Greeneville, TN Federal Savings Bank
Installation and Operation Report
June 28, 2016 - March 28, 2017

Located at 101 W Summer St., Greeneville, TN, the building was constructed in 1906 as a Federal Courthouse and Post Office. The three story, stone and brick building was retrofitted for a modern heating/ cooling system in the 1970's. It is now a private bank. All of about 20,000 sq. ft. are occupied. Greeneville is located in the Eastern most region of Tennessee, near the Western edge of the Appalachian Mountains, at an elevation of 1,519 ft. Average temperatures (F) range from the mid 40's to the high 60's, with extremes at the mid 20's (Jan) to the high 80's (Jul). Average annual precipitation is <43 inches, with an average of nine inches of snowfall yearly.

The heating/cooling system consists of a water source heat pump using a BAC 146 ton-cooling tower year round. Two boilers and a plate heat exchanger are located in the building's basement. The tower is on the roof. Previous treatment was typical chemical injection consisting of 5-chloro-2-methyl-4-isothiazolin-3-one: 2 methyl-4-isothiazolin-3-one, Magnesium Nitrate, Organophosphates, Triazole, Synthetic Polymers, Sodium Molybate, Molybendium, Sodium Hydroxide, Sulfuric Acid, Maleic Anhydride Polymer, Tricarboxylic acid, Sodium bromosulfamate and sodium chlorosulfamate. Upon Ozomax system installation, all chemical connections were removed.

Installation consisted of an "Ozopen"TM control panel/head works (Plug/Play) in the attic of the building, plugged into a 20 amp/ 120vac receptacle. Low Voltage (24vdc) wires were routed through PVC conduit to a probe device (Ozopen) in the sump of the cooling tower. Installation took less than one day. A small recirculating pump and a 5-micron filter were added to remove sediments and particulates precipitated by oxidation of organics/ dust treated in sump.

No records had been kept on previous water use. There has been zero blow down since installation The cooling tower sub meter shows 69,000 gallons used since installation (9 months). This includes one complete drain and refill for mechanical repairs to the sump. The metered water use amounts to less than textbook pan evaporation.
Time in service- June 28, 2016 - (current) as of March 28, 2017

Summary of operation

- There zero discharge/refill for blow down to date. Net water added has been for evaporation and drift.
- All toxic/ halogenated chemicals discontinued. Small dosing of Salt (NaCl) and Baking Soda (NaHCO3) added on startup/ balancing to build/stabilize TDS.
- No tower cleanings have been necessary since Ozomax system installation.
- The system is operated at > 1ppm of O_3, including mixed oxidants, at all times. The pH is maintained at 8-8.7, and the TDS is maintained at <= 1500. No signs of further corrosion.
- No Legionella bacteria present (0 pfu count) upon lab testing (March 30, 2017).

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Description/ pictures of the operation/ including sump/basin/fill and airside of fill

Position of Cooling Tower on roof

Ozomax Headworks installed in building attic

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OzoPen placed in Cooling Tower sump. Note bubble diffusion in water

Before: Air side of fill
Larger bubbles of Hydrogen released in water. Stabilizes pH in water

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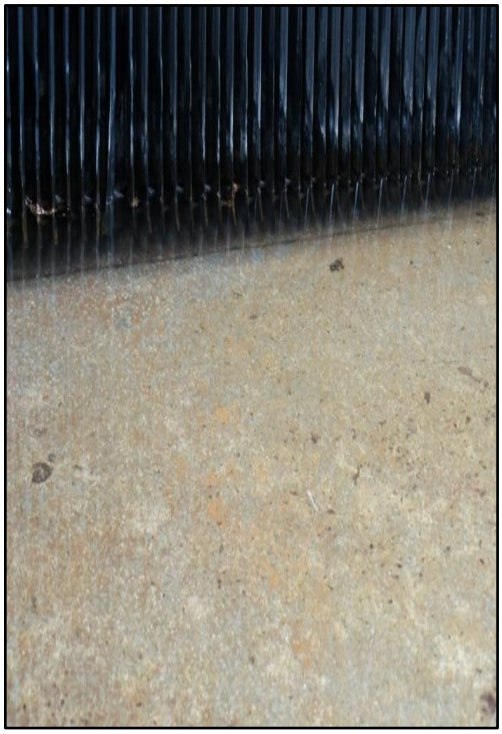
Before: Algal deposits on floor of sump- air side



After: Floor of sump- air side

After: Note flex hose of filter pump used to remove oxidized particulates

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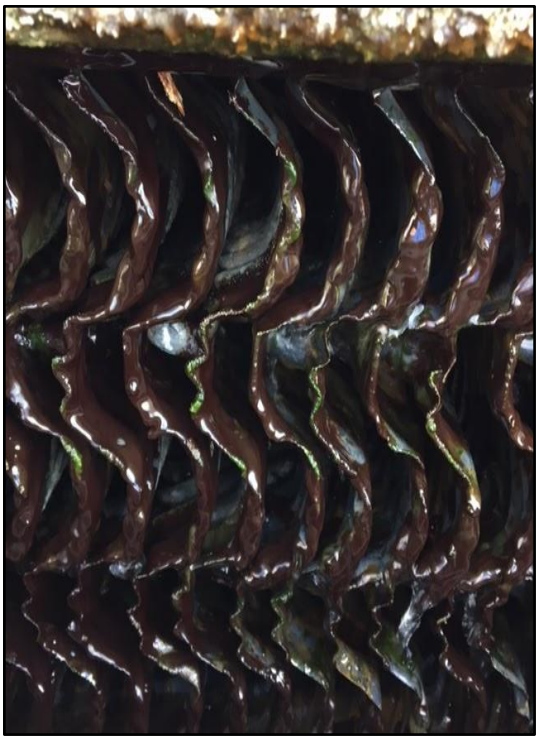
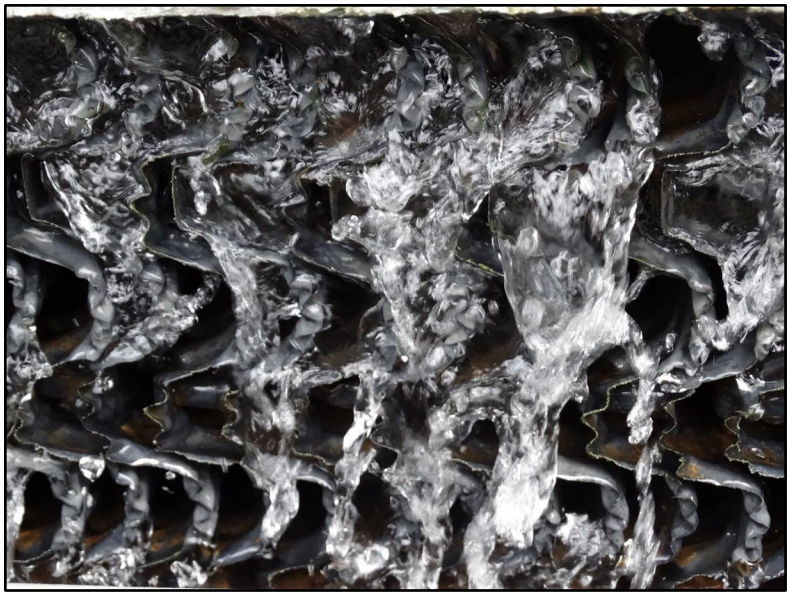
Before: Fill showing algal/ biofilm deposits/growth



Interim: Algal growth dying



After: Fill showing elimination of algal/ biofilm growth

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Customer Reference

"Since our bank holds a great amount of value to our community, our history and our culture, we are pleased to have the Ozomax AOP system in place for the last nine months. We are no longer adding toxic chemicals to our cooling tower system, and discharging undesirable wastewater. The savings we are accruing more than pays for the AOP water treatment service. Our water is clean, disease free and we are doing our small part for environmental conservation in our beautiful community."

Bobby Wells, Executive Vice President, Greeneville Federal Bank