

# PFOS Remediation and Environmental Services



Perfluorooctanesulfonic acid (PFOS), belonging to the PFAS chemical family, is a persistent environmental contaminant linked to significant health risks. This report provides a detailed examination of PFOS remediation, highlighting current technologies, regulatory developments, and the roles of leading engineering and consulting firms in addressing contamination issues.

In 2023, the global PFAS services market was valued at \$28 billion, with North America leading the way in testing services. North American PFAS testing is projected to grow from \$178.7 million in 2023 to \$466.1 million by 2030, driven largely by stricter regulations that increase demand for testing, remediation, and compliance solutions.

## INDUSTRY GROWTH

The PFAS services sector is expanding rapidly, fueled by tightening environmental regulations—especially in North America. Testing and analysis are major drivers, with the North American market projected to reach \$466.1 million by 2030. Growth in waste management and treatment is being powered by technologies like advanced oxidation and ion exchange. Key industries relying on PFAS, including the military, petrochemicals, aviation, and electroplating, are driving demand for specialized contamination mitigation services.

### KEY SERVICE AREAS

- ✓ **Testing and Analysis.** Provides critical data and analysis regarding PFAS levels in diverse media, including drinking water.
- ✓ **Waste Management.** Focuses on the disposal and treatment of PFAS-contaminated waste, with services expanding to comply with regulatory demands.
- ✓ **Remediation and Treatment.** Employs technologies like granular activated carbon, ion exchange, and reverse osmosis to remove PFAS from water sources.

### INDUSTRIES WITH SIGNIFICANT PFAS-RELATED SERVICES

- **Military, Petrochemical, and Aviation.** Major users of Aqueous Film Forming Foams (AFFF) necessitate training with non-PFAS alternatives and management of existing stocks.
- **Electroplating.** Ongoing testing and remediation are required at facilities using PFAS in electroplating processes.
- **Solid Waste Landfills.** These sites contain PFAS from various sources, requiring specialized testing, containment, and leachate treatment services.



## KEY DATA POINTS AND TRENDS

- The EPA has set health advisory levels for PFOS and other PFAS compounds, which has increased the need for compliance and testing services.
- Emerging technologies for PFAS waste treatment, including advanced oxidation and thermal desorption, are driving market growth.
- Ongoing efforts aim to understand the impacts of PFAS exposure on environmental justice communities.
- NIH data show elevated PFAS serum concentrations in sectors such as construction and transportation.

## PFOS OVERVIEW

PFOS is a synthetic compound historically used in firefighting foams, stain-resistant fabrics, and various industrial processes. Its chemical stability and resistance to natural degradation have led to widespread environmental distribution, particularly in soil, groundwater, and drinking water sources.



## REMEDIATION TECHNOLOGIES

A range of advanced technologies are utilized to remediate PFOS contamination, each offering distinct benefits for applications.

| Granular Activated Carbon (GAC)                                                                         | Ion Exchange Resins                                                                        | Supercritical Water Oxidation (SCWO)                                                       | Electrochemical Oxidation                                                                               | Plasma-Based Treatment                                                                | Microscale Zero-Valent Iron (mZVI)                                                           |
|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Effective at adsorbing long-chain PFAS, including PFOS, and commonly used in municipal water treatment. | Highly selective for PFAS compounds, suitable for both long- and short-chain PFAS removal. | Converts PFAS into harmless end products, achieving destruction efficiencies up to 99.99%. | Uses electrical currents to break down PFAS molecules, suitable for mobile and decentralized treatment. | Employs cold plasma to disrupt PFAS chemical bonds, effective in field-scale testing. | Cost-effective and highly efficient, with greater adsorption capacity than activated carbon. |

## REGULATORY LANDSCAPE (2025)

The regulatory environment for PFOS remediation is evolving, with significant updates from the Environmental Protection Agency (EPA).

- The Maximum Contaminant Levels (MCLs) for PFOS and PFOA remain at 4 parts per trillion (ppt).
- The deadline for compliance with these standards has been extended to 2031.
- PFOS and PFOA are now classified as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- The PFAS OUTreach Initiative provides targeted support for small and rural water systems.
- Industries are responding by mapping PFAS across supply chains and enhancing collaboration between environmental health, safety, and product compliance teams.



## NORTH CAROLINA FOCUS

North Carolina is home to several prominent PFOS remediation providers.

- **AMFS Filtration.**  
Supplies PFOS treatment solutions to the Department of Defense and industrial clients.
- **Clear Creek Systems.**  
Active in North Carolina, offering scalable remediation solutions.
- **Highfill Infrastructure Engineering.**  
Supports municipal water infrastructure projects throughout the state.

## CONCLUSION

PFOS remediation is advancing thanks to regulatory updates and technological innovation. Engineering and consulting firms are deploying sophisticated treatment methods to address environmental and health concerns while ensuring compliance. North Carolina stands out as a center for PFOS cleanup, supported by specialized service providers.

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