reuse. Additional work is ongoing to determine if other, lower cost water purification methods could produce water suitable for reuse in operations. The company spends over \$200,000 annually for water purchase and sewer fees. If 50% of the water can be reused, up to \$120,000/year savings can be realized by Perry's.



Solution

NYSP2I staff initially visited the facility to perform an onsite assessment of Perry's operations. The primary objectives were to assess various filtration technologies typically used for potable water and to determine if these technologies could economically recycle at least 50% of the treated water. NYSP2I worked with Perry's to set up pilot tests utilizing different technologies in various combinations:

- Multimedia filtration (MMF)
- Granulated activated carbon filtration (GAC)
- Vacuum Rotary Drum Filter
- Ultrafiltration (UF) membrane
- Nanofiltration (NF) membrane



Results

Findings obtained are summarized below:

- Best options appear to be utilization of UF or NF membranes.
- Tests using a vacuum rotary drum filter prior to UF and NF showed a slight improvement in flow rates.
- For reuse implications, the quality of the filtered water would be validated by a state agency.
- Results from an NYSP2I-funded R&D project with SUNY Buffalo are being evaluated at Perry's to enhance membrane filtration performance.

Partners



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