



**Sustainable Technologies,
Solutions & Services**
for the Chemical Processing Industry

WATER TECHNOLOGIES

Understanding Water Challenges Facing Chemical Processing Companies

The demands made on chemical processing companies are numerous. Veolia Water Technologies understands these challenges and has experience in helping organizations achieve their goals in:

- > Operational Efficiency
- > Product Quality / Yield
- > Risk Mitigation
- > Water Reuse & Conservation
- > Increased Resource Recovery
- > Regulatory Compliance
- > Sustainability Initiatives

A Creative and Trusted Solutions Provider

Veolia Water Technologies is the trusted leader in water treatment and has successfully executed thousands of projects worldwide.

Veolia provides its clients an integrated approach to water management using innovative technologies, equipment, chemistry, and services. Our customer-focused culture combined with comprehensive water management capabilities make Veolia a preferred partner for every aspect of the water cycle at your facility.

Water Capabilities

Veolia is experienced in the design and implementation of standard and customized water treatment technologies for the chemical processing industry

Water Treatment

- Plant Water Supply (Clarification, Filtration, Softening)
- Boiler Feed Water, Cooling Water (Filtration, Softening, Deionization, Chemical Treatment)

Wastewater Treatment

- Biological / Chemical Treatment
- Biological Processes, Primary, Secondary, & Tertiary Treatment
- Residuals (Sludge) Treatment, Handling & Disposal
- Zero Liquid Discharge

Water Conservation, Reclaim, Reuse and Wastewater Recycle Solutions

- Comprehensive Water Audits
- Process & Utility Focus
- Integrating Chemical, Equipment & Service

Mobile Water Treatment

- Emergency, Temporary, or Long-Term Rentals

Water Treatment Chemicals

- Full Range of Organic & Inorganic Chemicals

Industries Served

- > Inorganic Chemicals
- > Agro Chemicals
- > Plastics
- > Soaps / Toiletries
- > Paints / Adhesives
- > Pharma / BioPharm
- > Synthetic Fibers
- > Industrial Gases
- > Rubber
- > Natural Gas Liquids
- > Chemicals & Allied Products
- > Other

CASE STUDY



Global Chemical Manufacturer

PROJECT: Cooling Tower Make-up & Demin Water

LOCATION: United States

FLOW: 1,000 GPM

CLIENT SAVINGS: \$1.3 Million

The client was in need of a creative way to reduce cost and capital expenditures while needing to also meet a growing demand for demineralized water and cooling tower make-up to support its production processes. Veolia implemented an optimized design of the 1,000-GPM process water treatment system utilizing well water and POTW effluent. The modular system implemented by Veolia used a novel design that offered less equipment in less space while meeting the highest of performance requirements for the client.

Expansive Technology Portfolio

Water & Wastewater Treatment

Veolia's more than 350 patented technologies provide innovative solutions to help the chemical processing industry succeed in meeting strict regulatory requirements and optimize water usage throughout the facility.



Actiflo® High-Rate Clarifier/Softener

Small-footprint technology in which water is flocculated with microsand and polymer to increase settling velocity for the removal of more than 99% of TSS



Multiflo® High-Rate Softener

Proprietary softening process that incorporates chemical precipitation with sludge thickening to produce an effluent with low concentrations of scale-formers and a highly concentrated sludge that can be easily dewatered



Hydrotech Drumfilters & Discfilters

Filtration technology that uses woven media panels to remove suspended solids > than 10 microns



AnoxKaldnes™ MBBR (Moving Bed Biofilm Reactor)

High-performance aerobic wastewater treatment technology engineered to effectively remove nitrogen and BOD/COD



Reverse Osmosis (RO) Systems

Advanced membrane based water filtration systems engineered to create a high-quality permeate



IDRAFLOT® Dissolved Air Flotation (DAF)

An innovative and effective wastewater treatment technology based on a unique modular design to remove suspended solids and enhance thickening and clarification performance



Sand, Multimedia & Activated Carbon

Efficient equipment designed to remove particles, odors, and organics to improve intake water quality for use in utilities and manufacturing



Ion Exchange Systems

Flexible and automated water treatment systems used to soften, dealkalize, deionize, or demineralize water for utility or process applications

In-Process & Production Capabilities

In addition to water & wastewater treatment, Veolia also provides technologies for in-process and the production of specialty chemicals.

Evaporation & Crystallization

Veolia's HPD® Evaporation and Crystallization systems concentrate dilute process streams to extract high-purity crystalline chemicals while recovering clean water and other valuable by-products from waste brine.



HPD® Evaporation & Crystallization

Evaporation and crystallization technologies to recover valuable products and byproducts.

Specialty Chemical Production

Veolia's HPD® Evaporation and Crystallization technologies produce specialty water-soluble chemicals such as multi-nutrient fertilizers and crystalline crop-protection applications.



L'Eau Claire™

Upflow deep bed media filters provide a ready clarification solution. Its installed cost is less than that of a conventional sedimentation basin and filter system, requiring 75% less space.

Filtration

Veolia combines innovative technology with industry experience to provide economical and effective filtration and separation technologies.



Auto-Jet™ Filtru-Matic™

Superior precoat pressure leaf filters used for fine filtration (> 1 micron)

Standard Equipment Product Line

Pre-Engineered for Fast Implementation



Veolia offers standard, pre-engineered products and skid-mounted systems for several of its technologies. Our Standard Product Line offering is designed to provide cost-effective water and wastewater treatment solutions.

OUR STANDARD PRODUCT LINE INCLUDES:

- > Media & Membrane Filtration
- > Reverse Osmosis
- > Softening & Demineralization
- > High Recovery RO
- > Evaporators & Crystallizers
- > Wastewater Equipment
- > Drum & Disc Filters
- > UV Disinfection
- > Chemical Dosing Packages
- > Automated Control Systems

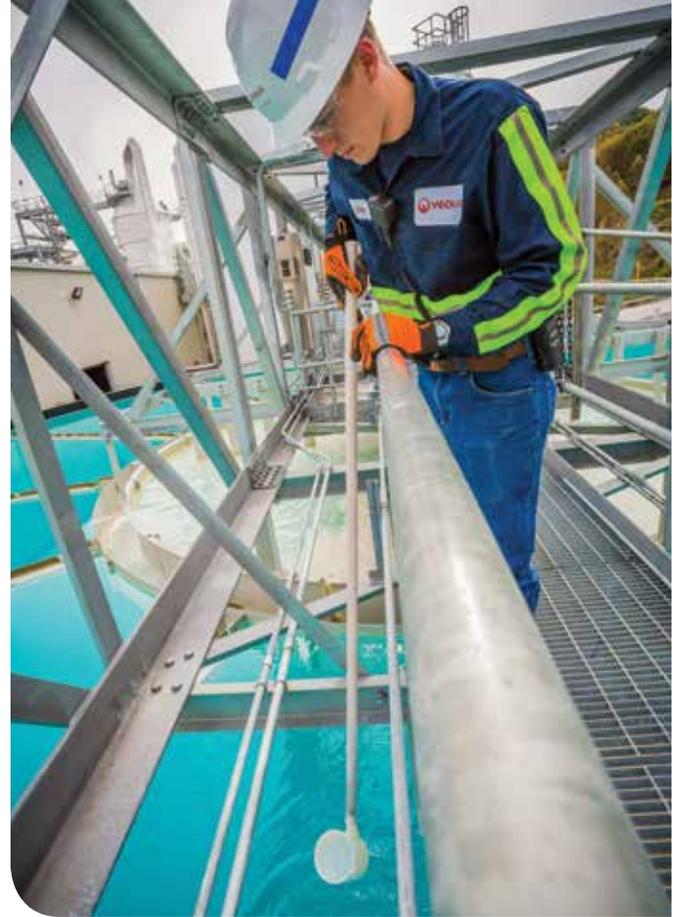
Comprehensive Service & Solutions

Veolia Water Technologies offers customer care at its best—not just during a capital project, but beyond.

Veolia does this by providing a wide variety of services to optimize the performance of water, wastewater, and utility infrastructure at chemical processing facilities. This is what makes Veolia a unique and comprehensive partner in water and wastewater treatment.

Our Services Include:

- > Laboratory Service / Testing
- > Bench-Scale Tests
- > Pilot Tests
- > Chemical Service Programs
- > Water Audits, Studies & Evaluations
- > System Troubleshooting
- > System Maintenance
- > Complete Process Design
- > System Integration
- > Start-Up & Commissioning
- > Training and Continuing Education
- > Spare Parts and Consumables
- > Full or Part-Time Skilled Operators
- > Remote Monitoring / Automation
- > Deionization Services



Veolia Water Technologies delivers creative, effective, and sustainable services and solutions that meet the business and environmental goals of its clients



Coffeyville Resources Nitrogen Fertilizers

SERVICES: Comprehensive Water Management
TECHNOLOGY: Mobile Actiflo & Hydrex Chemicals
LOCATION: Coffeyville, Kansas

Coffeyville wanted to develop a more sustainable approach to their water usage so they contracted with Veolia to evaluate their water usage and units of operation. The results of the evaluation lead to a 6-phase Water Conservation, Reclaim and Reuse program to be implemented at the facility. Through this approach, Coffeyville was able to reduce their overall water requirements by 13%, while also reducing the demands on the plant utility infrastructure and overall operational budget.





Aquaservice™
Operational & Environmental Compliance Services

Our on-site specialists can implement an objective, integrated, customer-specific plan to increase operational efficiency and ensure regulatory compliance.



Hydrex™ Chemical Solutions

Veolia's Hydrex™ chemical programs tackle our clients toughest water challenges by reducing their water footprint while improving both production and utility reliability and efficiency.



Lab Services & Pilot Testing

Laboratory and pilot testing is critical to characterizing water and wastewater streams for treatability. Veolia has in-house and onsite capabilities to ensure the feasibility and successful implementation of water and wastewater projects.



Mobile Water Services

Veolia's mobile fleet includes a wide range of technologies for temporary, emergency and long-term water treatment applications, including reverse osmosis (RO), clarification/softening, and more.



AQUAVISTA™
DIGITAL SERVICES

Smarter Water Management

To enhance water and wastewater treatment at your facility, Veolia Water Technologies has developed an all-in-one digital service called AQUAVISTA™.

AQUAVISTA is accessible Anytime, Anywhere and on Any Device through a single private portal. This advanced service allows our customers to efficiently manage their water treatment equipment in real-time, 24/7. AQUAVISTA can be implemented for a single technology or a complete water treatment facility.

A Faster Response to Your Needs

Using AQUAVISTA, Veolia can also perform a virtual site visit to a facility to more efficiently provide troubleshooting and emergency support.

Resourcing the world

Veolia Water Technologies

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