

## Bluebonnet Rural Water Corporation in Texas Solves Chloramine Residual Issue by Adopting a Unique Chemical Mixing and Dosing Technology: *Process Solutions, Inc.'s Tank Shark® Chloramine Management System*

Bluebonnet Rural Water Corporation (BRWC) is a subsidiary of Bluebonnet Electric Cooperative, one of the largest electric cooperatives in Texas. BRWC serves approximately 1,094 water meters in northeast Washington County, TX but had a water storage problem not unfamiliar to even the largest water utilities in Texas. Disinfectant residual stratification in a 2 million gallon tank was creating uneven levels of residual chloramine in the BRWC distribution system resulting in taste and odor issue as well as occasional nitrification events.

In 2010, BRWC decided to install a Tank Shark® Chloramine Management System from Process Solutions, Inc. (PSI). The Tank Shark® system generates a 75 gallon per minute (GPM) upward swell from the bottom of the 60' tall X 75'diameter tank which effectively removes persistent stratification issues by imparting momentum to the mass of water in the tank over time. The Tank Shark® high energy mixing zone is utilized to fine tune the dosing of both chlorine and ammonia to ensure optimal monochloramine levels. A sample line draws 10 gallons

per hour and feeds a chlorine analyzer for real time analysis of the tank residual. If the Tank Shark® system detects a chloramine deficiency (3-5% below setpoint), the system injects a ratio of gas chlorine and ammonia (liquid ammonium sulfate – LAS) to reestablish proper residual. By combining a real time view of the tank residual that reflects the entire tank's condition, the Tank Shark® system is able to only dose the correct ratio of ammonia to chlorine without overshooting or under-dosing either reactant. So, regardless of system flow or operating conditions, BRWC could rely on a homogeneous and optimal level of residual from the storage tank.

With the Tank Shark® system, there is no confined space entry, power, pumps or moving parts within the reservoir which simplifies installation and maintenance tremendously. However, the owner opted for a small hoist on the roof of the tank to raise and lower the 50 pound Tank Shark® mixing and eductor assembly.

In a perfect combination of brawn and brains, the Tank Shark® Chloramine Management System was able to deal with one of the most widespread issues of chloramine residual maintenance in reservoir systems for BRWC.

"The system is working well. We do have to calibrate the analyzers every other week and replace the gel for the probes once every six months. So, overall, we have no complaints!"

*Damon Boniface*

*Lead Operator, Bluebonnet Rural Water Corporation*

