

This fact sheet has been prepared by the technical staff of No-Pollution Enterprises. It is intended to keep our visitors informed of PFAS. A recently published study by the Harvard T.H. Chan School of Public Health reports levels of PFAS that exceed federally recommended safe levels in public drinking-water supplies for 6 million people in the United States, and that up to 100 million people could potentially be at risk. Please refer to other Fact Sheets for relevant information on these chemicals.

TECHNOLOGY OPTIONS

Water systems that need to handle PFNA, PFOA, or PFOS contamination have to be thoroughly evaluated on a site-by-site basis. The costs of different treatment options will vary depending on the availability and proximity of alternate sources and site specific conditions, including the composition and nature of ground and waste waters. Common water treatment technologies include:

- Granulated Activated Carbon
- Membrane Filtration
- Anion Exchange
- Advanced Oxidation

Of the various treatment options currently available, granulated activated carbon (GAC) or an equally efficient technology should be considered for treatment of PFNA, PFOA, and PFOS detected above a MCL (minimum contaminant level) subject to on-site pilot testing performance results.

When selecting an appropriate treatment option(s), there are several factors to be considered; these include:

- initial concentration of PFCs,
- the background organic and metal concentration (e.g. competition for active sites on sorptive media),
- available detention time and other site conditions,
- operation and maintenance costs,
- ability to address more than one contaminant with one treatment option, and
- waste disposal.

Bench and/or pilot studies should be designed to aid in the establishment of the required design parameters specific to the treatment processes being evaluated. Conceptual level design should then be used to develop reasonable cost estimates for a full life cycle cost analysis to include capital, operation, and maintenance costs. The full life cycle cost analysis can be utilized to define the best option specific to an individual water system.

REMOVAL EFFICIENCIES

The removal efficiencies of different water treatment technologies for PFAS chemicals in water are summarized in the chart.

Treatment Technology	Removal Efficiency (%)		
	PFNA	PFOA	PFOS
Granular Activated Carbon	90	90	90
Membrane Filtration	90	90	90
Anion Exchange	67	10-90	90
Advanced Oxidation	10	10	10-50

