



Reverse Osmosis Pre-Treatment Upgrade Improves Quality of Soft Drink Producer's Eastern European Water Supply

At-a-Glance

LOCATION

Eastern Europe

Project Goals:

- Upgrade reverse osmosis pre-treatment from conventional filtration (i.e., multimedia filters) to ultrafiltration (i.e., membrane filters).
- Use DOW™ Ultrafiltration as pre-treatment to increase effectiveness of DOW FILMTEC™ Reverse Osmosis elements to desalinate and remove bromides from water taken from tidal bore for use in production of soft drinks.
- Minimize particulate fouling and biofouling to reduce downtime that results when system needs to be shut down and cleaned.

Results:

- Plant consistently supplies water that meets standards for purity and taste set by soft drink manufacturer.
- Daily offline flushing of each reverse osmosis line with non-oxidizing biocide prevents occurrence of biogrowth on membrane surfaces, reducing need for more disruptive cleaning measures.

Completion:

August 2009



Photograph of two UF skids. Courtesy of VWS Deutschland GmbH – BERKEFELD

Taste is the Ultimate Test for Beverage Producers

According to a December 5, 2008 trend report from the editorial team of just-drinks.com, the drinks consultancy Zenith International identified East Europe as the developing market with the greatest growth in soft drink consumption in 2007, achieving a 9.8 percent increase.

But it's not just the locals who are seeking out soft drinks as their beverage of choice. Ever since the fall of the Berlin Wall in 1989, many Eastern European nations, long all-but-closed to the rest of the world, have experienced a steady rise in tourism. While tourists arrive seeking new adventures, they often search out a bit of home too. After a long day of sightseeing, when they reach for their favorite bottled beverage, they expect the comfort of the familiar.

When what you're selling is 100 percent taste, every sip — everywhere in the world — needs to be on 100 percent on brand.

Zero-Taste Water Equals Full-Flavor Beverages

To ensure that its Eastern European water supply kept pace with the quality of water used in its products in other areas of the world, a major beverage producer recognized that it needed to upgrade the area's regional plant to comply with its own standards for purity and taste and accommodate the unique chemical composition of the water supply. Its plan included the following:





- Incorporate the newest innovations in filtration to improve the efficiency of the desalination process and safely remove bromides prevalent in the plant's tidal bore source water.
- Meet the company's own international standards for water purity, quality and taste.
- Reduce the need to shut down the filtration system and perform frequent heavy-duty, often chemically-based cleaning and maintenance.

When the plant, constructed by Veolia Water Solutions & Technologies of Germany, was completed in 2009, the water filtration system had been redesigned to incorporate ultrafiltration pretreatment into its reverse osmosis system.

Improving the Results of Reverse Osmosis with Ultrafiltration

This East European plant's feed water is from a bore hole that contains higher-than-average levels of bromides and is subject to incidents of turbidity. It employs an oversized ultrafiltration pretreatment system made up of DOW membranes (Module Type 2860). And DOW FILMTEC™ SW30XLE-400i elements comprise the reverse osmosis system itself. Ultrafiltration, combined with periodic sanitization of the reverse osmosis system using the non-oxidative biocide, DBNPA, has greatly reduced particulate and biofouling occurrences.

By choosing to use DOW ultrafiltration, the newest improvement to the reverse osmosis process, along with DOW FILMTEC reverse osmosis filtration at their new water filtration plant, this international beverage producer took an important step in securing the unique taste its brand is known for throughout all of East Europe.



Photograph of an RO rack. Courtesy of VWS Deutschland GmbH – BERKEFELD

For more information about DOW™ Ultrafiltration and DOW FILMTEC™ Membranes, including all scientific data and supporting reference materials, call the Dow Water and Process Solutions business:

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