

Project Profile

Ohio Willow Wood Mount Sterling, Ohio 30 GPM Arsenic, Iron & Manganese System



Background

In the winter of 2006 AdEdge Technologies, Inc. was pre-selected to as the treatment vendor to provide a system for arsenic, iron and manganese removal at the Ohio Willow Wood Facility in Mount Sterling, Ohio. To satisfy OEPA requirements, a pilot was installed to verify the effectiveness of the AD26 oxidation / filtration technology to reduce the target contaminants to below their respective MCLs. The pilot results concluded the success of the removal of the target contaminants and the project proceeded to design and implementation with the site's engineer, Burgess and Niple. Approval was received by OEPA and a full scale system was installed at the Ohio Willow Wood Co. facility in March of 2008. The site consists of a single well that serves potable water to the manufacturing plant that employs up to 150 people. Due to the high levels of iron (1.8 mg/L) in the raw water an AdEdge AD26 oxidation / filtration system was selected as the best overall approach to simultaneously remove the arsenic, iron and manganese from the water supply. The packaged AD26 system utilizes an NSF 61 Certified manganese dioxide media (AD26) that is excellent for co-contaminant removal. The technology was selected based on its ability to remove the target contaminants, the overall cost, and the small footprint it allowed. The raw water quality of the well is shown in the table to the right.



Treatment System

The AdEdge AD26 skid mounted arsenic treatment train consists of a completely integrated packaged treatment system with four vessels plumbed in a parallel configuration to treat up to 30 gallons per minute (gpm). With a design filtration rate of 9.5 gpm/sq foot the treatment system offers a high removal efficiency, smaller vessels and lower cost. The AD26 automated system is equipped with PLC controlled top mounted control valves with a control panel that is integrated with the pre-chlorination module. The system was pre-engineered, pre-piped, and skid mounted to fit in the existing building space and for ease of installation and operation. A backwash auxiliary connection on the skid allows for treated water backwash in order to ensure that the oxidized iron and manganese is consistently removed from the media bed during a backwash event. The AD26 technology has been deployed successfully by AdEdge on many multi-contaminant sites to date, and as also on 3 full scale EPA Arsenic Demonstration Projects.

Priority Parameters	
pH **	8.20
Total As **	0.017 mg/L As
As(III)	0.002 mg/L (if known)
Sulfides**	mg/L
Hardness **	445 mg/L @ CaCO3
Alkalinity **	240.0 mg/L @ CaCO3
Silica **	20.1 mg/L SiO2
Phosphate **	0.0 mg/L P04
Sulfate **	72.3 mg/L SO4
Iron **	1.80 mg/L Fe
Manganese **	<0.1 mg/L Mn

Performance

Installation was completed and the system was officially started up in March 2008. Since operations began, the system has consistently removed arsenic, iron and manganese to well below EPA MCLs. Monitoring and periodic sampling of the system is performed by the site's certified operator in accordance with the permit.

For More Information Contact

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