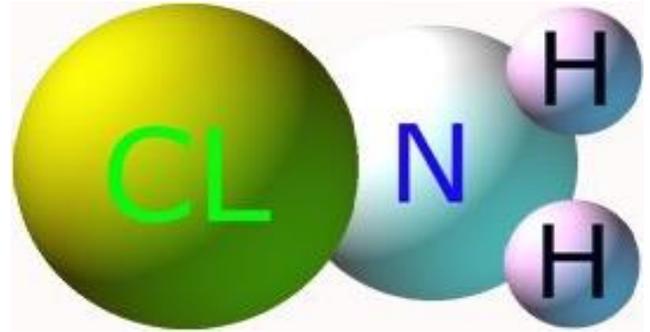# Water Disinfection

Mono-chloramine: Inactivation of Pathogens

What is a mono-chloramine and why do we use it?

Untreated water contains pathogens: bacteria, viruses, and other microbes that have the potential to cause disease. Therefore, we must disinfect the water to make it safe for consumption.

Chlorine is the most commonly used water treatment disinfectant. However, chlorine by itself quickly dissipates from the water due to demand such as organics, elevated water temperatures, and other characteristics of the water being treated. So, to maintain the disinfectant property of chlorine for longer periods of time, we combine it with ammonia to form a mono-chloramine disinfectant.

By using mono-chloramine we maintain a disinfectant residual through every stage of treatment at the Azle Water Treatment Plant and we are able to maintain a constant residual throughout the entire 125 miles of distribution system.

The Texas Commission on Environmental Quality (TCEQ) is the regulatory agency that sets standards for microbial inactivation for potable water treatment plants throughout the State. The TCEQ requires treatment plants that utilize chloramines to maintain a minimum residual of 0.50 mg/L within the distribution system. When water leaves the Azle Water Treatment Plant, it has an average residual of 3.8 mg/L and this allows for any loss that may occur in the distribution system, ensuring we never fall below the TCEQ minimum requirement.

For more information, contact the Azle Water Treatment Plant at 817-752-2686
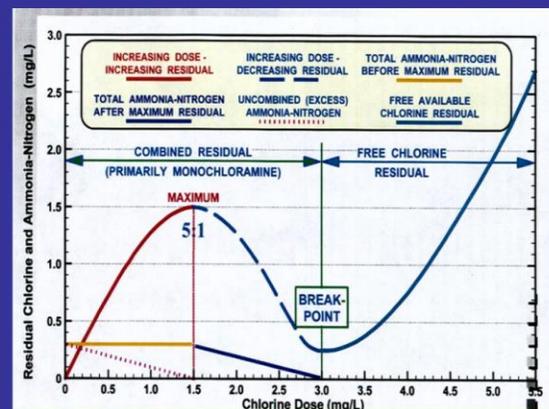
The following link will take you to a presentation that illustrates how we use the curve above to form the mono-chloramine disinfectant.

https://www.youtube.com/watch?v=idNMGXbyTbA

Bacteriological Testing

To assure the effectiveness of the disinfectant, the City collects 16 samples per month from the distribution system to test for any bacteriological contamination and results are sent to the TCEQ.

Distribution System Sampling

On a daily basis, we collect a sample from the distribution system to check water quality and disinfectant residual. If we find that the residual is getting low in an area due to low water usage, we flush the water lines to bring the residual back up.