

# Reliable chloramination reduces maintenance and improves quality for water corporation

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A regional water corporation in southern Australia with many remote sites uses chloramination to assure residual water purification in its long pipe runs, which can be up to 30 kilometres long. The water corporation previously used a system that required reagents, but discontinued its use several years ago after that particular reagent-based system added expenses of \$300 per system per month. In addition to the cost, the reagents had to be refrigerated and many of the remote sites did not have power sufficient for refrigeration. Maintenance personnel had to visit the sites with the refrigerated reagents on a regular basis, increasing maintenance time.

When compared to the lack of consistency in measurement that the water corporation discovered with the system, all this was a small problem — the deviation was huge among measurements from grab samples. The region experiences large variations in water demand seasonally (from 10 litres per second to 250 litres per second at the major potable water storage facility), and the system failed to capture accurate measurements, which cause underdosing



1: The accuracy of the system helps to reduce remote site visits from 16 to four per month

2: To remedy the corporation's water purification problems, Emerson's Ammonia Monitoring System was selected



or overdosing of chemicals that resulted in water quality issues.

Overdosing could cause an odour to be detected in the drinking water, while underdosing could lead to the growth of bacteria and other microorganisms that pose a risk to water safety. As a result, the personnel made multiple visits to the remote sites weekly to take grab samples to test water quality and assure safety for customers.

## THE SOLUTION

The water corporation was using costly and time-consuming field-based equipment to compensate for not having a monochloramine system, so it worked quickly to remedy the problem and sought out new alternatives. The corporation selected Emerson's Ammonia Monitoring System. This consisted of a free-chlorine panel with flow cell adapter, plus a Rosemount 499ACL Chlorine Sensor and a Rosemount S10046 ammonium sensor; all controlled by the Rosemount 56 dual-channel transmitter on a pre-engineered water quality panel. The system was installed at three sites with a

fourth to come.

## THE RESULTS

The Emerson system does not require reagents, which immediately eliminated the cost of the consumables — \$300 per system per month. It also removed the need for site trips to replenish refrigerated reagents. Most importantly, the system provided consistent and reliable measurements, with minimal deviation from grab samples, even under tremendous high-demand as well as low-demand conditions. Now the water corporation is confident in the accuracy of the system readings and has reduced remote site visits from 16 to only four times per month, freeing up personnel for other important tasks.

The water corporation expressed that they were "extremely happy" with the high accuracy and reliability of the system, which has assisted in full trihalomethane regulatory compliance, as well as lowering maintenance requirements and costs, and is considering additional units to aid in nitrification monitoring. [WWA](#)