

# PFAS Treatment

## Testing, Pretreatment, and Liquids & Biosolids Treatment

### PFAS in Water, Wastewater & Biosolids Treatment Facilities

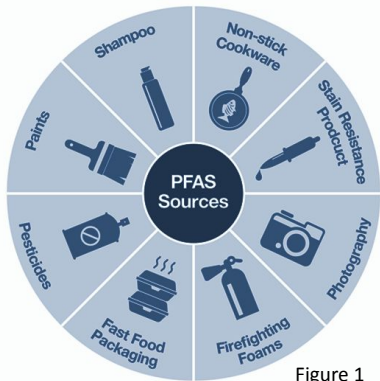


Figure 1

US EPA and many state regulatory agencies have either issued health advisories or have regulatory limits for various PFAS compounds found in liquids and solids. PFAS are persistent, toxic and bioaccumulative, and have been classified as a “forever” chemical, with over 4,700 different compounds. These “forever” chemicals can be found in everyday items such as shampoo, fast-food packaging and fire fighting foam. PFAS compounds from these and other sources contaminate liquids and solids going into treatment facilities. (Figure 1: defence.gov.au)



### Veolia Laboratory in Pennsauken, NJ

#### Bench-Scale Testing to Identify Optimum Treatment Train

- MBBR
- DAF
- Clarification
- Pellet softening
- RO, NF, UF
- Small-scale, rapid column testing

### Pilot Testing

- Multiple skids available: 2 to 6 columns
- Various column diameters and lengths
- Small flow (0.5 to 2 gpm)
- Easy to move around
- Minimum power demand and oversight required



### Emergency Services

- Containerized or mobile treatment systems
- Mobile units for rapid deployment (GAC, IX, RO)
- 20 or 40 foot containers for longer durations
- Units can be rented or purchased
- Media change out and disposal services



## Full-Scale Treatment

### Liquids Treatment (cost effective)

#### Hydrex™ GAC, Ion Exchange (IX) and Speciality Medias

- NSF approved media when needed
- Surface water, groundwater, wastewater, industrial
- Less expensive pretreatment media that reduces loading
- Diverse supply chain to ensure inventory & price controls
- Media change-out and disposal services can be provided

**HYDREX™**



#### Pressure Vessels to House PFAS Media

- 20 to 700 gpm vessels
- Skid mounted or in pairs
- No backwash or regeneration

### With Pretreatment

#### Ensures Maximum GAC and IX Bed Life

- Media change-out accounts for majority of operating costs
- TSS, TOC, dissolved metals, hardness, sulfate, chloride, nitrate
- Landfill leachate - VOC's, ammonia, BOD

#### Pretreatment Solutions from Veolia

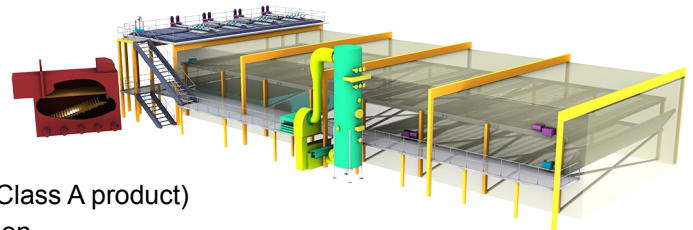
- Biological Treatment
  - MBBR, IFAS - AnoxKaldnes™
- Softening
  - Pellet softening - ACTINA™
  - High rate - ACTIFLO® Soft
- Clarification and Filtration
  - Clarification- Multiflo™, ACTIFLO®
  - Media filtration - Hydrotech Discfilter, Filtraflo™



### Biosolids Treatment

#### BioCon™ Thermal Sludge Drying with ERS

- Solids facility is energy independent
- Volume reduction is >95%
  - Wet cake to biosolids ~ 90% reduction (this is a Class A product)
  - Biosolids to ash ~ additional 60% volume reduction
  - PFAS destruction in solids, liquids and gases



#### Kruger

4001 Weston Parkway • Cary, NC 27513  
tel. +1 919-677-8310 • fax +1 919-677-0082  
[www.veoliawatertech.com](http://www.veoliawatertech.com)