

## CHEMICAL PLANT APPROACHES ZERO DISCHARGE

A major chemical company relied on Evoqua Water Technologies, formerly USFilter, to help with a plant expansion to update the water treatment system and develop guidelines to reach a wastewater treatment goal of zero discharge.

### CHALLENGE

A Gulf Coast chemical plant was faced with an unreliable demineralizer system to meet a proposed expansion of boiler feedwater requirements. In addition, the plant had a wastewater goal of zero liquid discharge.

High TDS in a proposed new well-water source threatened to increase demineralizer regeneration frequency, greatly increasing acid and caustic usage. Increasing regenerations also meant more wastewater to treat, a condition that ran counter to a zero discharge system.



### SOLUTION

- The chemical plant selected an outsourcing alternative and opted to shutdown its old demineralizer. Evoqua Water Technologies consulting engineering team designed and installed a system to expand capacity and reduce wastewater discharge.
- The turnkey solution consisted of an expandable 300-gpm reverse osmosis (RO) system with mobile cation softening to pretreat the RO.
- Evoqua drilled a 1,200-foot well, poured the concrete pad, constructed a building and installed the system as part of its build/own/operate service. Under this program, Evoqua Water Technologies owns and operates the system to supply water for a fixed price and at an agreed upon quantity and quality of water for the length of the contract.
- All pretreatment chemicals were eliminated due to the use of mobile softening and off-site regeneration.
- To conserve plant water and minimize waste, the RO concentrate stream is used for cooling tower makeup.
- A remote monitoring system supplements regular maintenance and operational service provided by Evoqua Water Technologies.

### RESULTS

- Reduced wastewater by 22 million gallons annually
- Eliminated \$300,000 emergency mobile demineralizer expense
- Ensured predictable boiler feedwater costs
- Advanced zero discharge goal by mobile softening and reuse of 2.2 million gallons per month of RO concentrate
- Eliminated hazardous chemical storage providing a safer workplace and environment
- Redirected plant capital and labor to core business
- No unexpected costs from operational upsets
- No unscheduled downtime due to purified water shortages



EVOQUA WATER TECHNOLOGIES NORTH AMERICA SERVICE NETWORK

**NORTH AMERICA SERVICE NETWORK**

Our North America service network is backed by more than 80 offices staffed with certified technicians and applications experts who can solve your problems. In addition, Evoqua Water Technologies provides response flexibility through either a lease or capital purchase option, and the company offers assured liability protection through environmentally safe waste destruction.

**SERVICES AVAILABLE**

- Activated carbon supply, removal and reactivation services
- Filter media supply and removal
- Ion exchange resin supply
- Membrane supply and cleaning programs
- Parts and expendables
- Service contracts
- Temporary/emergency water systems

**TECHNOLOGIES AVAILABLE**

- Reverse Osmosis (RO) membrane filtration
- Conventional clarification and filtration
- Oil/Water separation
- Granular activated carbon adsorption
- Demineralization
- Inorganic metals removal
- Chemical addition

Evoqua Water Technologies delivers cost-effective, reliable systems guaranteed for quality, safety, and compliance. Our trained service staff is available to make sure your systems is running at peak performance and to your specification. For your water treatment system, choose the partner that is committed to taking care of the world’s water...and yours.



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