

# TONKA WATER, A U.S. WATER BRAND PROJECT PROFILE

## HAMILTON TOWNSHIP, NEW JERSEY

### Well #9 Filtration Plant



### Project

Hamilton Township, a growing community located northeast of Philadelphia needed a new treatment system that could meet new EPA contaminant standards as well as support future population growth. Well #9 had excess iron and manganese and to remain in compliance the township sought help from Adams, Rehmann & Heggan & Associates Inc and Tonka Water, a U. S. Water Brand, to find a solution. The new plant was designed with a flow rate of 1500 gpm and a customized solution for iron and manganese removal to meet the standards well into the future.

### Process

Water is supplied from a groundwater well. The treatment process consists of a 1500 gpm induced draft aerator, 30 minute detention tank, and four 10' diameter x 24' long dual cell OptaCell™ horizontal pressure filters. Water is pumped from the 30 minute detention tank through the OptaCell™ filters to elevated storage and the distribution system. Water used for the filter backwash cycle is stored in a covered decant tank where a large portion of the filter backwash wastewater is decanted, then returned to the head of the treatment plant for re-use.

#### APPLICATION

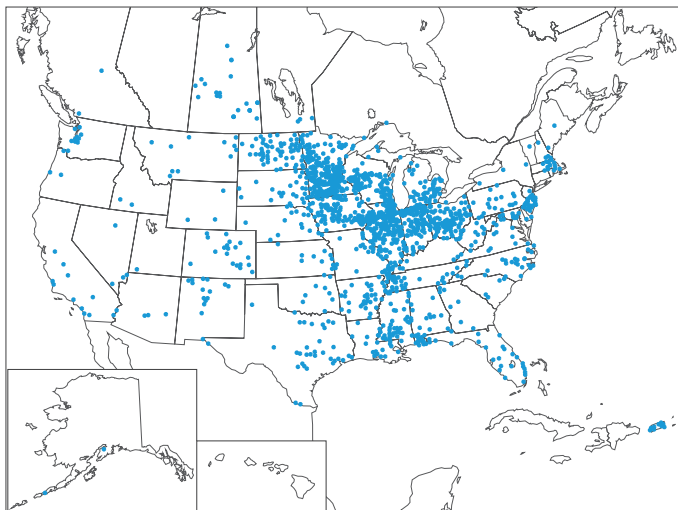
Iron and manganese removal

#### TREATMENT SYSTEM

Four OptaCell™ filters and an Induced draft aerator™

#### FEATURES

- Tonka Water's Simul-Wash™ backwash system
- Versatile
- Operationally efficient
- Easy to maintain



## Tonka Water Guarantee

Tonka Water provides the best custom manufactured water treatment systems in the industry. Our people will deliver excellent service and support for your project from conceptual and cost-effective design, to construction and commissioning; and throughout the system warranty and operational life of the project.

*Thousands of quality water treatment installations since 1956.*

## Performance

The raw water analysis summarized below reflects moderate to high concentrations of iron existing in the well water. The treatment process has been highly efficient in delivering high quality drinking water as indicated below. The water treatment plant as designed brings current state-of-the-art technology to maximize treatment plant production (99.7% efficient) and a controllable air and water backwash process that prevents media loss while providing flexible quality management of the filter media cleaning process.



	Raw Water	Finished Water
Iron (Fe)	1.3 - 1.5 mg/L	.08 - 0.1 mg/L

## Simul-Wash™ Backwash System

The treatment plant also includes Tonka Water's value-added Simul-Wash™ backwash system. This unique backwash system uses air and water simultaneously, at sub-fluidized rates, to provide the most effective means of backwashing granular filter media<sup>1</sup>. Tonka Water's media rejecting Simul-Wash™ trough enables the air and water backwash cycle to continue indefinitely without media loss. This results in optimal filter cleaning efficiency and prolonged filter runs, while saving approximately 50 percent of backwash wastewater compared to conventional methods. What otherwise would have consumed 103,000 gallons in a conventional water only filter backwash application, the Simul-Wash process uses only 60,000 gallons for all four filters, a savings of 43,000 gallons per backwash cycle.

<sup>1</sup>Amirtharajah, Appiah, et al. Optimum backwash of dual media filters and GAC filter-adsorbers with air scour, AWWA Research Foundation and American Water Works Association, 1991.



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