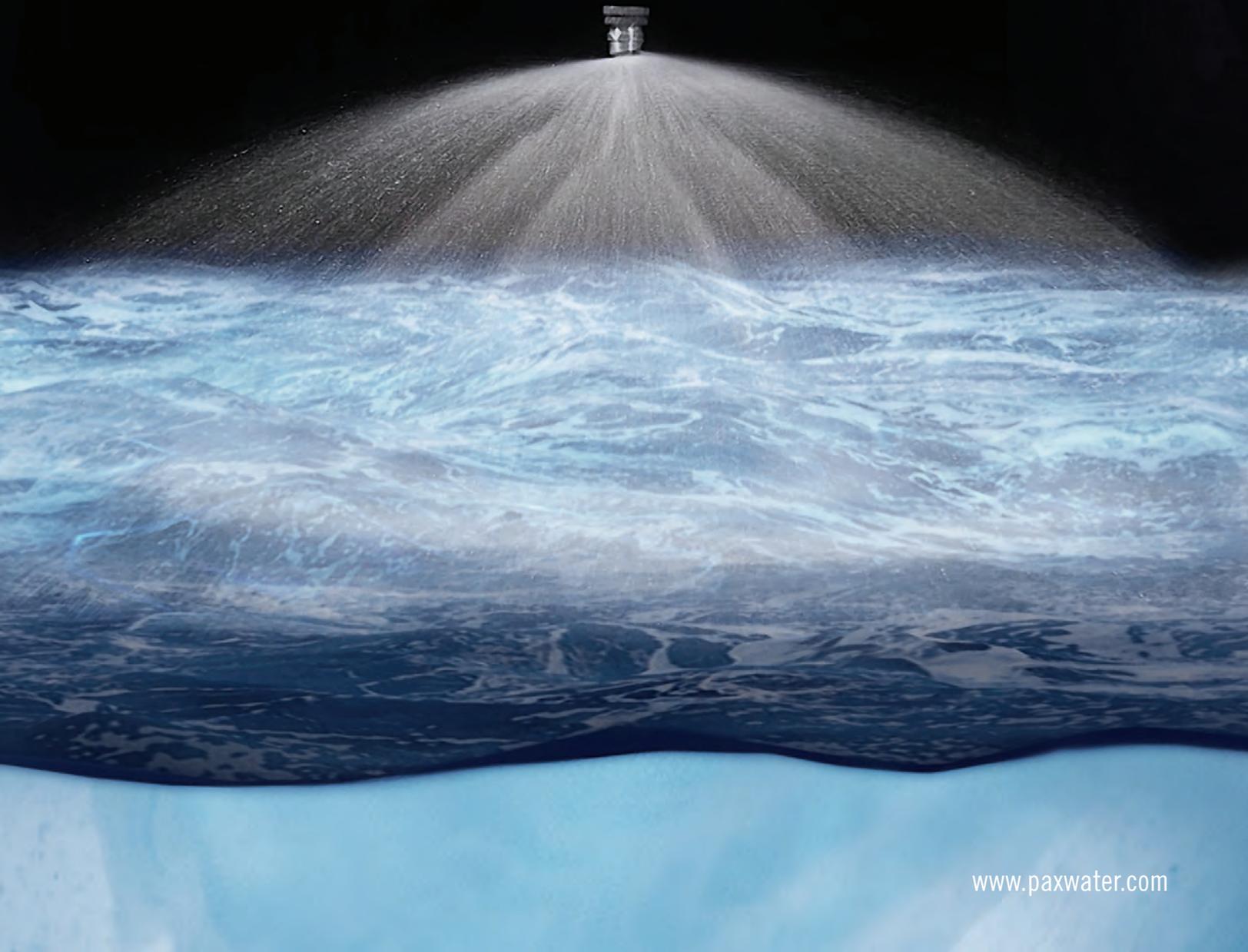


Nature. Technology. Innovation.



In-Tank Aeration for THM Removal



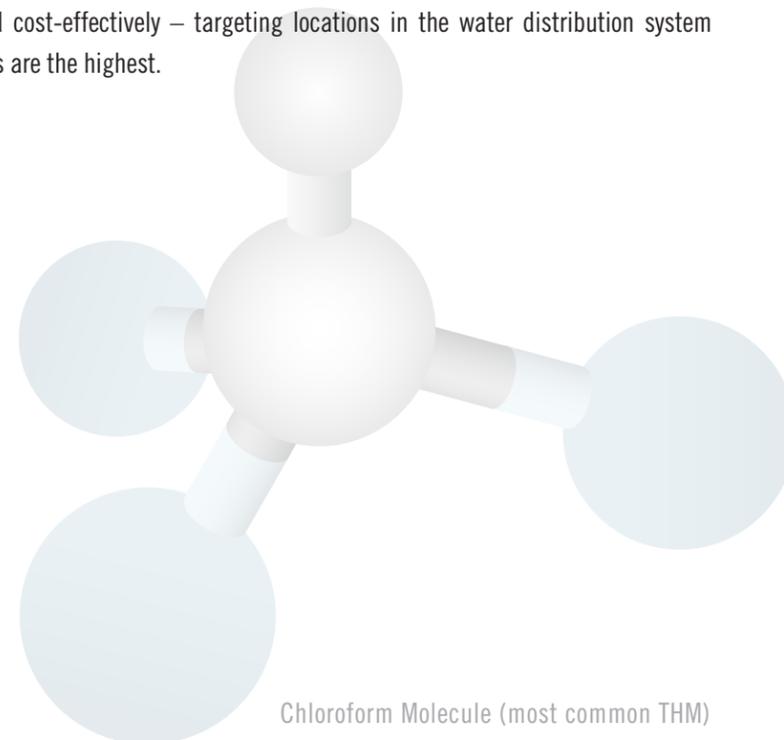
www.paxwater.com

THMs – A Growing Challenge for Municipal Water Systems

Trihalomethanes (THMs) are a class of chemical compounds formed when natural organic matter in water reacts with chlorine during the disinfection process. Along with other disinfection by-products (DBPs), THMs are a suspected carcinogen and are regulated in many countries. The level of THMs in a water system is a function of the amount of organic matter present in the water, the amount of chlorine disinfectant applied and the age of the water. Many municipalities are seeing a rise in THM levels due to an increase in organic matter in their source water and an increase in water age in drinking water distribution systems. As a result, THM levels have risen substantially in many localities and are expected to continue rising.

TRIS Targeted THM Removal for Tanks

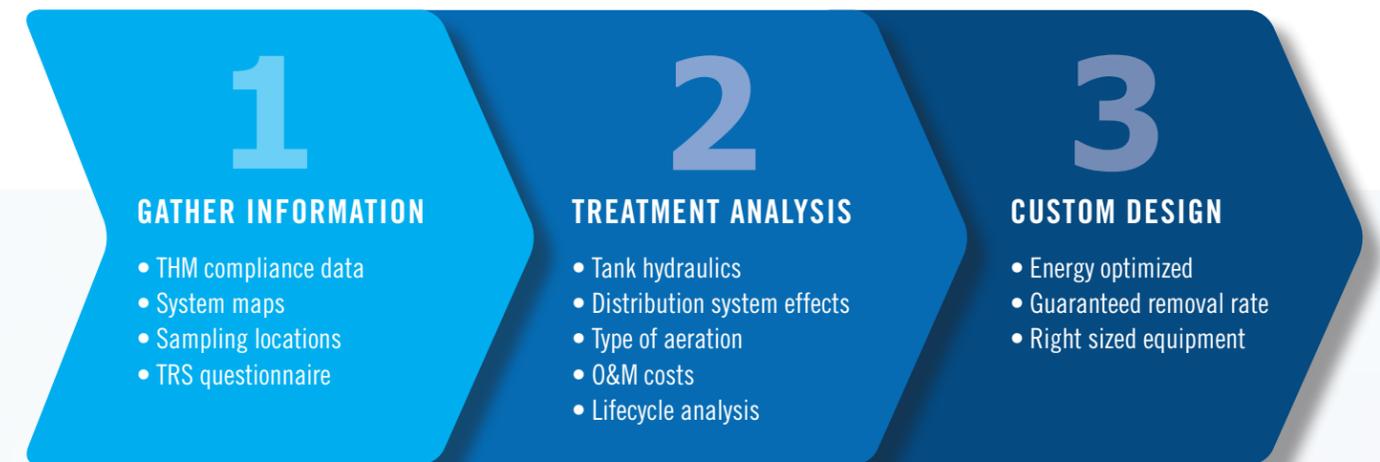
The Trihalomethane Removal System (TRIS™) is a custom-designed, energy-optimized system of mixers, aerators and ventilators that turns ordinary water storage tanks into water treatment systems. Unlike other treatment technologies for lowering THM levels (involving large-scale changes to water treatment plants), TRIS can be implemented quickly and cost-effectively – targeting locations in the water distribution system where THMs are the highest.



Optimized Performance and Energy Efficiency

When it comes to selecting the right THM removal system for your tank, custom design is key. Optimizing system design is critical for predicting and achieving THM removal rates, minimizing energy requirements and calculating long-term operating costs. PAX Water Technologies partners directly with municipalities and engineers to diagnose THM formation and perform a system-wide treatment needs analysis. This data, together with our proprietary design and performance modeling software, enables PAX Water Technologies to create in-tank aeration systems that are cost effective and energy optimized. The result is right-sized THM removal technology for your tank.

How We Work with You



>>> The success of the TRS aeration system in the Millingport tank has given us a new tool to reduce THMs in our system. We are now looking to apply this technology not only in other tanks in our system but we are also talking with our supplier about installation in their system as well to help reduce the high levels of THMs coming into our system.”

—Donna Davis, Stanly County Utilities Department



Mass Transfer Across the Air-Water Interface

TRIS Custom Design For Your Tank.

TRS20 SERIES

IDEAL FOR:

Small and low turnover tanks (less volume to be treated)

TANK TYPES:

Elevated, ground, standpipe

TECHNICAL DATA:

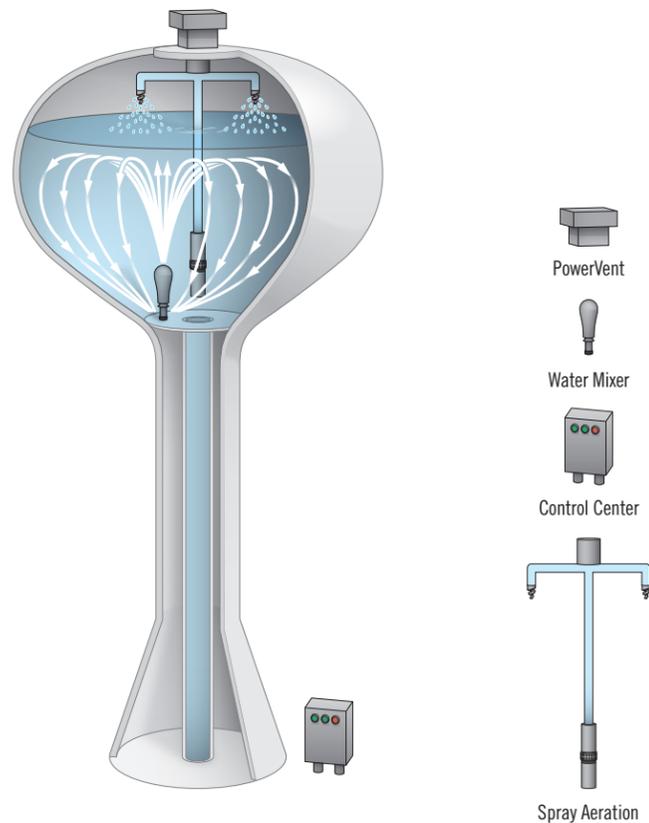
Aeration Style: Spray
HP Range: 1-7 hp

FEATURES AND BENEFITS:

- Energy-optimized spray pattern
- Submersible pump protector

OPTIONS:

120/240 VAC stepup transformer



TRS40 SERIES

IDEAL FOR:

Medium to large tanks with high turnover (more volume to be treated)

TANK TYPES:

Elevated, ground, standpipe, clearwell

TECHNICAL DATA:

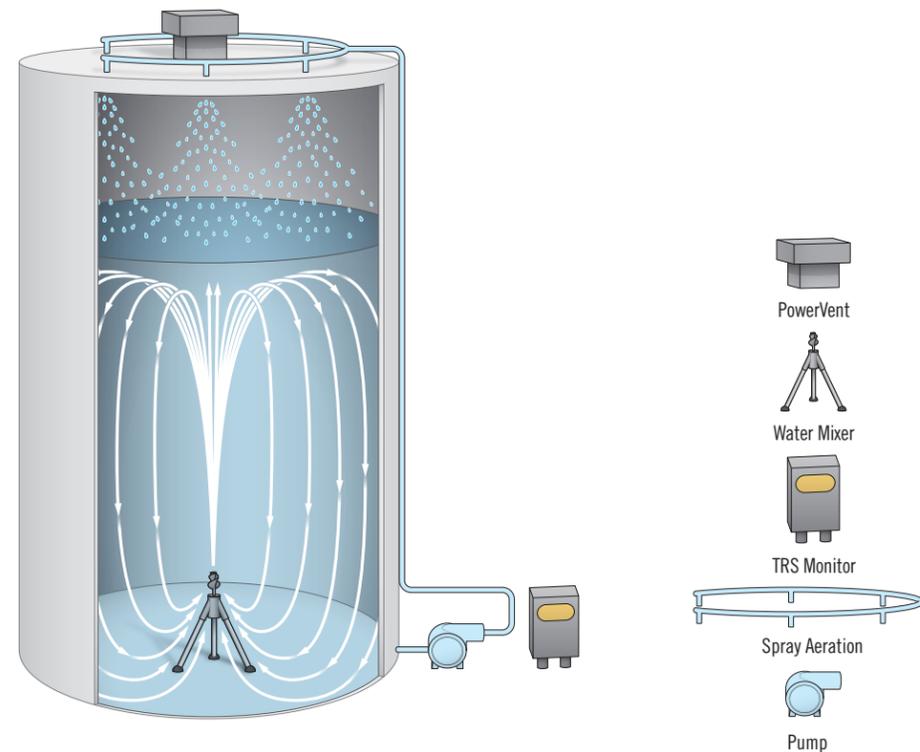
Aeration Style: Spray
HP Range: 7-100 hp

FEATURES AND BENEFITS:

- Energy-optimized spray pattern
- External pumps for easy maintenance
- All stainless steel pump skid

OPTIONS:

- Cell modem to transmit alarms
- 1-3 phase power converter



TRS50 SERIES

IDEAL FOR:

A range of tank sizes and tanks with high turnover (more volume to be treated)

TANK TYPES:

Ground, clearwell

TECHNICAL DATA:

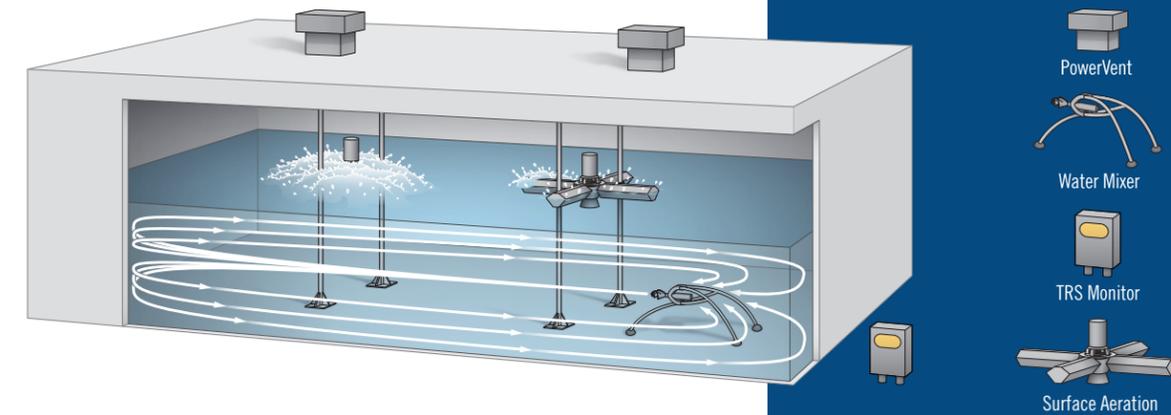
Aeration Style: Surface
HP Range: 3.5-200 hp

FEATURES AND BENEFITS:

- Clog-proof design
- Folding floats for easy install
- Stainless-steel aerators

OPTIONS:

- Cell modem to transmit alarms
- Active feedback loop control system for maximum energy efficiency



>> We are seeing THM levels 40-70% lower leaving our More Ave. tank than those coming in."

—Adam Feffer, Water Quality Engineer, San Jose Water Company



TRS Components

TRS is a custom-engineered solution that utilizes a portfolio of aeration technologies to achieve guaranteed THM removal goals. Using a proprietary design software, PAX Water Technologies configures these components to optimize energy efficiency while reducing cost.



TRS Surface Aerator

Developed in partnership with Aqua Aerobics, the leading manufacturer of aerators for wastewater treatment, the TRS Surface Aerator is the most energy-efficient THM aeration technology for treating large water volumes. Designed specifically for potable water, the TRS Surface Aerator features folding floats for an easy installation and is stainless steel, clog proof and NSF-61 certified. (TRS50 Series)



TRS Spray Aerator

The TRS Spray Aerator combines stainless-steel nozzles and high-efficiency pumps to create a droplet distribution pattern that maximizes THM removal while minimizing energy costs. With a proprietary mounting system that keeps each nozzle easily accessible and mechanical equipment located on the tank exterior, the TRS Spray Aerator is easy to inspect and maintain. (TRS20, TRS40 Series)



PAX PowerVent™

The PAX PowerVent is an active ventilation system with a rugged design specifically developed for water storage tanks. Mounted to the tank roof, these units remove THMs from the headspace of the tank and reintroduce fresh air. Designed to move a lot of air with a little power, this rapid air exchange is important for achieving maximum THM removal rates. (TRS20, TRS40, TRS50 Series)



PAX Water Mixer™

PAX Water Mixers continuously circulate water high in THMs to the top of the tank where they are volatilized and removed. With unparalleled mixing power, these mixers eliminate short circuiting and dead zones while remaining energy efficient and compact. PAX Water Mixer comes in a range of sizes and all models are stainless steel, NSF-61 certified and SCADA compatible. (TRS20, TRS40, TRS50 Series)



TRS Monitor

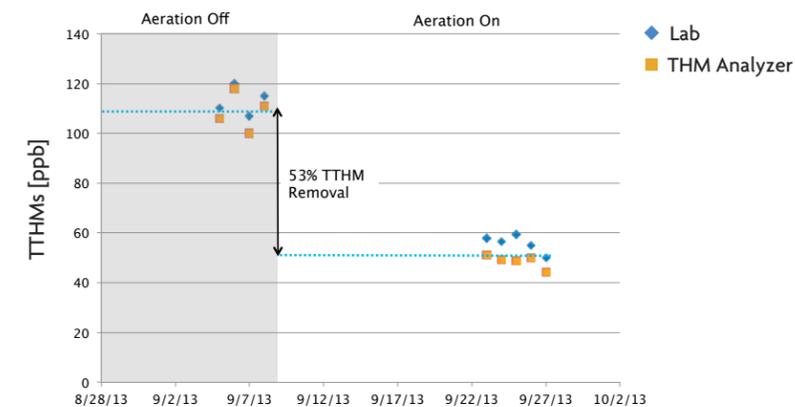
The TRS Monitor tracks the performance and operating condition of each system component in real-time and sends automated alerts to the platform of your choice. The system utilizes local data storage, SCADA and an optional cellular modem to ensure that the entire system is running smoothly. (TRS40, TRS50 Series)

Success Stories

Rockville, Maryland

TANK SIZE: 8 MG **TANK TYPE:** Above ground, steel **THM REMOVAL:** 53%

After an unexpected THM violation in 2008, the City of Rockville discovered a significant weakness in their distribution system: an oversized 8 MG steel storage tank. To avoid the cost and complexity of replacing their tank, the City instead installed an in-tank aeration system in the 8 MG reservoir. By July 2013, the system was up and running and validation testing had begun. Results showed that TRS removed an average of 53% of the THMs in the tank.



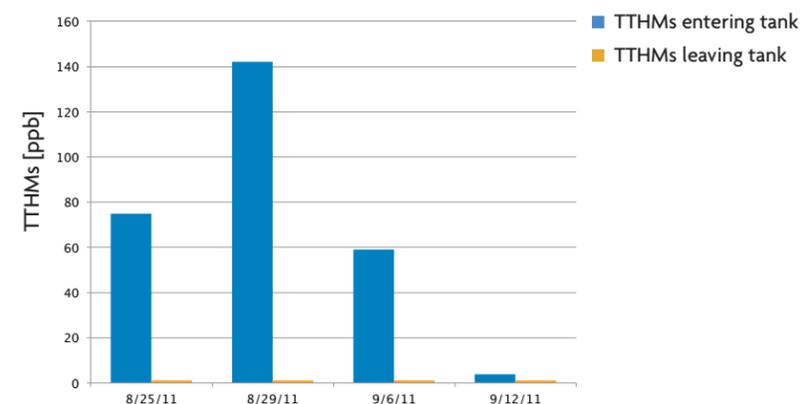
>> Installing an aeration and mixing system ended up being the only viable option for saving this tank."

—John Hollida, Civil Engineer, Rockville, Maryland

Stanly County, North Carolina

TANK SIZE: 200,000 gallons **TANK TYPE:** Elevated **THM REMOVAL:** 99%

Stanly County received finished water that was often at or above the MCL for TTHMs, and without a treatment plant of its own, were limited to few options for bringing their water into compliance. An in-tank aeration system targeting a peak removal of 90% was designed and installed for a 200,000-gal tank in August 2011. THM samples collected after installation revealed that THM levels leaving the tank were 0 µg/l (non-detect).



We are committed to creating a world where high-quality drinking water is sustainably produced, efficiently distributed, and universally valued as a life-giving foundation for healthy communities.

Our mission is to deliver innovative, durable and elegant water quality solutions, inspired by nature and backed by science, to our partners and the communities they serve.

ANY TANK. ANY SIZE.™



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