

Project Profile



Arsenic Treatment Project Pueblo of Isleta, New Mexico

Background

In August, 2004, following successful field piloting, AdEdge Technologies, Inc. (AdEdge) was selected by the Pueblo of Isleta, located south of Albuquerque, New Mexico, to provide a turnkey project for furnishing an arsenic treatment system, installation, startup, and commissioning to bring the casino water system into compliance with the new maximum contaminant level (MCL) for arsenic. The Isleta Pueblo Casino and Resort provides approximately 150,000 gallons per day (gpd) at a rate of about 300 gallons per minute (gpm). The treatment system was installed to reduce naturally occurring arsenic at a concentration of 23 parts per billion (ppb). The Isleta Pueblo evaluated several arsenic treatment technologies and chose AdEdge Technologies Inc. (AdEdge) to complete this project based on low capital and operating costs, operational simplicity, and experience in New Mexico with several other successful installations.



As part of the proposal process, AdEdge obtained certain site-specific design and water-quality data to form the design basis. The table at the right lists some of the more important baseline water-quality parameters. A new building was constructed as part of the project. Fabrication of the modular APU-300 system commenced in parallel with the building and site preparation tasks which included piping tie-ins, acid pH adjustment system (given the 8.6 ambient pH), and other ancillary equipment. Upon completing all mechanical and electrical installation tasks, the system was started up and began processing water in January, 2005. A second identical arsenic system is planned to accommodate the growing needs of the facility. This system was one of the largest to date of AdEdge's multiple installations in the southwest U.S. for public drinking water systems utilizing the granular ferric oxide technology.

Total As **	0.023	mg/L As
As(III)	< 0.05	mg/L
Alkalinity	106	mg/L @ CaCO ₃
Hardness **	57	mg/L @ CaCO ₃
Silica **	50.0	mg/L SiO ₂
Phosphate **	< 0.10	mg/L P ₀₄
Sulfate **	32.4	mg/L SO ₄
Iron **	0.24	mg/L Fe
Manganese **	0.01	mg/L Mn

System Description

The treatment system consisted of a dual vessel APU-300 adsorption package unit. The system utilizes Bayoxide E33 granular ferric oxide (GFO) adsorption media. The small footprint system features a parallel flow configuration with automatic controls, programmable logic controller (PLC), and an acid pH adjustment system. Chlorine (sodium hypochlorite) is currently injected prior to the adsorption system for disinfection purposes. The AdEdge adsorption system requires no regeneration, and does not generate liquid or hazardous waste. Media, when exhausted, will be beneficially recycled eliminating any land disposal of spent media. Minimal operation, maintenance, or operator attention is required for this simple automated system. Instrumentation is provided on a control panel to measure critical operating parameters. Total gallon throughput and flow rate for each vessel is measured continuously with a dedicated flow totalizing meter. Startup was completed in January 2005. All samples taken to date of the treated water indicate arsenic was being reduced to levels well below the new standard of 10 ppb.



For More Information Contact

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