

Across the PFAS treatment landscape, a consistent pattern is emerging: current technology selection is frequently being driven by familiarity rather than verified performance. While historically adopted solutions such as granular activated carbon (GAC) and ion exchange (IX) offer perceived security, this reliance is increasingly leading to overengineered, complex, costly, and suboptimal treatment systems.

Current industry practices are often shaped by “Group Think”, repackaged legacy technologies, and commodity-based approaches, result in “kitchen sink” treatment trains, multi-stage, complex systems with undefined or escalating lifecycle costs. These dynamics limit awareness of proven, high-performance alternatives.

Key Industry Gap

The core issue is not the lack of available technology, but the narrow framework used to evaluate it. Decisions based on precedent rather than measurable outcomes are leading to:

- Excessive system complexity and footprint
- High long-term operational and maintenance costs
- Limited adaptability to evolving PFAS regulations
- Missed opportunities to implement integrated, single-unit solutions

A Required Shift in Evaluation

To align with current and future treatment demands, PFAS technology selection must transition toward a performance-driven framework. This includes prioritizing:

- **Verified On-Site Pilot Performance** (typically 60–90 days) to confirm removal efficiency and cost structure
- **Complete Multi-Contaminant Removal** within a single treatment platform
- **Regulatory Resilience**, ensuring consistent PFAS removal across varying water matrices and regulatory evolution
- **Operational Simplicity**, reducing dependency on multi-stage processes
- **Defined Lifecycle Costs**, including comprehensive energy, waste handling, and long-term maintenance cost



Performance benchmarks should also include full-chain (Short to Long) PFAS removal to below detection limits, **elimination of breakthrough risk, minimal waste generation, and stable operation through seasonal and source water variability.**

Expanding the Scope of Consideration

Technologies such as Continuous Ultra-Filtration (CUF®) and Photo-Cat® demonstrate that integrated, **high-kinetic** solutions achieves these outcomes. Supported by pilot validations and field performance, these approaches offer:

- Order-of-magnitude reductions in OPEX and footprint
- Elimination of multiple conventional processes (e.g., GAC, IX, RO-based trains)
- Consistent, steady-state operation without performance degradation

Pilot verifications, attached above for your reference, demonstrate successful PFAS removal under real-world conditions, including one project under construction and a second in detail design.

Call to Action

Consultants, engineers, and stakeholders play a critical role in shaping long-term infrastructure decisions. Expanding the evaluation framework beyond conventional technologies is not optional, it is necessary to ensure that selected solutions deliver measurable performance, cost efficiency, and regulatory alignment.

We encourage you to:

- Actively assess pilot data and verified field results
- Challenge default specifications where appropriate
- Prioritize solutions that demonstrate long-term value, not just familiarity

We also welcome the opportunity to exchange knowledge and engage in technical discussions. Our team is available to support webinars or focused sessions to review performance data, case studies, and application-specific considerations in greater detail.

We welcome the opportunity to discuss these findings further and explore how performance-based approaches can support your current and upcoming PFAS treatment projects.

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