

Utah Water District Saves Time And Resources, Improves Accuracy By Upgrading Sensors And Analyzers

Monitoring chlorine and fluoride levels in the drinking water of Utah's Taylorsville-Bennion Improvement District used to be expensive, labor intensive, and often sensitive to interference from the variable frequency drives used to operate the chlorine injection pumps. That is, until the district upgraded to Rosemount Analytical free chlorine and fluoride sensors and analyzers from Emerson Process Management.

Taylorsville-Bennion Improvement District serves 70,000 people in an area of about 14 square miles in the center of the Salt Lake Valley. The district has approximately 16,700 connections and 229 miles of water lines. Most of the water supply (67 percent) comes from eight wells in the district; the rest is purchased from Jordan Valley Water Conservancy District.

Problem: Obsolete Sensors and Analyzers Drain District's Limited Resources

For many years, Taylorsville-Bennion Improvement District tried to keep its old chlorine and fluoride sensors and analyzers running by constantly rebuilding, recalibrating, and replacing parts. But this was proving too much for the district's small staff. "We run lean and mean," says Ron Dawson, facility and fleet manager for Taylorsville-Bennion Improvement District. "Our employees wear many hats, and the amount of work that was going into maintaining the sensors and analyzers was impractical for us."

The units were very laborious to rebuild



The Rosemount Analytical Free Chlorine and Fluoride Sensors and Analyzers from Emerson Process Management are helping a water system in Utah save time and money, while improving the accuracy of its readings. Ron Dawson, facility and fleet manager, and Ron Stock, facility and fleet coordinator for Taylorsville-Bennion Improvement District stand beside the display panel, which enables operators to easily set up the system and troubleshoot problems.

and required replacement of two to three probes per year. Plus, they used expensive membranes that were difficult to replace and often broke during installation. Dawson estimates the cost to operate the old sensors and analyzers was approximately \$9,000 per year at the district's three locations. Plus, the units required daily attention and annual rebuilds adding labor costs to the equa-

tion. "The older equipment was no longer supported by the manufacturers, so we had to read the manual ourselves and become experts on rebuilding, calibrating, and troubleshooting," says Dawson.

After forming a committee to study possible solutions and talking to several other water system operators about their experiences with various products, the

members unanimously decided on the Rosemount Analytical free chlorine and fluoride system.

Solution: Rosemount Free Chlorine and Fluoride Sensors and Analyzers

The Rosemount Analytical system, which includes the sensors and analyzers as a package, has a higher upfront cost than the old units. “But, we did our homework,” says Dawson, “and we found that we would realize significant cost savings over the life of the sensor, as they are easily rebuilt and have a longer life — three years compared to one year with other models.”

The committee was particularly impressed by the recommendation of one plant manager who had been using the sensors for more than 15 years and was still able to support the older units.

But what really convinced the committee to go with the Rosemount Analytical system was the opportunity to try out a demo unit prior to the purchase. “We were surprised at how easy it was to get the demo running, right out of the box — even without a manual,” says Ron Stock, facility and fleet coordinator at Taylorsville-Bennion Improvement District. “The display panel gave us step-by-step instructions and walked us through the startup.”

When comparing the Rosemount Analytical system to other products on the market, the committee found that Rosemount’s technology offered the following benefits:

- Reagent-free monitoring, reducing the need for pumps, tubing, and associated handling and maintenance
- A significantly lower total cost of ownership
- Ease of use: The control panel displays step-by-step instructions, alerts, and troubleshooting information, saving time and reducing errors
- Ease of calibration and no need to calibrate daily
- Solid analog output signal that is not sensitive to harmonic interference
- A built-in USB port: Data can be easily downloaded for review
- Longer life: Three or more years before the chlorine sensors need to be replaced. The Chlorine sensor needs quarterly change of membrane and electrolyte.
- Sensors and analyzers that are sold and supported as a package

Results: Lower Labor Costs and \$5,000+ in Annual Maintenance Savings

Taylorsville-Bennion Improvement District has been using the new sensors and analyzers since 2012 and now has enough first-hand experience to be confident in the choice. “Of all the many different electronic products that we use, the Rosemount Analytical system is, by far, the easiest to use,” says Dawson. “It is easy to train new people to operate and maintain the units. And, most importantly, field testing consistently validates the accuracy of the readings.”

Since 2012, only the membranes and electrolyte have had to be replaced on the chlorine sensors, costing about \$150 per year compared with the \$6,000 per year the district was spending on maintenance and rebuilds with the old units. Even with the district’s high iron content the equipment has held up well.

The time and effort spent calibrating and maintaining the units are now a thing of the past. The district estimates a labor savings of approximately 50 hours per year with Rosemount Analytical sensors and analyzers “We are pleased with our purchase and are seeing improved performance and productivity,” says Dawson. “Now our staff can focus on the many other hats we wear.” ■