

Case Study

City of Keene, New Hampshire Water Treatment Facility



Overview

On May 10, 2022, City Staff were kind enough to meet with us to discuss the water treatment process for the surface water that supplies the City of Keene, New Hampshire and to provide a tour of the facility.

The facility provides an average of 2 Million Gallons per Day to the City of Keene, which has approximately 6100 connections that supply approximately 23,000 residents. During the work week, that number doubles due to the influx of people who make their living in Keene. The plant was built with expansion in mind and could potentially serve many more consumers.

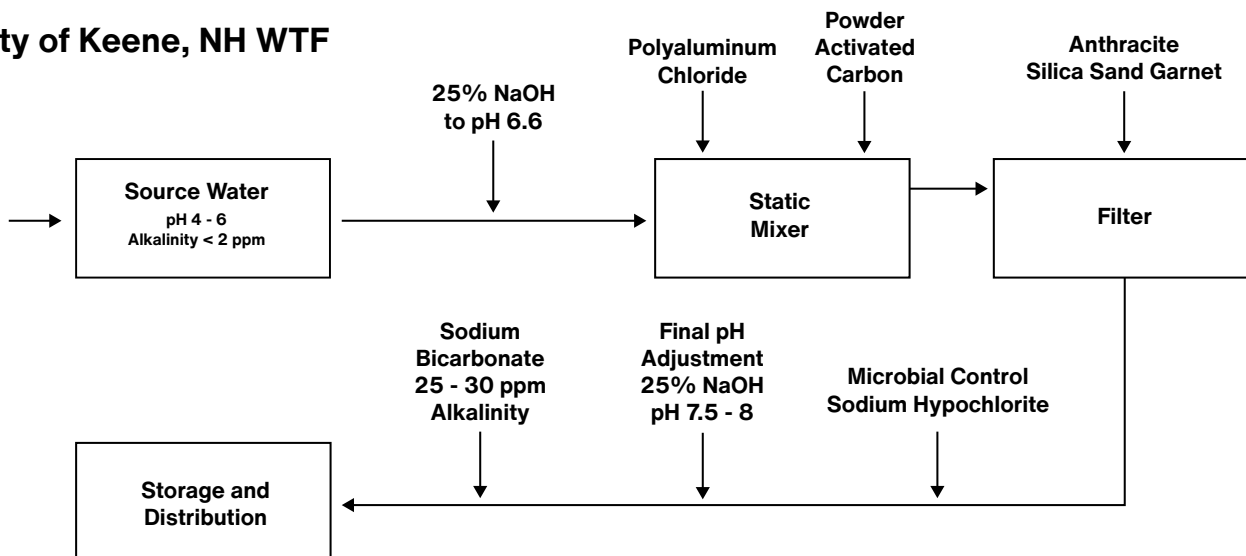
The source water comes from two reservoirs, the 700 million gallon Woodward Pond and the 160 million gallon Babbidge Reservoir, both in the nearby town of Roxbury, NH.

The source water is acidic (pH 4 - 6) and very soft, having extremely low alkalinity (<2 mg / L). These traits mean the untreated water is corrosive in nature and if left untreated, would be able to dissolve unwanted metals from service lines and home plumbing.

Water Treatment Process

The process starts with addition of 25% Sodium Hydroxide to adjust the pH of the incoming water to 6.6. The primary coagulant, Polyaluminum Chloride, and activated carbon are added and mixed inline. The water flows into the Trident Filter for multistage solids removal, passing through layers of anthracite, silica sand and garnet to the filter outflow. The water is chlorinated and adjusted to a final pH of 7.5 - 8 with sodium hydroxide. Addition of Sodium Bicarbonate increases the alkalinity into the 25 - 30 ppm range, and buffers the water to prevent it from reaching corrosive levels.

City of Keene, NH WTF



Case Study

City of Keene, New Hampshire Water Treatment Facility



Sodium Bicarbonate Storage and Handling

The alkalinity adjustment requires 500 pounds per day of sodium bicarbonate. The Keene facility sources the material in 50-pound bags to facilitate storage and handling. A hopper with a 3000-pound capacity is filled with bicarbonate that feeds a mixing tank. The 3,000-pound charge is sufficient for 6 days of operation. The addition of water to the tank creates sufficient turbulence and movement to dissolve the bicarbonate, so mechanical mixing is not required.

We thank the City of Keene Water Treatment Facility for sharing their time and insights.

For More Information

More information about the City of Keene Water Treatment Facility can be found here: <https://keenenh.gov/sites/default/files/Pubworks/WQR-Keene%20NH-Final%20Web%20Version.pdf>

For more information about using Arm & Hammer™ sodium bicarbonate for water treatment, click here: <https://www.ahperformance.com/markets/pools-water-treatment/potable-water/>



To contact technical support, find a distributor or request a sample visit:
www.ahperformance.com