

# Project Profile



## Mettawee Community School - Arsenic Treatment West Pawlet, Vermont

### Background

In the summer of 2004, AdEdge Technologies, Inc. was selected by the Mettawee Community School to supply and install an arsenic treatment system for treating water serving the school and facilities. The elementary school site is located on the west side of the state near the New York border. This was the first system utilizing Granular Ferric Oxide (GFO) adsorption technology in the state for a Non-Transient, Non-community (NTNC) public water system. For this project, AdEdge coordinated closely with the Vermont Water Supply Division (WSD) and the school's engineer, Enman Engineering to design and permit the system. AdEdge utilized Water Works, a local water treatment company to assist with installation. For a two-year period prior to installing the new arsenic treatment system, the facility elected not to utilize the water supply due to the arsenic content which is approximately 26 parts per billion (ppb). Before the new treatment system was placed on-line in November, 2004, the school was having bottled water supplied each month to serve the potable water needs. The table shown depicts the water assay for the site. Some of the more important water quality parameters are shown.



Mettawee Community School; West Pawlet, VT

Total As**	0.031	mg/L As
As(III)	< 0.005	mg/L
pH	7.5	mg/L @ CaCO <sub>3</sub>
Hardness**	25	mg/L @ CaCO <sub>3</sub>
Silica**	3.0	mg/L SiO <sub>2</sub>
Phosphate**	0.2	mg/L P <sub>04</sub>
Sulfate**	81.0	mg/L SO <sub>4</sub>
Iron**	0.10	mg/L Fe
Manganese**	< 0.05	mg/L Mn

### System Description

The AdEdge system was installed in an indoor location in the existing pump house a few hundred feet from the supply well. The Adsorption Package Unit or APU-10 designed for up to 10 gpm max flow, is a skid mounted, integrated system that utilizes the Bayoxide E33 granular ferric oxide adsorption media (GFO) as the means for reducing arsenic. The very small footprint system features a twin vessel configuration with top mounted automatic control valves and hydraulic panel with sample ports, pressure gauges, differential pressure gauges, and digital flow meters / totalizers for monitoring performance. The system is configured in a parallel flow arrangement. For disinfection purposes, sodium hypochlorite is injected before the system with a chemical metering diaphragm pump. The AdEdge adsorption system itself requires no chemicals, regeneration, and does not generate liquid or hazardous waste. Media, when spent, is discarded as a non-hazardous solid waste. It is designed for minimal operator attention and maintenance. Visual instrumentation is provided on a stainless steel control panel to measure critical operating parameters. Total gallons and flow rate for each vessel is measured continuously.



APU-10 System

### Performance

Following startup, the system received its operating permit from WSD and began operation in November, 2004. The system has been monitored monthly for arsenic. Average water usage has been 4500 gallons per day with a typical flow rate of 8 gpm. All arsenic results on the treated water obtained through August, 2005 have shown non-detectable levels of arsenic. No downtime has been experienced with the system since it was installed.

### For More Information Contact

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