

3M Separation and Purification Sciences Division

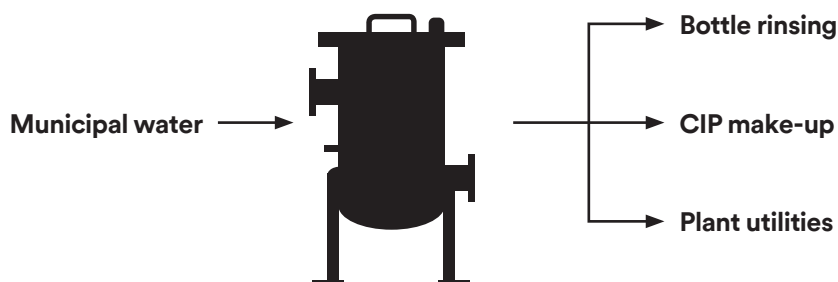
3M technical support solves problem for major bottled water company.

The problem

Plants that bottle spring water often use local municipal source water for a number of operations in the facility, including equipment cleaning and final rinsing of the bottles used to package spring water. Municipal water is usually much less expensive than the spring water on a per volume basis. However, since municipal water is not obtained from a crystal clear mountain spring, but rather at the end of a municipal water main, bottled water companies typically employ filters and other treatment to obtain the highest quality water possible so as not to contaminate the spring water process line.

One such facility employed the 3M™ Betafine™ XL Series 1.0 Micron Filter to process the incoming water prior to use in the plant. During the summer months, the filters began to exhibit progressively shorter service life. Variability of filter service life from season to season is not uncommon in bottled water filtration due to the changes the source water undergoes throughout the year. This is particularly true in early spring, when run-off water laden with silt enters surface water supplies, and in the summer, when the ground water table is at its lowest. However, 3M suspected a larger underlying issue and requested that the bottled water company return used Betafine XL Series Filters for our analysis.

The process



3M™ Betafine™ XL Series
1.0 Micron Filters

The solution

3M's Application Engineering department conducted an initial investigation into the problem, including conference calls and site visits with the customer. They also organised analysis of the used filters in 3M's extensive laboratory facilities, employing a combination of light microscopy, scanning electron microscopy, and energy dispersive spectroscopy to determine how the filters plugged.

The result

3M's analysis determined that the filters were plugged with an unusually heavy deposition of clay, algae and other biological debris. Because these contaminants should not be in municipal water to this degree, it indicated a potential break somewhere in the distribution system leading to the plant.

With this information, the bottled water company was able to work with the city to determine if the water supply was breached prior to entering the plant.

The city subsequently investigated the water mains leading to the facility and discovered that one had partially collapsed, causing increased particulate in the water. The situation was corrected and the bottled water company's operation returned to normal.

Application engineering

The cornerstone of 3M's philosophy is service to customers, not only in product quality and prompt delivery, but also in validation, application support and in the sharing of scientific information.

Our Application Engineering (AE) group is a market-orientated group of scientists and engineers who work closely with customers to solve difficult separation problems and aid in the selection of the most effective and economical filtrations systems. 3M Application Engineers routinely provide end users with:

- ▶ Validation and regulatory support
- ▶ Extractable and compatibility analysis
- ▶ Filter systems optimisation studies
- ▶ 3M™ 101 Series Integrity Testing Device

Get in touch

Contact us to find out how 3M could help you save on the true cost of filtration in your water bottling plant and help you create a pure beverage. Or, if you have a complex process problem that requires expert help and would like to schedule an appointment with a 3M Application Engineer, send us a message at 3M.co.uk/foodandbeveragecontact or www.3Mireland.ie/foodandbeveragecontact.

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