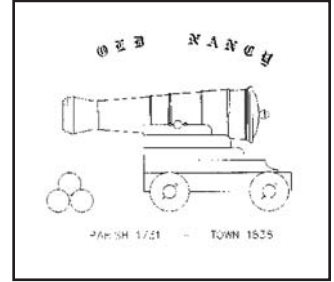




TONKA EQUIPMENT COMPANY

Project Profile

Georgetown Water Treatment Plant Georgetown, MA



TOWN OF GEORGETOWN

Contact: Glenn Smith
Manager, Water Dept.
(978) 352-5750

DESIGN ENGINEER

Haley & Ward Inc.
Contact: Scott A. Miller, P.E.
(781) 890-3980

GENERAL CONTRACTOR

Waterline Industries
Contact: Ralph Dumke
(603) 474-7477

TONKA REPRESENTATIVE

BAU/Hopkins
Contact: Alan Hopkins
(508) 699-9300



APPLICATION:

Iron and Manganese Removal

TONKA PROCESS EQUIPMENT:

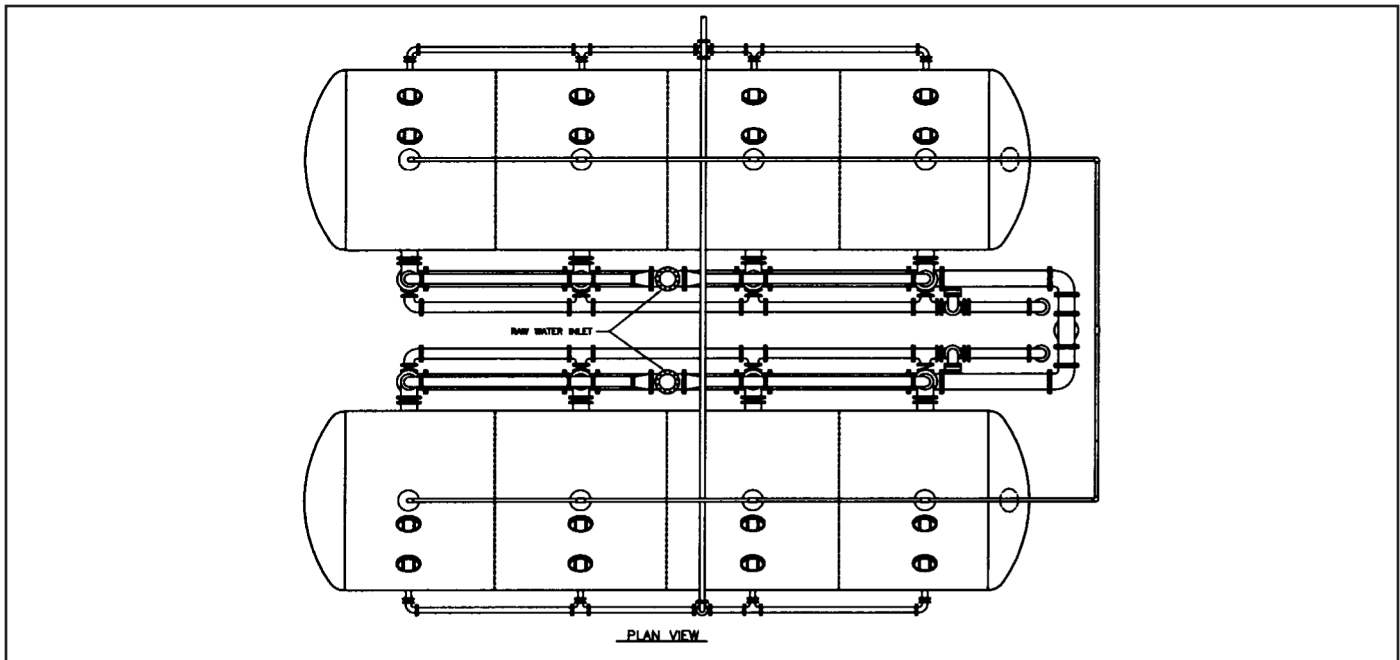
Horizontal pressure filter isolated cell design
with sustained Simul-Wash™ backwashing

PROJECT BACKGROUND

Historically aggressive waters within the Town of Georgetown, Massachusetts distribution system over time led to a degradation of service and corrosion of internal plumbing. The Board of Water commissioners adopted an approach of treating this water to reduce the aggressiveness of the water by raising the pH levels. In 1999, the Board of Water Commissioners approved the construction of a 2.5 mgd groundwater treatment facility to treat water from the Marshall wells which contain moderate levels of iron and manganese.

PROCESS

The treatment processes consist of chemical feed for oxidation, disinfection and pH control, and two (2) horizontal pressure filters isolated cell design with a dual media bed of manganese greensand and anthracite. Water is pumped directly from the wells through the filters to storage and the distribution system.



The horizontal pressure filters are designed with multiple cell compartments above AND below the underdrain within each vessel for a total of 8 individual filter cells. This unique filter design allows for an individual cell to be backwashed or taken completely off line while the remaining seven cells continue to produce filtered water. Each filter cell supplied includes the value added Simul-Wash™ backwash process. This unique process uses air and water in combination at sub fluidization water rates, providing the most effective means of backwashing granular media filters¹. Tonka's Simul-Wash™ media rejection backwash trough was integrated into the filter design which enables the air and water backwash cycle to continue for a limitless period of time without media loss. These process features maximize filter cleaning efficiency and reduce the backwash wastewater generated by approximately 50% over conventional methods.

PERFORMANCE

The raw water analysis summarized below reflects moderate concentrations of iron and manganese existing in the water. The treatment process has been highly efficient in delivering high quality water as indicated below.

	Raw Water	Finished Water
Iron (as Fe)	2.5 mg/l	0.01 mg/l
Manganese (as Mn)	1.0 mg/l	0.02 mg/l

FOR ADDITIONAL DETAILS, CONTACT:

Tonka Equipment Company

¹ 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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763-55-WATER • 763-559-2837 • FAX: 763-559-1979 • www.tonkawater.com
 P.O. BOX 41126 • PLYMOUTH, MINNESOTA 55441-0126 • 13305 WATERTOWER CIRCLE • PLYMOUTH, MINNESOTA 55441