

Project Profile

*Green Ridge MDWCA
Tijeras, New Mexico*



Background

In 2005 AdEdge Technologies Inc. (AdEdge) was selected to implement an arsenic treatment project for the Green Ridge Community Water System located in Tijeras, New Mexico. The Green Ridge system had been without potable water for three years. Local residents each hauled from 100 to 300 gallons per week to meet their water needs. The groundwater resource in Tijeras was determined to contain high arsenic concentrations above the proposed maximum contaminant level (MCL). As shown in the attached table, the arsenic concentration was 95 parts per billion (ppb) and the pH was 8.6. Souder Miller & Assoc. (SMA) chose Pumps & Service and AdEdge to execute the turnkey project. AdEdge worked closely with the SMA to provide submittals and plans for permitting and operating the 20 gallon per minute (gpm) treatment system for arsenic. A summary of the Green Ridge water quality is shown in the table below that served as the basis for design. The system was fabricated and installed in June, 2005. The treatment system is described in the following paragraph.



Treatment System

The AdEdge arsenic treatment system consists of a skid-mounted Adsorption Package Unit (APU) unit (Model APU-20LL) rated for 20 gpm. Arsenic treatment occurs in a series (i.e., lead/lag reversible) configuration. Groundwater is pumped from the water-supply well through a pre-filter, through the APU and into a 53,000-gallon storage tank. From the storage tank, groundwater flows through booster pumps, a hydropneumatic tank, and into the distribution system. The 24-inch diameter APU vessels each contain approximately 8 cubic feet of Bayoxide E33® adsorption media. Bayoxide E33® is a granular ferric oxide (GFO) media that has been commercially use since 1999. AdEdge has deployed GFO media in over 100 public water and commercial systems in the U.S. and in over 2,500 residential applications since 2002.

Total As **	0.095	mg/L As
As(III)		mg/L
pH	8.60	mg/L @ CaCO3
Hardness **	25	mg/L @ CaCO3
Silica **	8.0	mg/L SiO2
Phosphate **		mg/L P04
Sulfate	64.0	mg/L SO4
Iron **	0.12	mg/L Fe
Manganese **		mg/L Mn

The skid-mounted pre-engineered APU system is equipped with automatic controls, backwashing features, switches, gauges, and sample ports for complete functioning packaged unit. Instrumentation is provided on a control panel to measure critical operating parameters. Total gallon throughput and flow rate for each unit is measured continuously with dedicated flow totalizing meters. The AdEdge adsorption system does not require any chemicals or regeneration, and the process does not generate liquid or hazardous waste.

Performance

The system was started up and placed into operation in June 2005 and has been operating very successfully treating arsenic well below the standard of 10 ppb. System oversight is provided by the site's certified water treatment operator. The project also received *American Public Works Association (APWA) Project of the Year* award in New Mexico. A special open-house event and ribbon cutting ceremony to celebrate this new treatment milestone with Senator Pete Domenici, was held in August 2005 with the community, local leaders, and the press.

For More Information Contact

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