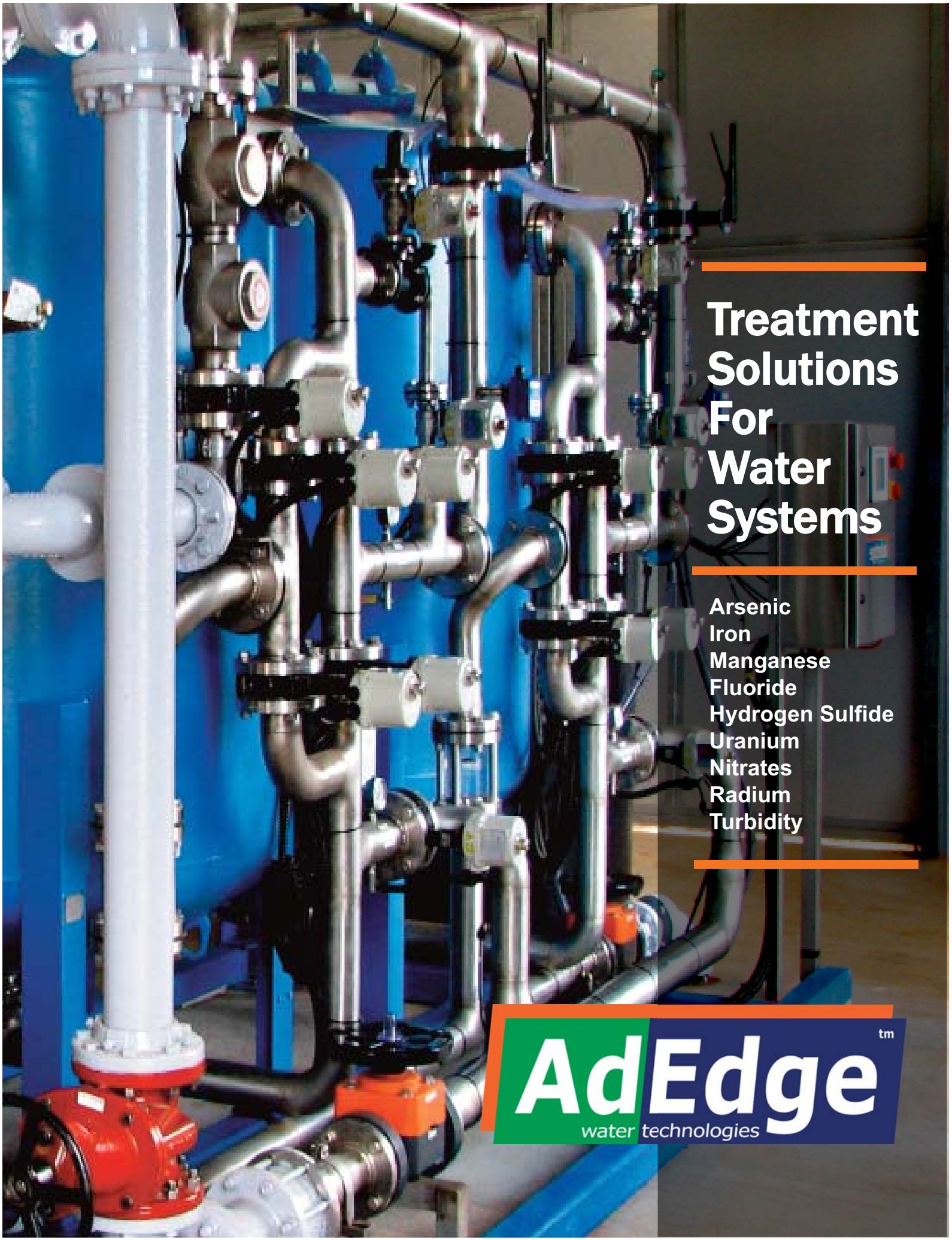


Treatment Solutions For Water Systems

- Arsenic
- Iron
- Manganese
- Fluoride
- Hydrogen Sulfide
- Uranium
- Nitrates
- Radium
- Turbidity

AdEdge™ water technologies

intelligent thinking...clean water

"We are an organization based on solid, deliverable, scalable, scientifically proven technology and experience for the removal of arsenic, iron, manganese and other contaminants from water."

-Rich Cavagnaro, President

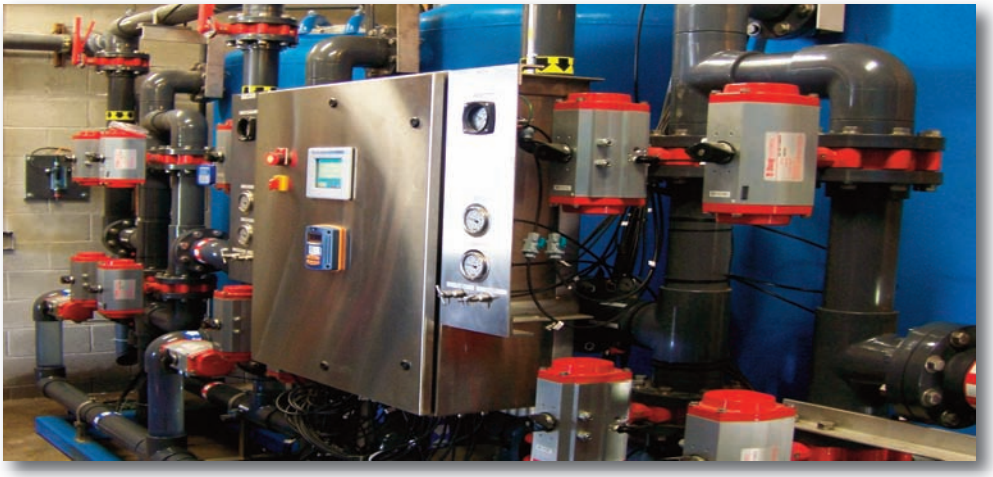
Founded in 2002 and headquartered just north of Atlanta, Georgia, USA, AdEdge Water Technologies, LLC. specializes in the development and supply of innovative technologies, adsorbent-based products, and systems that remove contaminants from process or aqueous steams. We are an organization based on solid deliverable, scalable, scientifically proven technology and experience for the removal of arsenic, iron, manganese and other contaminants from water. Our technology and products enable our customers to manage the elements...in a variety of industries... with outstanding results. They include: Drinking water, industrial process, environmental, chemical, energy, medical, and general wastewater industries.

AdEdge has extensive experience in the removal of arsenic, iron, manganese, fluoride and uranium from water, and to date has installed hundreds of water systems for public, municipal, and industrial clients throughout North America as well as some projects in some of the most challenging locations in the world including China, Indonesia, and Argentina.

Arsenic removal from drinking water is one of the company's core competencies and distinguishing competitive advantages. To date, AdEdge has been awarded 12 EPA demonstration projects...more than any other company in North America. We have also successfully implemented systems that serve larger communities, providing a low cost, low maintenance solution providing long term ROI with assured safe drinking water and no hazardous or environmental waste residuals.

Integrated Treatment Solutions For Water Systems.

AdEdge specializes in the design, development, manufacturing and supply of innovative technologies, adsorbent-based products, and integrated solutions that remove contaminants from process or aqueous steams. AdEdge offers a full range of conventional and innovative treatment technologies including adsorption, coagulation/filtration, ion exchange, metals precipitation, advanced oxidation, and membrane based solutions.



Primary Contaminants Treated:

Arsenic
Iron & Manganese
Fluoride
Uranium
Hydrogen Sulfide
Nitrates
Radium
Turbidity

Industry Applications:

Groundwater Treatment
Remediation
Wastewater Treatment
Mining
Residential Homes

Treatment Solutions

Integrated Systems

With our integrated system approach AdEdge can integrate a custom treatment solution to meet your needs. Using our APU (AdEdge Packaged Unit), Modular, and/or Membrane systems, we integrate pre and post treatment processes to provide a “one stop shop” approach for managing your total treatment need.

APU Systems

AdEdge APU (AdEdge Package Unit) systems are designed, packaged and assembled as a turnkey treatment solution for a variety of contaminants. APU systems arrive at your site ready for hook up and operation. With a variety of custom options available, AdEdge APU systems are custom engineered to meet the specific needs of your site.

Modular Systems

AdEdge Modular Systems provide a treatment solution for small water systems that are simple, affordable, and effective. These systems are designed, pre-packaged and shipped unassembled to the field for installation by a qualified contractor or installer. AdEdge Modular systems generally require less engineering, space, and infrastructure.

WaterPOD™ containerized systems are fully integrated, pre-engineered, pre-wired, packaged water treatment solution that combines system performance with economy resulting in an ideal solution for sites where space, cost, and schedule are critical.

Media Replacement Services

Regardless of your system, AdEdge offers turnkey media replacement services for our systems and others that use media we provide. Let us take the hassle out of media replacement. Contact us today for quote on your media replacement needs.

AdEdge Fact:

Our engineers are highly trained to design the best! solution to your water treatment needs.

Backwash/Recycle Systems

H_2Zero Backwash/Recycle systems conserve water by storing and treating contaminated backwash water from filtration and treatment systems. AdEdge H_2Zero systems can be customized and designed for most manufacturers' adsorption, oxidation/filtration and coagulation/filtration systems, whether backwashing is infrequent or performed one or more times per week.

Chemical Pre/Post Treatment Systems

With certain water parameters, an essential aspect of effective treatment is adequate pretreatment of the raw water before reaching the primary treatment system and/or post treatment for applications such as potable water. Pretreatment can be a simple mechanical filtration for suspended solids, coagulation or dispersant chemical addition, chlorine or other oxidation chemical addition or removal, and/or removal of organics or other contaminants. With posttreatment, the treated effluent may require pH correction or disinfection prior to the distribution.

Programable Logic Control Systems

AdEdge INGenius™ MCD control panels are skid mounted NEMA 4X stainless steel panel enclosures featuring Allen Bradley PLC controls. It features a Integrated PanelView 600 HMI Color touch screen (optional 10-inch) with operator graphics screens for: System overview, automatic / manual operation of filter control valves, backwash initiation and control, backwash recycle tank and pump settings and control plus flow measurement & totalization. Alarm outputs are included as well.

Residential Systems

The AdVantEdge Series from AdEdge includes Point-of-Entry and Point-of-Use systems and replacement cartridges. AdVantEdge systems for arsenic removal feature Granular Ferric Oxide media that is NSF 61 certified and effective over a wide range of water quality without the need for regeneration chemicals, salt or additives.

AdEdge Fact:

100% of our customers rate our performance as good to excellent!

Treatment Processes

Adsorption

In the adsorption process, contaminants in the aqueous stream break their bond with water molecules and chemically adhere to a filter media. In most systems, this is accomplished by directing the water flow through pressure vessels containing the filter media at a rate that allows enough contact time for the adsorption to occur. Several medias have been developed to reduce a variety of contaminants such as arsenic and other heavy metals, fluoride, and dissolved organic chemicals like pesticides or petroleum products.

Ion Exchange

Ion exchange (IX) is a method of removing undesirable metallic salt ions dissolved in an aqueous stream by exchanging them with other ions attached to a media, such as a synthetic resin. AdEdge Water Technologies has systems for uranium reduction using AD92 IX resin. This resin has a very high capacity for uranium removal and is not as susceptible to organic fouling as other resins. It is easily and effectively regenerated with sodium chloride on site which provides a cost-effective way to extend the effective life of the media, reducing operating costs.

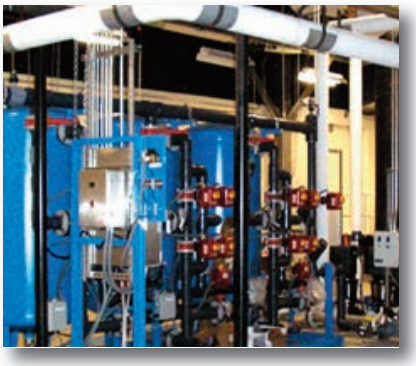
Coagulation/Filtration

AdEdge Water Technologies uses coagulation filtration to remove arsenic, iron, manganese, and sulfides with ADGS+ media and ferric chloride as the coagulation agent. This process allows significantly higher flow rates per square feet of media, less backwash water than other conventional approaches, and smaller footprint systems which means lower capital and operating costs. There are no hazardous chemicals or waste involved and the systems may be automated which decreases operator involvement and expense.

AdEdge Fact: AdEdge has been awarded 12 EPA arsenic removal demonstration projects...more than any other company.

Oxidation Filtration

Oxidation/filtration refers to precipitative processes that are designed to remove naturally occurring iron, manganese, and sulfides from water. The processes involve the oxidation of the soluble forms of these contaminants to their insoluble forms and then removal by filtration of the precipitated particles.The AdEdge oxidation/ filtration media has high catalytic and oxidation activity, superior handling properties and stability, NSF 61 certification, requires no permanganate or coagulation addition and low capital and operating costs compared to other alternatives due to the smaller system footprints.



Membrane Systems

Designed for tap, well, or surface water applications, AdEdge Reverse Osmosis Systems and Ultrafiltration systems reduce total dissolved solids using advanced membrane technology. Because almost all membrane systems require pre-treatment for contaminants such as iron, manganese, suspended solids or organics, AdEdge offers a complete Integrated Membrane Solutions (IMS) system for a total treatment solution.

General Filtration

Filtration is a physical method of removing suspended solids from a solution. In water treatment applications, these solids may range from dirt, plant material, and debris washed into the water supply during heavy run-off to bacteria, viruses, and other microscopic particles that occur naturally.The removal of the larger-sized solids, down to approximately 10-20 microns, can be done in gravity beds or pressure vessels containing media such as sand, zeolite, anthracite, or multiple layers of these media.

AdEdge Fact: Our project management team consists of noted and published experts in the water treatment industry.

Experience / Case Studies

U.S. EPA Projects

AdEdge Water Technologies, LLC. was selected by USEPA for 12 arsenic treatment demonstration projects through an expert peer review process in cooperation with the individual host sites to conduct full scale arsenic treatment demonstrations using its Granular Ferrric Oxide adsorption and AD26 oxidation/filtration technologies. The program gathers extensive cost and performance data on commercially available, proven technologies which are candidates to become Best Available Technology (BAT) for arsenic removal.

- Rimrock, Arizona APU-40LL system
- Rollinsford, New Hampshire APU-160 system
- Nambe Pueblo, New Mexico APU-160 system
- Goffstown, New Hampshire APU-20LL system
- Springfield, Ohio APU-250CS / AD26-250CS systems
- Stewart, Minnesota APU-300 / Iron treatment systems
- Bruni, Texas APU-50LL system
- Wellman, Texas APU-100 system
- Sells, Arizona APU-100 system
- Geneseo Hills, Illinois APU-200 system
- Clinton School, Indiana APU-25 / AD26 system
- Conneaut Lake Park, PA AD26-250 system

Arsenic Removal - Rimock, AZ

Indian Health Service Projects

Working closely with Indian Health Services officials, Tribal representatives and contracted engineering firms, AdEdge Water Technologies has installed treatment systems in many Native American locations throughout the west and midwest. From permitting to start-up and post evaluation, AdEdge is committed to providing the most effective treatment solutions available today backed by unprecedented customer service. AdEdge has more than 14 system installations on Native American locations.

Uranium Removal - Barona, CA

AdEdge Fact:

Our principal business philosophy is exemplary customer service.

Project Profile

McGraw Hill, East Windsor, NJ
130 gpm Oxidation/Filtration System
Iron & Manganese Removal System

Background

In late 2007, AdEdge began working with Maser & Associates to assist with design and implementation of an iron and manganese removal system to serve the water supply for the McGraw Hill data center in East Windsor, New Jersey. The site had an existing groundwater supply well with unacceptably high levels of iron and manganese to serve as feed water for the facilities cooling towers. The water chemistry presented some challenges with a pH of 5 and iron levels of nearly 5 mg/L. AdEdge was selected to design, build, and startup an integrated treatment system to remove the iron and manganese to meet secondary MCLs of 0.3 mg/L and 0.05 mg/L respectively. AdEdge worked closely with the selected contractor Central Jersey Mechanical to supply the treatment system which included chemical feed (chorine and pH correction), an AdEdge AD26 packaged iron and manganese removal filtration system, treated water backwash pump skid, finished water supply booster pump package, and instrumentation. AdEdge also furnished the system with a PLC communications module to interface and allow for continuous monitoring via the data center's existing SCADA system. The system was constructed and deployed in the summer of 2008.

Priority Parameters		
pH **	4.4-4.9	
Total As **	n/a	mg/L As
As(III)	n/a	mg/L (if known)
Sulfides**	ND	mg/L
Hardness **	33.0	mg/L as CaCO3
Alkalinity **	10.0	mg/L @ CaCO3
Silica **	no data	mg/L SiO2
Calcium **	4.0	mg/L Ca
Sulfate **	10.0	mg/L SO4
Iron **	5.00	mg/L Fe
Manganese **	0.11	mg/L Mn

Treatment System

The AdEdge treatment system featured a skid-mounted AD26 oxidation and filtration package unit sized for a maximum design flow rate of 130 gpm. The model AD26-3660CS-S-3-AVH utilizes AdEdge AD26 MnO2 media in a three vessel carbon steel configuration in parallel. 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. A hypochlorite feed & monitoring Module and pH adjustment module using sodium hydroxide (NaOH) are also integrated into the system package. Each 36-inch diameter treatment vessel contains approximately 20 cubic feet of AdEdge AD26 oxidation filtration media. Other ancillary equipment which was totally integrated with the treatment module included the auxiliary finished water backwash supply, distribution booster pumps, the two 5,000 gallon finished water holding tanks and instrumentation. All of these components were integrated into the design and controlled by a single master

Performance

The system was started up and commenced in July, 2008. The system has a very high utilization factor receiving water nearly 22 hours per day to meet the demand of the cooling towers. Approximately 100-110 gpm is being consistently treated with high iron and manganese levels exceeding 4 mg/L and 0.1 mg/L to below the treatment goals of 0.3 mg/L and 0.05 respectively. The system has experienced little to no down time since installation.

AdEdge Fact: Over 70% of our new business comes from referrals.

The values that drive our company!

Passion for Clean Water

We have a drive to apply and deliver water purification technologies to improve the quality of people's lives, enhance the environment, and grow economies throughout the world. We seek to steward the knowledge, resources, and blessings we've received to serve others and our community.

Integrity… Any Time…Any Place

We strive to conduct ourselves with honesty and integrity, exercising fair business practices in all dealings with our customers, vendors, suppliers, subcontractors, employees, and all those we work with. We strive to honor God, be truthful, and respectful of each other, and consider the customer's needs above our own interests.

Exemplary Service

Our sincere goal is to go to extraordinary lengths to satisfy our customers and meet or exceed their expectations in our dealings and relationships. By providing exemplary customer service, we have the opportunity to satisfy the needs of our partners and build long-term relationships. We will be responsive to our customer's requests, serve them competently, efficiently, and knowledgeably.

Excellence

It is our goal to bring passion and excellence to our work by creating unique and sustained value at competitive prices for the customers and markets we serve; not settling for mediocrity, but striving for continuous improvement and higher quality in our products, processes, and customer relationships. We challenge ourselves to constantly improve the value proposition to our customers.

Enjoyment of Work

We believe work was designed and intended to be the source of professional fulfillment for employees and should be enjoyable. We endeavor to create an environment for employees to seek and obtain challenging work and professional growth; a place where employees demonstrate mutual respect, courtesy and concern for each other and employees are encouraged and permitted to afford time and attention to their families and other personal priorities.

when it comes to customer service... ...we're as reactive as our media!

At AdEdge, we feel our most important attribute is our dedication to customer service because making successful water treatment systems takes more than just intelligent engineering, innovative technology, and high performance media. For our customers, it means delivering these essentials plus an exceptional level of customer service...it's the catalyst few companies possess that truly makes the difference between a completed project and a successful project.

"I'm very pleased with the Fe/Mn filtration plant AdEdge installed at AFP Mutual (Alpine Forest, CA). I not only help monitor this system - I am one of the owners of this system! The fact that the treatment plant happens to be on the lot next to my office and home gives me the opportunity to see the amount of actual staff time that is spent "servicing" the plant. And we have four (4) wells and over 250 connections! You probably already know there's not much time spent servicing the plant!"

Steve White - Alpine Forest, CA

"The success of the AdEdge system at Geneseo Hills has allowed other communities in the area to benefit from having a simple to use, cost-effective arsenic removal system. The system we choose was the right one"

Merle Loete, Operator - Geneseo Hills

"Since the installation of our system, the water is PERFECT. It actually sparkles!!! No more smell, no yellow spots on the white clothes, no more oily film on top of the water, no daily cleaning of the toilets. We have had 2 arsenic tests done and both times the level was less than 0.002mg/L."

Tom and Diane Eaton - Claredon Water Company.

AdEdge™ water technologies

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