Project Profile

City of Wellman, Texas
Arsenic Treatment System

Background

The City of Wellman, Texas (Wellman) applied to the U.S. Environmental Protection Agency (USEPA) to participate in the arsenic treatment demonstration program for Round 2 and was selected. Wellman has five water-supply wells which pump water to a 110,000 gallon storage tank. Water-quality analyses revealed that arsenic concentrations exceeded the new maximum contaminant level (MCL). AdEdge Technologies Inc. (AdEdge) contacted the city and presented a proposal for arsenic treatment using granular ferric oxide (GFO) technology. AdEdge was subsequently selected and awarded the project (i.e., one of nine USEPA demonstration sites awarded to AdEdge). AdEdge worked with Oller Engineering Inc. (OEI), the water system's engineer, in preparing permitting submittals and working toward Texas Commission on Environmental Quality (TCEQ) regulatory approvals for construction and installation of the system and associated appurtenances. AdEdge and OEI submitted an exception request for the arsenic treatment system, which has been approved.

Treatment System

Total As **	0.045	mg/L As
pH	8.000	
Vanadium	0.145	mg/L
Hardness **	406	mg/L @ CaCO3
Silica **	46.0	mg/L SiO2
Phosphate **	< 0.06	mg/L P04
Sulfate	240.0	mg/L SO4
Iron **	0.004	mg/L Fe
Manganese **	0.01	mg/L Mn

The AdEdge arsenic treatment system consists a skid-mounted adsorption package unit (APU) sized to accommodate a maximum design flow rate of 100 gpm. The model APU-100CS utilizes a twin vessel carbon steel vessel configuration for arsenic removal in parallel configuration. The system is equipped with automated control valves and harness, central control panel with programmable logic controller (PLC) and a color user interface screen. System features also include differential pressure switches, control panel and local gauges, flow sensors & totalizers, and a central hydraulic panel with sample ports for a complete functioning packaged unit. Groundwater is pumped from the five wells through the treatment system. The 48-inch diameter APU vessels each contain approximately 30 cubic feet of Bayoxide E33® adsorption media.

Performance

Bayoxide E33® adsorption media has been in commercial use since 1999 serving nearly two million customers and has been installed in over 60 public water installations in the U.S., Canada, and Mexico since 2002. AdEdge's packaged solutions utilizing GFO media include small community water systems, schools, mobile home parks, and extensive use in over 1,500 private residential applications. The 100-gpm Wellman system was installed in early 2006 and will begin full-scale operations treating approximately 26,000 gallons per day. The treatment plant building has been constructed, equipment has been installed, and the piping and electrical work has been completed. Startup and commissioning should occur in a short time period.

For More Information Contact

AdEdge Technologies, Inc.
Mr. Steven Shugart, P.G., Principal
5152 Belle Wood Court, Suite A
Buford, Georgia 30518
(678) 835-0052 (678) 835-0057 Fax
info@adedgetechnologies.com
www.adedgetechnologies.com

Oller Engineering Inc.
Mr. Rich Oller, P.E., President
2517 74th Street
Lubbock, Texas 79423
(806) 748-5700
richm@oeihq.com

City of Wellman
Mr. Marvin Crutcher
System Operator, City Hall
Wellman, Texas 79378
(806) 637-4063