



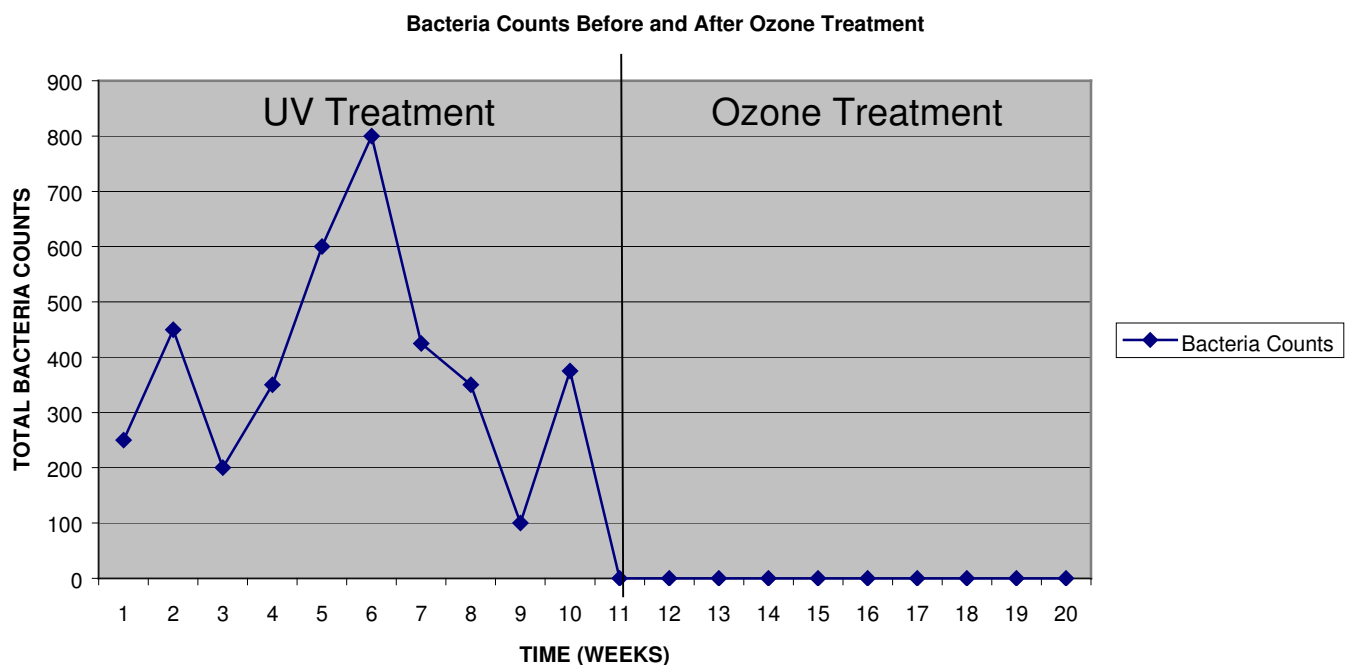
## Clean Streams™ Ozone Systems For Water Storage Tanks

**Description:** Ozone is a powerful biocide that kills all microorganisms through oxidation, destroying them and leaving no chance for developing an immunity that often occurs with chemical biocides. Ozone is particularly beneficial in protecting water from microbiological contamination and re-growth in water storage tanks where other chemical disinfectants are either ineffective or not allowed because their residual would adulterate product made with the stored water. Compared to UV or chemical disinfectants, ozone produces far superior results. (See graph below that shows results of ozone compared to UV treatment)

Applications that are particularly well suited for ozone include water storage tanks that are used in the food, pharmaceutical, health care products, and microelectronics industries.

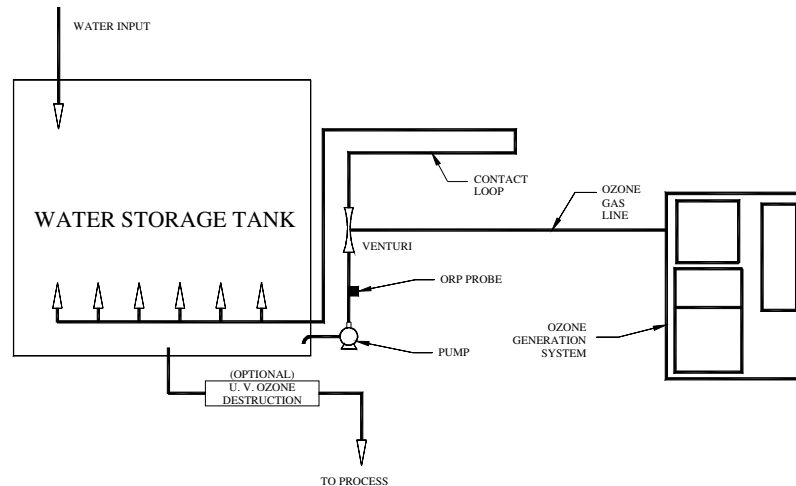
### Benefits of Clean Streams™ Ozone Systems for Water Storage Tanks:

- **Effective Disinfection without Chemical Residuals** - No chemical impurities to affect product quality.
- **On-Line System Sanitation** - Requires no other agents. No need to open or rinse system.
- **Eliminates Chemicals** - No spills, no drums to handle or dispose.
- **Automated System** - Provides automated, full time treatment that simplifies operation.
- **Makes Workplace Safer** - No chemical exposure.



**Application is Simple and Cost Effective:** Ozone is applied by delivering ozone gas from the ozone generator to a side stream loop from the storage tank. (See diagram below.) Water is pumped from the tank through a venturi that draws the ozone into the water stream. The mixing in the venturi, followed by further mixing in the contact loop, fully dissolves the ozone that is then returned into the bulk water of the tank through a perforated distribution bar. The ozone concentration is automatically controlled through an ORP (Oxidation/Reduction Potential) sensor. Feedback from the sensor to the ozone generator controls the dissolved ozone concentration in the tank. In “high” or “ultra” pure water applications, the residual ozone can be removed from the water prior to its release to the process using an ultraviolet light ozone destruct unit.

## OZONE TREATMENT SYSTEM FOR WATER STORAGE TANKS



**On-Line Sanitation:** In addition to superior disinfection of incoming water and preservation of the quality of tank bulk water, ozone offers the benefit of sanitizing the storage tank and all downstream piping without additional chemicals or equipment. Since ozone is already being administered at a disinfection level, all that is needed is to ramp up the ozone generator to allow the tank to reach a higher ozone concentration. As this water with high ozone concentration is sent downstream it will sanitize all the piping it flows through. Because this approach to system sanitization is so simple and cost effective, sanitizations can be scheduled more frequently which ultimately lead to improved product quality. In the case of “high” or “ultra pure” water systems that use an UV ozone destruct, the UV ozone destruct will be turned off during sanitization so that ozone can reach the farthest points in the piping system. System sanitation is assured by monitoring for dissolved ozone in the water at the furthest point downstream or in the plant’s recirculation loop. Once the presence of ozone is observed in the flowing water, system sanitization is complete.

For more information contact:

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