



IDEXX Tecta™ system: Advancing water quality and innovation in a small town

Background

Byrdstown, a small, picturesque town in Tennessee, has earned a reputation for progressive water management among small communities. Serving roughly 3,200 customers in two counties, the town is dedicated to upholding the highest standards of water quality, regulatory compliance, and public trust. At the center of these efforts is the Byrdstown Water Treatment Plant, which, through rigorous testing and a willingness to embrace innovation, is setting a new benchmark for what local water utilities can accomplish.

The primary objective for any water utility is maintaining water quality and regulatory compliance, but for smaller communities where resources and staffing may be limited, it can be more of a challenge. Byrdstown's Water Treatment Plant, under the leadership of Plant Superintendent Buster Harmon, has navigated these waters for over three decades. "I believe in city water, and I believe in the quality of our water," Harmon notes. "We're proud of the work we do here."

Byrdstown has a comprehensive approach to testing for total coliforms and *E. coli* to ensure water safety and maintain regulatory compliance. "We do all our own testing: municipal water, contractors, new lines, bacterial and state compliance testing," Harmon explains. From raw water to post-treatment samples, any potential issues are quickly identified and resolved.

Testing is conducted at two-week intervals, amounting to approximately 10 tests per month. This schedule provides a steady stream of data and ensures that samples reflect both short-term variation and long-term trends. "Raw water testing, pre- and post-treatment—by staying on top of it, we're always ready for whatever comes," Harmon says.

The Challenge: Navigating water quality and staffing hurdles in small-town water management

The Byrdstown Water Treatment Plant faces ongoing challenges that are common to many small communities: finding and keeping qualified staff. Attracting individuals with the right expertise is often difficult due to limited resources and the specialized skills required for water treatment operations. Retaining experienced personnel is equally critical, as their knowledge ensures continuity and reliability of water quality practices. These staffing hurdles make innovation and efficiency even more essential for Byrdstown's ongoing success, especially for a Grade 4 classified plant in Tennessee, reflecting its technical complexity and regulatory obligations. "It's hard enough to find employees in a small municipality," Harmon said. "But it's even tougher to find a good operator that wants to stay awhile."

Harmon emphasizes that making operations easier and more understandable is about more than efficiency—it's central to workforce sustainability. "If I can make something easier and better to understand, it helps the employees at the plant," he explains. Streamlined testing and operations not only improve performance but also make the work more attractive to potential and current hires, a significant advantage in today's competitive labor market.

By consistently upholding high standards and embracing innovation, the Byrdstown Water Treatment Plant aims to build a workplace that attracts and retains dedicated professionals, reinforcing its reputation for public trust and municipal leadership.

The Solution: Innovations in automated testing

One of the plant's most significant advancements has been adopting cutting-edge technology such as the Tecta™ B4 Instrument for water testing. The Tecta™ system streamlines the entire water testing process, replacing the previously used membrane filtration (MF) method with an approach that is not only faster and more reliable, but automated to remove the risk of human error. The Tecta system offers automated analyzers with either 4 or 16 incubation chambers, depending on throughput requirements, and user-friendly cartridges that require minimal sample preparation. The system can simultaneously detect total coliforms and *E. coli* in 18 hours or less, without the need for input or visual interpretation from a laboratory technician. Results are automatically emailed, eliminating the need for technicians to be in the lab when the results are ready.

"Tecta is all about time and convenience," Harmon emphasizes, "less time setting up, easier to use. That means more capacity to focus on other areas of plant operation or resolving any problems that come up."

Buster Harmon
Plant Superintendent
Byrdstown Water Treatment Plant

The Byrdstown Water Treatment Plant is certified by the Tennessee Department of Environment and Conservation (TDEC) to use the Tecta B4 Instrument for drinking water analysis. The Tecta system is also approved by the U.S. Environmental Protection Agency (EPA) for detecting *E. coli* and total coliforms in drinking water. Additionally, the Tecta system can test for fecal coliforms and enterococci. The system employs an enzyme substrate

detection method coupled with a proprietary polymer partition technology to deliver accurate and timely test results. The instrument can detect positive samples faster than traditional 18- or 24-hour methods, automatically sending an email alert to technicians for prompt action on contamination protocols.

The Results: A model for small towns

Byrdstown's Water Treatment Plant is more than a service provider—it is a symbol of community health, public trust, and municipal innovation. Over three decades, the plant has weathered regulatory changes, emerging contaminants, and shifts in public perception. Harmon sums it up: "We have a system here that's cutting edge. We saw an opportunity to keep building on a reputation for being ahead of the curve and doing what's best for attracting and keeping employees at the plant."

Byrdstown's story shows how small towns can excel in water quality assurance and technological innovation. By continuously investing in people, advanced systems, and community trust, the Byrdstown Water Treatment Plant has set a standard for other communities to follow—and this forward-thinking approach not only benefits the public but also plays a crucial role in attracting and keeping talented employees.



**Learn more about the IDEXX Tecta system
at [idexx.com/Byrdstown](https://www.idexx.com/Byrdstown)**

Note: Tecta EC/TC medium and Tecta instruments are U.S. EPA approved at 40 CFR Part 141, listed as a method in *Presence Absence Method for the Simultaneous Detection of Total Coliforms and Escherichia coli (E. coli) in Drinking Water*.