

3M™ High Flow Series 0.5µm Cartridges Increased the Service Life of Spring Water Filters



The Problem

The popularity of bottled water and clear beverages continues to rise in many countries. Consumers are drawn to the consistent taste, convenience, and health attributes that bottled beverages can provide.

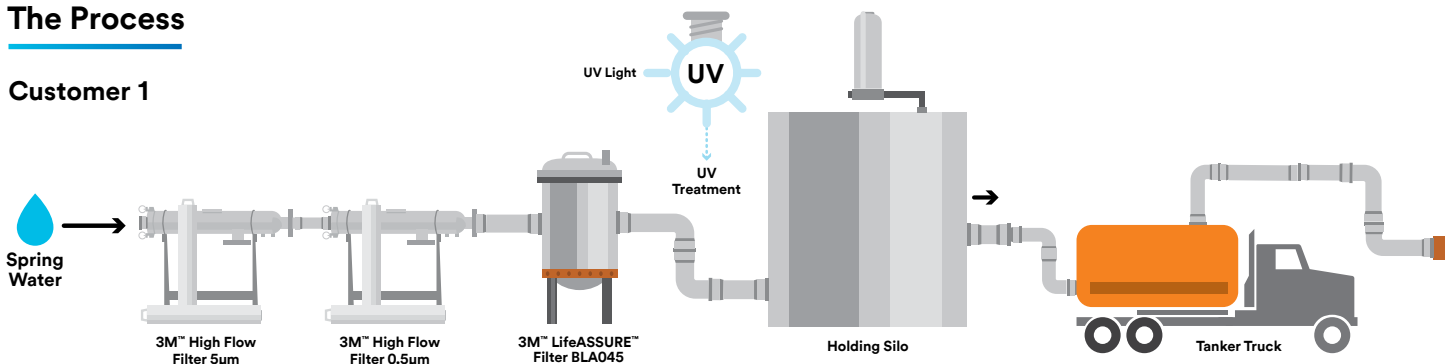
Natural springs are one of many sources of water for bottled beverages. Waters pumped from spring bore heads are commonly filtered and treated before temporary storage in silos. Tanker trucks deliver these spring waters to bottling locations for further treatment. Filtration systems at the spring sites are the first line of defense in ensuring contaminant free water at the bottling locations.

Spring site water quality can vary depending on the climate, location, seasonality, and age of the collection system. Common spring water concerns include silicates, bacteria, heavy and common metallic contaminants. Micron and submicron particle removal efficiency filters are used to reduce the transfer of contaminants into the silo, tanker trucks, and downstream bottling facilities.

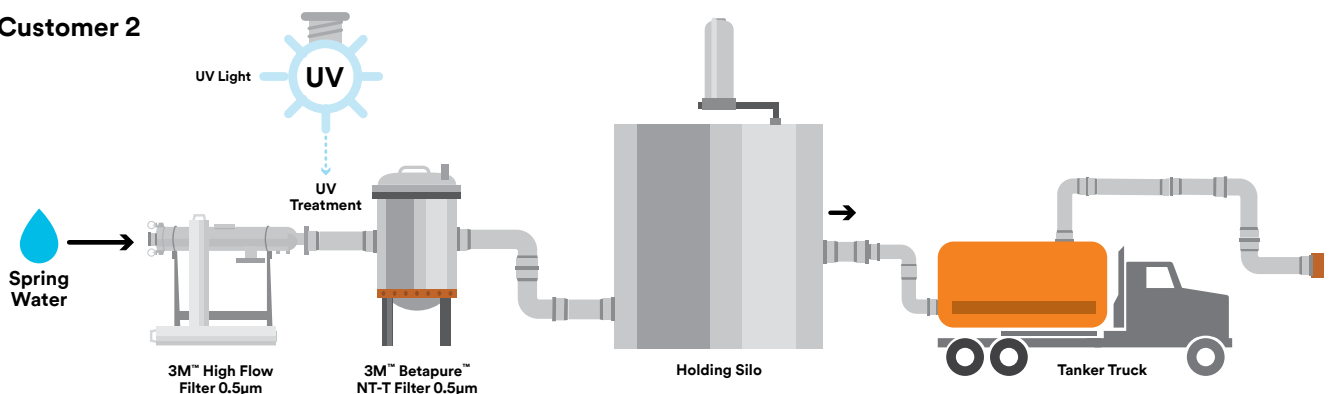
Two bottled water plants in the eastern United States previously partnered with 3M to solve challenges in their spring, bottling, and bottle washing processes. These two customers partnered with us again to increase the service life of their sub-micron particle filters at the spring site locations.

The Process

Customer 1



Customer 2



The Solution

Both customers were using 3M™ High Flow™ Series Filters at their spring site locations and were asked to evaluate the 3M High Flow Series 0.5µm line extension. The 3M Application Engineering team provided pre-production filters at no cost to the customers, monitored the filters in service, and collected spent filters and water for analysis.

The 99.9% (Beta 1000) efficient 3M High Flow Series Filter 0.5µm incorporates an accordion-style diamond-shape pleat structure, which offers a substantial increase in surface area. The 3M High Flow Series Filter 0.5µm is for water bottlers who want the labor saving and ergonomic benefits of a high flow, large format filter coupled with a lower total cost of filtration for their sub-micron applications by extending the life of existing, more expensive downstream filters.

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 the sharing of scientific information.

By using 3M products, customers have access to 3M Application Engineering support, a global team of market-focused scientists and engineers who excel in supporting collaborative efforts between customers and 3M.

Our Application Engineers can work with you from start to finish to suggest the most effective and economical filters to achieve the clearest results.

For more information, contact your 3M sales representative.

Intended Use: 3M High Flow Series Filter Cartridges are intended for use in the industrial filtration applications of aqueous fluids in accordance with the applicable product instructions and specifications. 3M High Flow Series Filter Cartridges products are also intended for use with non-aqueous fluids where materials of construction are compatible. Certain limited 3M High Flow Series Filter Cartridges products are also intended for use in Food and Beverage (F&B) applications. For details related to the specific use conditions or limitations for food contact applications please contact your 3M representative for more information. Since there are many factors that can affect a product's use, the customer and user remain responsible for determining whether the 3M product is suitable and appropriate for the user's specific application, including user conducting an appropriate risk assessment and evaluating the 3M product in user's application.

Technical Information: The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

Product Selection and Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

Limited Warranty, Limited Remedy, and Disclaimer: Unless a different warranty is expressly identified on the applicable 3M product literature or packaging (in which case such express warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

3M Purification Inc.
3M Separation and Purification
Sciences Division
400 Research Parkway
Meriden, CT 06450
Phone 1-866-990-9785
WW 1-203-237-5541
Web 3M.com/purification

The Result

The 3M High Flow 0.5µm Filters carried more of the contaminants burden than the existing 3M High Flow filters, which extended the service life of the downstream filters. The cost savings from increasing the time between change-outs of the expensive downstream filters far outweighed the increased cost related to the shorter service life of the High Flow 0.5µm filter.

Customer 1 saw a single 3M High Flow Filter 0.5µm extend the life of the (30) 3M™ LifeASSURE™ BLA045 downstream membrane filters. The 3M High Flow filters lasted 45 days in service and the 3M LifeASSURE filters did not achieve terminal pressure during the 4-month trial. The (30) LifeASSURE BLA045 filters cost 20 times more than the 3M High Flow filter resulting in a substantial cost of filtration savings.

Customer 2 saw a 13% reduction in life moving from 3M High Flow filter 2.0µm to the 3M High Flow Series Filter 0.5µm yet achieved a 1.5X increase in 3M™ Betapure™ NT-T Filter service life. The 3M NT-T Filter costs 7 times more than the 3M High Flow filter resulting in a substantial cost of filtration savings.

3M.com/purification

3M is a trademark of 3M Company.
Please recycle. © 3M 2024. All rights reserved.
70-2016-0413-2