

# Project Profile

## Troyer Water System – Middlefield, Ohio Arsenic, Iron & Manganese Removal



### Background

In early 2008, AdEdge was selected by EcoWater Servissoft in Burton, Ohio to design, build, and startup an integrated treatment system to remove arsenic, iron, and manganese levels at the Troyer Water System in Middlefield to below the primary and secondary MCLs of 0.010 mg/L, 0.3 mg/L and 0.05 mg/L respectively. AdEdge first piloted a treatment system in spring of 2007 to satisfy OEPA requirements. Showing successful pilot results, AdEdge subsequently designed and implemented an AD26 oxidation and filtration systems for arsenic, iron and manganese removal. The site has two existing groundwater supply wells with arsenic levels ranging from 13 – 32 ppb and high levels of iron and manganese that serve the manufacturing facility and community. AdEdge worked in conjunction with EcoWater throughout the permitting, installation, and start up phase of the work to provide an automated, skid mounted AD26 packaged filtration system. The system included a chlorine module and a PLC controls and panel. Water Quality is shown in the table below.



### Treatment System

The AdEdge treatment system features a skid-mounted AD26 oxidation and filtration package unit sized for a maximum design flow rate of 150 gpm. The model AD26-3660CS-S-3-AVH utilizes AdEdge’s catalytic AD26 MnO<sub>2</sub> media in three carbon steel vessels in parallel configuration. The system is equipped with automated control valves and valve harness, a central control panel with programmable logic controller (PLC), and a Color touch user interface screen. System features also include a central hydraulic panel with differential pressure switches, local gauges, and flow sensors & totalizers for a complete functioning packaged unit. A hypochlorite feed module was included and controlled by the PLC to aid in the oxidation of iron and manganese. Other ancillary equipment that was integrated with the treatment skid and PLC included a finished water backwash supply connection and corresponding valve programming. It is now one of several of AdEdge AD26 systems permitted by OEPA in Ohio.

Priority Parameters		
pH **	7.1 - 7.4	
Total As **	0.013 - 0.032	mg/L As
As(III)	No data	mg/L (if known)
Sulfides**	No data	mg/L
Hardness **	310	mg/L @ CaCO <sub>3</sub>
Alkalinity **	295.0	mg/L @ CaCO <sub>3</sub>
Silica **	15.0	mg/L SiO <sub>2</sub>
Phosphate **	No data	mg/L P <sub>04</sub>
Sulfate **	No data	mg/L SO <sub>4</sub>
Iron **	0.82 - 2.5	mg/L Fe
Manganese **	0.075 - 0.137	mg/L Mn

### Performance

The system was started up and commissioned in June, 2009. The treatment system utilizes half of the well pumps capacity in order to meet the demand of the facility. The manufacturing facility uses 99% of the water produced as process water. Approximately 150 gpm is being consistently treated, removing arsenic, iron and manganese levels to well below the treatment goals of 0.010 mg/L, 0.3 mg/L and 0.05 respectively.

### For More Information Contact

**AdEdge Technologies, Inc.**  
Mr. Greg Gilles, Vice President  
5152 Belle Wood Court, Suite A  
Buford, Georgia 30518  
678-835-0052 \* 678-835-0057 Fax  
[greg@adedgetechnologies.com](mailto:greg@adedgetechnologies.com)  
[www.adedgetechnologies.com](http://www.adedgetechnologies.com)

**EcoWater Servissoft**  
Mr. Denny Hall  
14299 Kinsman Road  
P.O. Box 174  
Burton, Ohio 44021  
440-834-4612  
[Info@EcoWaterServissoft.com](mailto:Info@EcoWaterServissoft.com)