



## Developments in the Remediation of PFAS Contamination

### Introduction

Per- and Poly- fluoroalkyl substances (PFAS) are a broad group of over 9,000 synthetic organic chemicals commonly referred to as PFAS chemicals. They are sometimes referred to in the media as 'forever chemicals' and some are also Persistent Organic Pollutants (POPs). They are a large group of man-made chemicals that were developed in the last century for use in many applications including firefighting foams and non-stick saucepans.

### Commercial Use

Examples of UK industries PFAS were/are used in, include the following:

- Firefighting foams and fire suppression systems
- Industrial foams
- Paints and varnishes
- Carpet, textile and leather industries
- Paper and cardboard manufacture
- Electronics industry
- Electroplating
- Fluorochemicals industries
- Pharmaceuticals
- Industrial coatings
- Rubbers and plastics
- Surfactants and cleaning products
- Printing and photographic works

### Problems

The characteristics that made PFAS chemicals useful are the reason that they persist in the environment and can bioaccumulate in humans and animals. Toxicology studies have raised concern about potential carcinogenic effects for humans exposed to PFAS chemicals, including possible developmental effects for the foetus and young children. The chemicals are very stable and do not biodegrade in the environment and normally have to be destroyed using high temperatures or energy intensive systems.

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## **Solutions**

TRM has developed a remediation system for removing PFAS chemicals from contaminated groundwater and surface waters. A recent project in the East Midlands showed over a 98% reduction in the concentration of Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic acid (PFOS), two common PFAS pollutants, in the groundwater within the contaminated site. This remediation system was developed and tested in a real-world environment by optimising different physicochemical properties of various filtration media, and then successfully remediating the contaminated environment after an initial optimisation phase.

## **Services**

TRM is able to offer its services for PFAS contamination to various industries in the following ways:

- Preliminary risk assessments
- Contamination assessments
- Site investigation and characterisation
- Sample analysis and reporting
- License/Environmental permit surrender works
- Remediation trials and site-specific product development works
- Site remediation

If you have any issues relating to PFAS contamination of soils and groundwater, then please contact us for assistance and a confidential appraisal.