

Packaged Membrane Filtration System Provides Optimum Solution For Historic Resort

Challenge

The Homestead, America's oldest destination resort, is located approximately 170 miles (273 km) west of Richmond, VA. The resort began providing guest accommodations in 1766, and today features 486 guest rooms, 88 suites, skiing, golfing, skating, a beautiful spa and many other amenities. Homestead Water Company, the private company established to serve the resort, also supplies water to about 420 additional area customers.

The water system is fed from springs located on nearby Warm Springs Mountain. The water has a relatively consistent temperature of 55°F, and low turbidity ranging from less than 1.0 NTU to 2.0 NTU. However, to meet the requirements of the Surface Water Treatment Rule (SWTR), the water company needed a filtration technology that would provide an absolute barrier against pathogens such as *CRYPTOSPORIDIUM*, *Giardia*, and bacteria.

Solution

Following a comprehensive evaluation, the water company's consulting engineering recommended the Memcor® XS submerged packaged membrane filtration system. This pre-engineered, skidded system from Siemens Water Technologies is pre-wired, pre-piped and factory tested before shipment. The system installed at The Homestead consists of three Memcor® XS submerged packaged membrane units, each containing 48 oxidant-tolerant membrane modules. Each unit is designed to produce 200-400 gallons per minute gpm (757-1514 LPM), for a total plant capacity of 1.3 million gallons per day MGD (4.9 MLD). Since its start-up the system has maintained turbidity levels of less than 0.025 NTU, well below the plant's permitted upper limit.

Snapshot - Homestead	
Location	USA
Source	Spring Water
Application	Potable Water
Technology	Memcor® XS
Capacity	1.3 MGD (4.9 MLD)
Commissioned	2006

The Memcor® XS system is fully automated and self-cleaning. Backwash removes the solids build-up on the membrane surface at regular, operator-adjustable intervals. An especially beneficial feature for the water company has been the new plant's SCADA system, which allows the automatically controlled plant to be monitored from remote locations.



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Memcor® Membrane Systems

Water Technologies

SIEMENS

Operational Data	Homestead
Number of skids	3
Modules per skid	48
Total capacity	1.3 MGD (4.9 MLD)

Results

Operating costs for the new membrane filtration system are low because it treats the resort's water without the need for chemical or mechanical pretreatment, and manpower requirements are relatively small.

By implementing the Memcor® XS submerged packaged membrane filtration system, Homestead Water Company now has a cost effective, reliable filtration system to protect public health and meet SWTR requirements. The water company is also benefiting from the plant local control system, ensuring that operating procedures for filtration, backwash, clean-in-place (CIP) and integrity testing are correctly carried out.



Memcor XS 48 system in backwash cycle.

Membrane Solutions

Memcor® membranes from Siemens Water Technologies represent the broadest range of low-pressure membrane filtration products -- submerged, pressurized, large capacity or small systems. They continue to be successfully employed in applications as diverse as wastewater reuse, potable water, RO pretreatment, high solids and sand filter retrofits.

Memcor® Products								
Product	Pres-surized	Sub-merged	Water Reuse	Potable Water	High Solids	Sand Filter Retrofits	Large Capacity	Small Systems
CP	■		■	■	■		■	
CS		■	■	■	■	■	■	
XP	■		■	■	■			■
XS		■	■	■	■			■

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MC-HOMESTEADr-CS-0709
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