

Chlorine Gas Replaced by Dry Calcium Hypochlorite System in New York Suburb



Town of Greenburgh Consolidated Water District No. 1 installed two Constant Chlor[®] MC4-150 Feeders for consistent chlorination.

With a natural pH of approximately 7.2, drinking water from the City of New York has been called the “champagne” of drinking water. Some claim it’s the secret behind the unique taste and qualities of New York’s famous bagels and locally brewed beer. In fact, the water comes from the largest unfiltered water supply in the U.S., which draws from a network of 19 reservoirs within a 2,000-square-mile watershed. This expanse extends 125 miles north and west of Manhattan, and inside that arc are many municipalities and water districts that buy their water from the city.

One of them is the Town of Greenburgh Consolidated Water District No. 1, serving Greenburgh in Westchester County, west of New York, as well as five other small municipalities. The district serves approximately 39,993 people via 11,500 service connections, pumping seven million gallons per day on average. Those connections include the bottling plant of a major soft drink manufacturer. To keep water pressure steady throughout the system, the district operates two high-pressure zones and one low-pressure zone, using six storage tanks to regulate flow.

« While chlorine gas has been around for more than 100 years and is very cost-effective, it can be extremely dangerous for our personnel, especially when they’re changing tanks. »

Time for change.

For decades, the district had been using chlorine gas to manage residual chlorine in the water, sourced mainly from New York City’s Kensico Reservoir via the Delaware Aqueduct. In 2012, the city installed a UV-treatment plant above the point where the district drew its water, so it could lower the amount of chlorine used in disinfecting the water — and lower the amount of chlorine by-products in the water.

According to John Devany, the district’s superintendent, this meant the district would need to boost its own chlorine to ensure a steady chlorine residual of 1.4 mg/L. “We would have struggled to keep our residual up, especially in the summer,” he says. “So we needed to consider how we could do that, which was an opportunity to upgrade our own chlorination system.” Devany huddled with Chuck Martins, the district’s chief water treatment plant operator, to consider their options. “While chlorine gas has been around for more

than 100 years and is very cost-effective,” Martins says, “it can be extremely dangerous for our personnel, especially when they’re changing tanks.”

One option they quickly decided against was to install a system using sodium hypochlorite (i.e., liquid bleach). “When you add up the capital costs and space requirements of building a huge chemical bulk storage tank and day tank, plus having to provide secondary containment, the costs of the sodium hypochlorite approach were prohibitive,” says Devany.

Instead, they chose the “convenience and lower cost of calcium hypochlorite technology.”

After carefully evaluating calcium hypochlorite systems from leading suppliers, Devany and Martins chose to install **Constant Chlor**® MC4-150 Feeders from Lonza Water Treatment, a Switzerland-based, global life sciences company.

“The MC4-150 system’s relatively small size and simplicity, its [positive displacement] chemical metering pump, which gives us precise control of our residual chlorine, plus Lonza’s exceptional service, were our deciding factors,” Martins says. “Installation was simple, and the system is easy to learn and use.”

Consistent chlorination.

The **Constant Chlor**® System works by preparing and automatically delivering a consistently accurate dose of available chlorine (AvCl) to the district’s water. The **Constant Chlor**® MC4-150 Feeder can provide up to 150 pounds of AvCl per day on a sustained basis. “We have the MC4-150 connected to our SCADA distributed control system, which monitors our residual chlorine in real time, 24x7,” Devany notes. “We’re able to easily keep our 1.4 mg/L residual steady all year round.”

The **Constant Chlor**® Feeder differs from competitive erosion feeders on the market today. Its patented spray technology injects water into the unit by spraying upward into a bed of briquettes. This short, intermittent spray cycle contacts the entire bottom of the bed evenly, not just the material resting on the grid. Specifically designed for use in the **Constant Chlor**® Feeder, the briquettes are about the size of a charcoal briquette with a pillow shape. The shape helps optimize their packing in the spray bed.

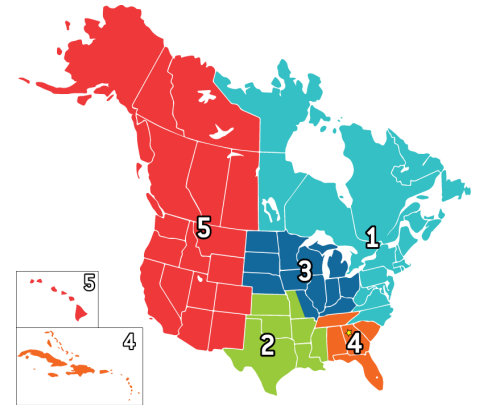


« We’re able to easily keep our 1.4 mg/L residual steady all year round. »

Martins states, “It’s easier for our people to replenish the **Constant Chlor**® MC4-150 units with 50-pound pails of briquettes than to roll around heavy chlorine gas cylinders, not to mention avoiding the hazards of connecting the cylinders to their manifolds.”

The Town of Greenburgh now can confidently keep what’s been called the “champagne” of water flowing out of their community’s taps for decades to come.

Find Your Territory Contact



- 1) Lou Finelli
(732) 535 3308; louis.finelli@lonza.com

- 2) Terry Grisham
(501) 517 7665; terry.grisham@lonza.com

- 3) Terry St. Germain
(815) 725 1864; terrance.stgermain@lonza.com

- 4) Stacy Willis
(256) 609 8214; stacy.willis@lonza.com

- 5) Elio Limonchi
(619) 597 4712; elio.limonchi@lonza.com

North America
1200 Bluegrass Lakes Pkwy
Alpharetta, GA 30004
constantchlor@lonza.com

All trademarks belong to Lonza or its affiliates or to their respective third party owners. Review and follow all product safety instructions. All product information corresponds to Lonza’s knowledge on the subject at the date of publication, but Lonza makes no warranty as to its accuracy or completeness and Lonza assumes no obligation to update it. Product information is intended for use by recipients experienced and knowledgeable in the field, who are capable of and responsible for independently determining the suitability of ingredients for intended uses and to ensure their compliance with applicable law. Proper use of this information is the sole responsibility of the recipient. This information relates solely to the product as an ingredient. It may not be applicable, complete or suitable for the recipient’s finished product or application; therefore republication of such information or related statements is prohibited. Information provided by Lonza is not intended and should not be construed as a license to operate under or a recommendation to infringe any patent or other intellectual property right. No claims are made herein for any specific intermediate or end-use application.