



# TONKA EQUIPMENT COMPANY

## Project Profile

### Village District of Eastman, NH Water Treatment Plant

#### VILLAGE OF EASTMAN

Contact: Virginia Buckley  
District Manager  
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#### DESIGN ENGINEER

*Dufresne-Henry, Inc.*  
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#### GENERAL CONTRACTOR

*DHB Design/Builders, Inc.*  
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#### TONKA REPRESENTATIVE

*BAU/Hopkins*  
Contact: Alan Hopkins  
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#### APPLICATION:

Iron and Manganese Removal

#### TONKA PROCESS EQUIPMENT:

Vertical Pressure Filters (3)

### PROJECT BACKGROUND

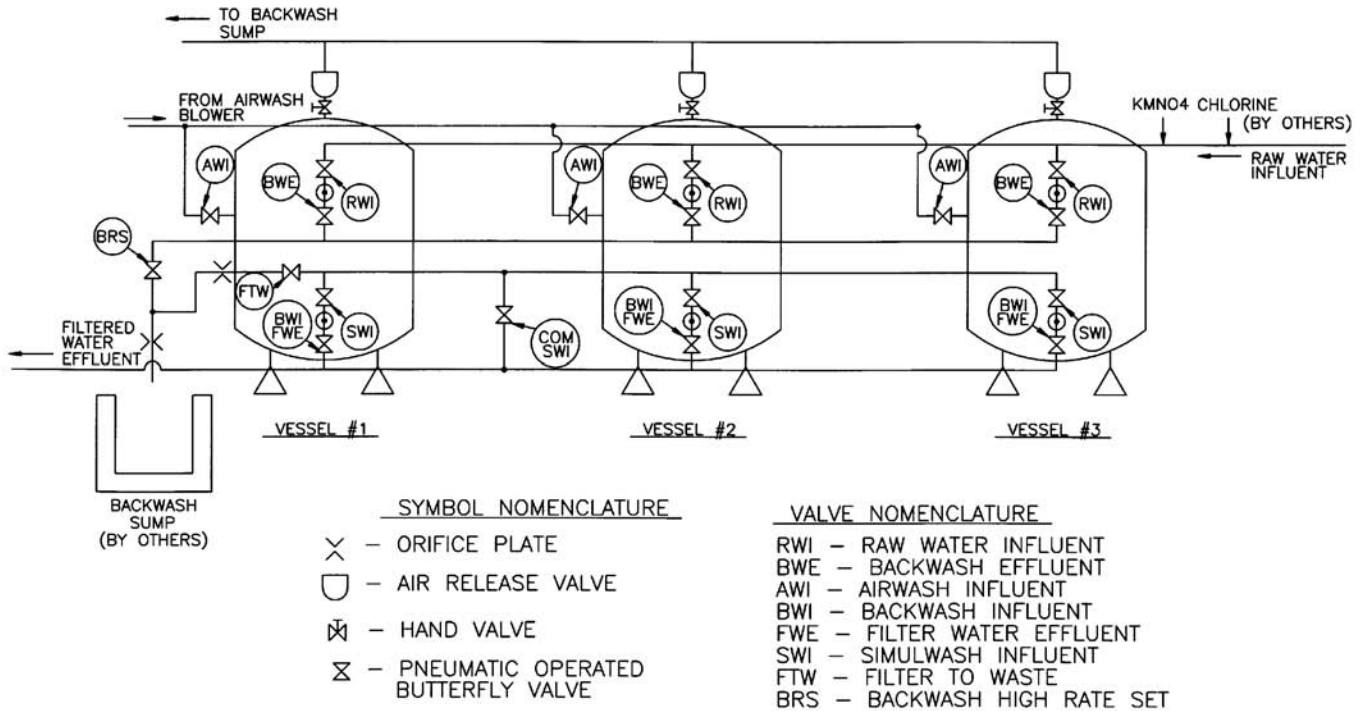
This groundwater treatment plant was installed in early October 1998, and was designed for iron and manganese removal at a flow rate of 300 GPM. Prior to installation, only disinfection and pH adjustment were provided through chemical feed.

### PROCESS

The water supply is received from two wells. Chemical addition for pH adjustment, disinfection, and iron and manganese oxidation is added prior to pressure filtration and distribution. Backwash water is discharged to a lagoon for recharge back into the groundwater.

Three eight-foot diameter vertical pressure filters manufactured by Tonka Equipment Company are employed to remove the iron and manganese. Dual media consists of 18 inches of manganese greensand with a 12 inch anthracite cap. The vertical pressure filters incorporate the value-added "Simul-Wash™" backwash process. This process utilizes air and water simultaneously for the most effective means of backwashing granular media filters. Coupled with Tonka's proven media rejection backwash trough, this process maximizes bed cleaning efficiency and media retention. The "Simul-wash™" backwashing process typically achieves a wastewater reduction of up to 50% over conventional water only backwashing.

Controls consist of a GE/Fanuc PLC-based NEMA 4 automatic control panel. This control panel automatically sequences each filter through simultaneous air and water backwash and restratification. Backwash can be initiated manually by the operator or automatically upon loss of head.



## PERFORMANCE

The raw water analysis below reflects moderate iron and manganese levels existing in the well water. Tonka's three vertical pressure filters have been able to achieve high quality drinking water, reducing the iron and manganese to non-detectable levels, as indicated below.

|                   | Raw water | Finished water |
|-------------------|-----------|----------------|
| Iron (as Fe)      | 1 mg/l    | ND             |
| Manganese (as Mn) | 0.3 mg/l  | ND             |

## FEATURES OF THE TONKA SYSTEM

|                   |   |
|-------------------|---|
| PROVEN            | 50 year record of successful installations  |
| SIMUL-WASH™       | Technology maximizes bed cleaning<br>Technology minimizes wastewater, reducing lagoon footprint |
| TROUGH DESIGN     | Maximizes media retention   |
| PLC CONTROL PANEL | Maximizes operator flexibility and ease of operation  |

**FOR ADDITIONAL DETAILS, CONTACT:**  
Tonka Equipment Company



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