Advanced Systems for Groundwater Treatment

Engineered solutions for complex groundwater treatment challenges.

For more than four decades, ATEC Water Systems has partnered with utilities and engineering firms to design and deliver reliable groundwater treatment infrastructure across North America.

ATEC systems utilize high-rate pressurized filtration and modular treatment architecture to address complex groundwater contaminants efficiently and cost-effectively.

500+	40+ Years	10 GPM – 100+ MGD
Systems Installed	Groundwater Experience	System Capacity

ATEC Engineering Approach

ATEC systems are designed specifically for groundwater treatment using high-rate pressurized filtration and modular treatment architecture. Each installation is engineered for the specific chemistry of the source water while minimizing capital cost, footprint, and operational complexity.

Our engineering team works directly with utilities and consulting engineers to evaluate water quality conditions, conduct pilot testing, and develop treatment systems optimized for long-term performance.

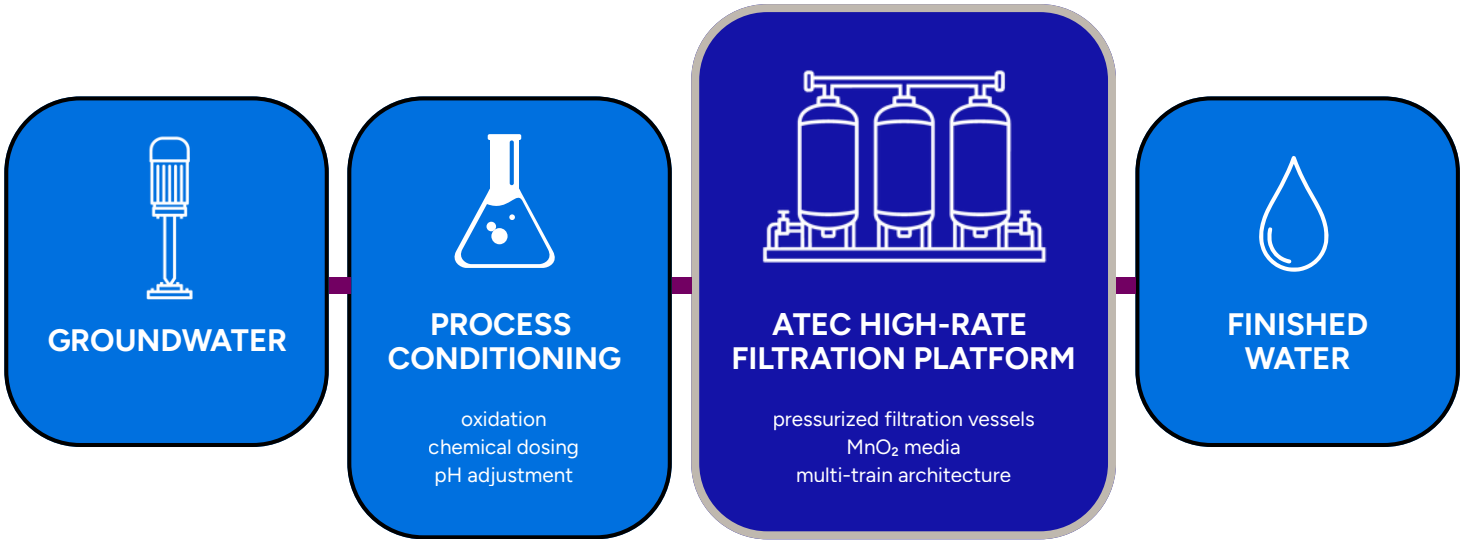
Core Treatment Capabilities

- High-rate manganese dioxide filtration
- Reduction-coagulation-filtration (RCF)
- Adsorption and ion exchange treatment
- Biological ammonia removal
- Modular multi-train architecture

The ATEC Groundwater Treatment Platform

Groundwater chemistry varies widely depending on aquifer conditions, geology, and contaminant sources. For this reason, ATEC systems are built around a modular treatment architecture that allows multiple treatment processes to be integrated into a single treatment platform.

Rather than relying on a fixed treatment process, ATEC systems are engineered based on water quality conditions and pilot testing to ensure the most effective combination of treatment technologies for each site.



Typical Treatment Architecture – configuration varies by application.

Integrated Treatment Processes

ATEC systems can incorporate a variety of treatment processes depending on the specific contaminants present in the groundwater source.

Examples include:

- reduction-coagulation-filtration (RCF) for chromium removal
- adsorption systems for arsenic treatment
- ion exchange systems for nitrate and PFAS removal
- biological filtration for ammonia treatment
- aeration and degassing processes

These processes can be integrated into the filtration platform to address multiple contaminants simultaneously.

Engineering Advantages

ATEC's modular system architecture offers several advantages for groundwater treatment projects.

- adaptable to site-specific water chemistry
- compact footprint compared with conventional treatment plants
- scalable system capacity through multi-train design
- simplified installation with packaged treatment systems
- flexible expansion as treatment requirements evolve

Treatment Solutions for Complex Groundwater Contaminants

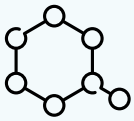
Groundwater systems frequently contain multiple contaminants that require coordinated treatment strategies. ATEC systems are engineered to address a broad range of groundwater challenges using modular filtration and integrated treatment processes.

Each system is designed around site-specific water chemistry and can address both regulated health contaminants and secondary water quality concerns commonly found in groundwater sources.

Health / Regulated Contaminants

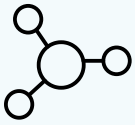
Arsenic

A naturally occurring contaminant regulated under the Safe Drinking Water Act. ATEC systems incorporate adsorption and oxidation processes designed to achieve reliable arsenic removal in groundwater supplies.



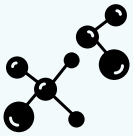
Hexavalent Chromium (Cr(VI))

ATEC developed a reduction-coagulation-filtration (RCF) process designed to efficiently remove hexavalent chromium while integrating with iron and manganese treatment systems.



Nitrate / Ammonia

Common in agricultural regions, nitrate contamination requires targeted treatment approaches. ATEC systems can incorporate ion exchange or biological treatment processes depending on source water chemistry.



PFAS

Per- and polyfluoroalkyl substances are now regulated contaminants in drinking water. ATEC systems integrate adsorption and ion exchange technologies to address PFAS removal in groundwater systems.

Boron

Boron occurs naturally in many groundwater basins and can affect both drinking water quality and irrigation suitability. ATEC systems can incorporate selective adsorption or ion exchange processes depending on site-specific conditions.

Secondary Water Quality Contaminants

Fe

Iron

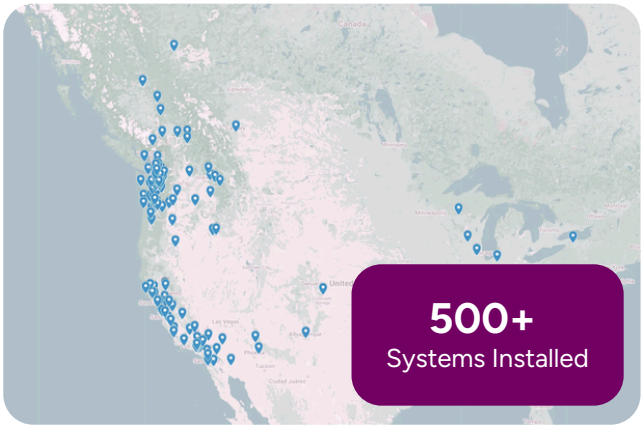
Iron is widely present in groundwater and can cause staining, taste issues, and operational challenges. ATEC filtration systems utilize manganese dioxide media for efficient iron removal.

Mn

Manganese

Often found alongside iron, manganese can create discoloration and distribution system challenges. ATEC systems are designed for reliable manganese oxidation and filtration.

ATEC groundwater treatment systems are installed in communities across North America, supporting municipal water utilities, regional water agencies, and industrial water users.



Decades of Groundwater Treatment Experience

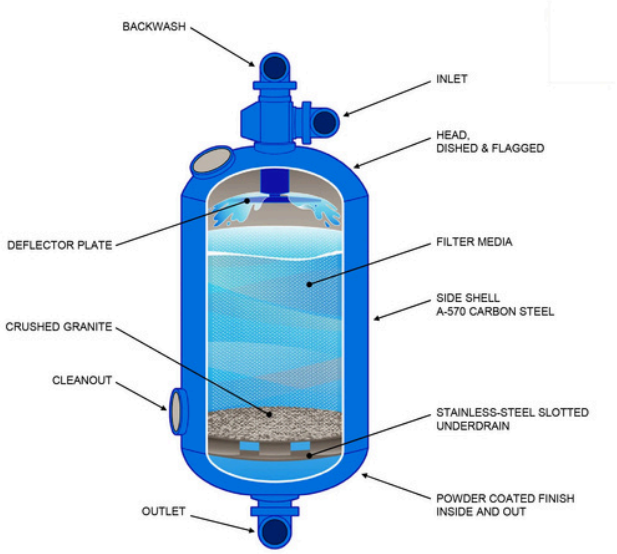
Operating since 1982, ATEC has delivered groundwater treatment systems for municipal and industrial water suppliers across North America. The company originally pioneered high-rate filtration technology for iron and manganese removal and has since expanded its treatment platform to address contaminants.

ATEC engineers work closely with utilities and consulting firms to evaluate water chemistry, conduct pilot testing, and develop treatment systems optimized for long-term performance.

Cost-Effective and Scalable In-House Manufacturing

ATEC systems are manufactured at the company's 20,000 sq ft facility in Hollister, California. Modular vessel design allows systems to be scaled across a wide range of capacities while minimizing plant footprint and infrastructure requirements.

Systems are delivered fully packaged and pre-assembled, reducing installation complexity and construction time. Remote monitoring capabilities allow operators to track system performance and maintain reliable long-term operation.



We design water treatment systems that blend innovation with real-world practicality. Every solution is value-engineered for reliability, efficiency, and long-term performance. Starting with pilot testing, we partner with our customers to refine each system for optimal results.

ATEC
A Cadiz Solution

For more information visit ATECwater.com or email us at info@ATECwater.com