

# Project Profile

## Geneseo Hills EPA Demonstration Project - Arsenic Removal Geneseo, IL



### Background

AdEdge Technologies Inc. (AdEdge) was selected in 2007 by the U.S. EPA and the host site in Round 2a Arsenic Demonstration Program to implement a turnkey arsenic treatment for the Geneseo Hills Community in Geneseo, IL. The Geneseo Hills water system is served by one well with a design flow of 200 gpm, with a backup well. The well provides potable water for a community with 190 connections and a population of approximately 480 residents. The treatment system receives water on the demand side of the storage tanks with an arsenic level of **25 ppb**, above the EPA MCL of 10 ppb. From the combined 21,000 gallon twin pressurized storage tanks, water is treated by AdEdge system which is configured in parallel. AdEdge was contracted by U.S. EPA to provide and manage all permitting with IEPA, design, fabrication, installation, and startup activities. The system was AdEdge's 11<sup>th</sup> full scale EPA demonstration project.



### Treatment System

AdEdge proposed and installed an APU-5460CS-S-2-AVH treatment system designed to reduce arsenic concentrations to below the new arsenic treatment standard of 10 ppb. The system utilizes adsorption technology deploying AdEdge's Bayoxide E33 granular ferric oxide media. The design also includes a 100% backwash recycle system capable of filtering particulates and reclaiming all of the periodic backwash water for treatment and use. The packaged system features twin 54-inch diameter carbon steel adsorption vessels mounted on a painted epoxy coated carbon steel skid, pre-piped and integrated. The system is placed after a pre-chlorination module for oxidation of As (III) to As (V), and is equipped with automated control valves and harness, central control panel with programmable logic controller (PLC) and a color user interface screen. The System also features a hydraulic panel with local gauges and sample ports for a complete functioning packaged unit.



Backwash recycle pump skid



Backwash Filter, Tank

### Performance

Since full time operation began in April, 2008, the system has effectively reduced arsenic consistently below 2 ppb, well below the MCL. Approximately 30,000 gallons per day is being processed through the system on average. The site's operator performs the routine sample collection and reporting associated with the U.S. EPA's Demonstration Program requirements with quarterly reporting of the data by U.S. EPA's contractor Battelle. A 6-month EPA summary report will be produced and available in the near future.

Priority Parameters		
pH **	7.10	
Total As **	0.025	mg/L As (average)
As(III)	0.018	mg/L (if known)
Sulfides**		mg/L
Hardness **	341	mg/L @ CaCO3
Alkalinity **	407.0	mg/L @ CaCO3
Silica **	20.0	mg/L SiO2
Phosphate **	0.1	mg/L P04
Sulfate **	<1	mg/L SO4
Iron **	0.25	mg/L Fe
Manganese **	0.02	mg/L Mn

### For More Information Contact

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