PFAS Technology Selection: Removal & Destruction

The Engineering Reality

PFAS treatment is not a choice between removal or destruction. The optimal treatment strategy depends on water quality, treatment objectives, and long-term operational goals.

Key considerations include:

- PFAS concentration
- TOC/DOC levels
- Co-contaminants
- Flow requirements
- Residual management
- Long-term liability

The fundamental engineering question is:
"Which treatment strategy best aligns with the site's treatment objectives?"

When to Select *Cuf*® (Removal)

Primary Objective:

Remove and concentrate PFAS from large volumes of water while simultaneously addressing multiple water quality challenges.

Best Applications

- Municipal drinking water
- Water reuse
- High-flow surface water
- Multi-contaminant treatment

Water Quality Matrix

- High TOC/DOC
- Variable source waters
- Challenging raw water conditions

Key Benefit:
High-volume PFAS removal and multi-contaminant treatment in a single automated process with zero liquid discharge.

When to Select Photo-Cat® (Destruction)

Primary Objective:

Destroy PFAS and other persistent contaminants rather than transferring them to another waste stream.

Best Applications

- PFAS concentrate treatment
- Site remediation
- Industrial wastewater
- 1,4-Dioxane and VOC treatment

Water Quality Matrix

- Low TOC/DOC waters
- Concentrated contaminant streams
- Persistent contaminant applications

Key Benefit:
Permanent contaminant destruction with no PFAS residual or liquid waste stream requiring long-term management.

Integrated Treatment (*Cuf* ® + Photo-Cat ®)

For some sites, direct PFAS destruction can be limited by elevated TOC/DOC and other competing organic constituents. In these applications, CUF® serves as an upstream conditioning process that removes organics, suspended solids, and matrix interferences before Photo-Cat® destroys PFAS and other persistent contaminants in the clarified liquid stream.

Best Applications

- High TOC/DOC waters with PFAS
- Complex drinking water sources
- Industrial wastewater
- Challenging remediation projects
- Multi-contaminant treatment objectives