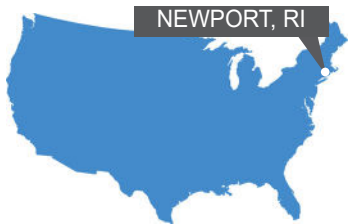




USG WATER
— SOLUTIONS —

Removing 81% THMs in a surface water reservoir in City of Newport, RI



NEWPORT, RI

Project Summary

Customer:

City of Newport, RI

Type of Project

Trihalomethane removal system

Results:

- Removed 81% THMs in a surface water reservoir



Newport is a city set on Aquidneck Island in the New England state of Rhode Island. The city's Water Division maintains approximately 14,500 services, 170 miles of water mains, 3,300 valves, and 1,000 hydrants and provides drinking water to more than 25,000 residents and wholesales water to the United States Navy and to Portsmouth Water and Fire District. Newport Water's system has a total potential capacity of 16 million gallons a day.

"We're committed to delivering clean and affordable drinking water to our customers across Aquidneck Island," says Robert C. Shultz, Jr., the city's Director of Utilities.

Experiencing elevated levels of THMs in a critical surface water reservoir

The city draws its water supply from a system of nine surface reservoirs located in an area totaling 18.625 square miles and interconnected through a complex network of pipelines and pumping stations.

When one of its above ground tanks, the Reservoir Tank, began to experience higher levels of Trihalomethanes (THMs), the city sought options to remedy the situation. THMs are a group of organic chemicals that often form in drinking water that comes into contact with chlorine used for disinfectant purposes to kill bacteria, viruses, and other contaminants that could cause serious waterborne disease.

In evaluating the best solution to remedy the situation, Newport Water took the opportunity to look at an alternative to traditional carbon filtration pressure vessels, which were becoming more expensive as the widespread focus on PFAS removal helped accelerate a rise in carbon prices.

At the same time, the city required a performance guarantee to prove the efficacy of the new THM removal system. The contract stipulated that the supplier must guarantee an average Total Trihalomethane removal rate of 50%.

After a rigorous selection process, the City of Newport chose to work with USG



Water Solutions (USG) to provide a complete Trihalomethane Removal System (TRS) that would meet both expectations.

Implementing a TRS™ Trihalomethane Removal System

USG installed a PAX TRS™ Trihalomethane Removal System, a custom-designed, energy-optimized system of mixers, aerators and ventilators that converts ordinary water storage tanks into water treatment systems.

The system consists of three components: a PWM400 Mixer, two SA-75 Surface Aerators, and a PPV-600 Powervent®, plus an Integrated Control Panel.

- The active mixer, which resides in the bottom of the tank, circulates water from the bottom to the top of the tank where the water contacts the air.
- The surface aerators blow air into the tank to make the air in the headspace of the tank fresh, while creating a splashing effect to help the volatile THM compounds escape from the water into the air.
- The high-efficiency Powervent® then exhausts the THM-rich air out of the tank.

According to Kevin Martel, Water System Consultant at USG Water Solutions, the PAX System is unlike other treatment technologies for lowering THM levels. “While other systems involve large-scale changes to water treatment plants, PAX TRS™ can be implemented quickly and cost-effectively, targeting locations in the water distribution system where THMs are the highest,” he said.

Exceeding THM Removal expectations

In evaluating the program, Schulz commented, “There’s a drastic difference even with just the active mixing; that component alone would probably be greatly beneficial for most systems. Having the Powervent® and aeration provides an additional tool to deal with the challenging conditions we have. We are seeing the benefit of getting a more active mixing system and adding aeration and venting on top of that truly shows what the return can be especially in a sector where you are operating 24 hours a day, 365 days a year, and where regulations and expectations never go down.

“We’re happy with the results – I think they

speak for themselves.” After several months in service the system has achieved an 81% TTHM removal rate, far exceeding the 50% level mentioned in the initial performance guarantee requirement. The PAX TRS system is the only system on the market that will guarantee such a high removal of TTHM. Schultz concluded that that they will likely add similar systems in other tanks in the near future.



“While other systems involve large-scale changes to water treatment plants, PAX TRS™ can be implemented quickly and cost-effectively, targeting locations in the water distribution system where THMs are the highest,”

— Kevin Martel, Water System Consultant
USG Water Solutions

Contact Us Today!
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