

A CONTAINERIZED ULTRAFILTRATION SYSTEM FOR DIRECT TREATMENT OF A HIGH TURBIDITY SURFACE WATER AT A REMOTE FACILITY



Overview

The Thousand Trails–Chehalis RV Resort water treatment system consisted of a conventional media filtration unit treating water from the Newaukum River. During seasonal high turbidity spikes, this technology was unable to meet treated water turbidity targets and keep up with capacity demands. WesTech worked with Thousand Trails to seamlessly update their treatment technology by providing a complete, containerized ultrafiltration (UF) system able to consistently produce 60 gpm of treated water with filtrate turbidity consistently less than 0.1 NTU.

To account for high turbidity events, WesTech designed the system with a sustainable flux rate, an efficient backwashing strategy, and a low-fouling PVDF outside-in membrane module with a 0.01 μm pore size. WesTech also incorporated neutralization equipment, direct-feed coagulant addition, integrated chlorine disinfection, and remote monitoring for ongoing technical support. With this approach, WesTech was able to offer an efficient and reliable long-term solution. ■

RESULTS

>90 days

Between Clean-in-Place Cycles

96.4%

UF System Recovery

>100 NTU

Feed Turbidity Spikes

Project Summary

Thousand Trails
RV Resort

Location:
Chehalis, Washington

Application:
Potable Water

Process:
Direct Ultrafiltration Treatment
with Coagulant Addition

Size:
60 gpm

Design Flux:
42.8 gfd

Highlights

- **Containerized system for rapid equipment setup and commissioning**
- **Comprehensive package including clean-in-place, neutralization, and disinfection equipment**
- **Remote connection for ongoing site support and system monitoring**
- **Consistent high-quality product water <0.1 NTU during 100 NTU feed spikes**

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