

PerfluorAd



1% AFFF Extinguishing Foam



Crude Oil/Extinguishing Residue



PerfluorAd® Agent



Flocculation Phase

PFAS Treatment of Recovered Fire-fighting Fluids

Project experience has shown us that concentrations of PFAS in recovered fluids resulting from fire-fighting training events, foam tests or large scale industrial or petrochemical fires can range between several 100 and 40,000 ppb.

Rather than PFOS, the telomer 6:2 FTS (fluoro-telomer sulfonate) is usually a more significant compound as well as cationic and anionic surfactants, fluoro-organic compounds (partly precursors), high concentrations of dissolved organic carbon (DOC), suspended solids, pH etc. Concentrations of these compounds can be an order of magnitude higher than the PFAS values.

The following data derives from a controlled rigorous laboratory experiment with fluids from a foam test extinguishing trial. These data are provided as an indication of PerfluorAd® performance.

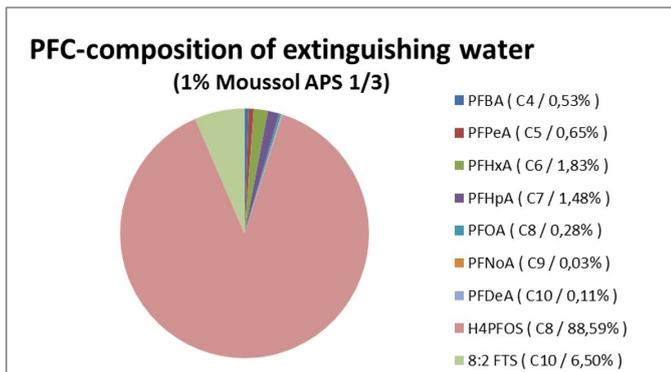
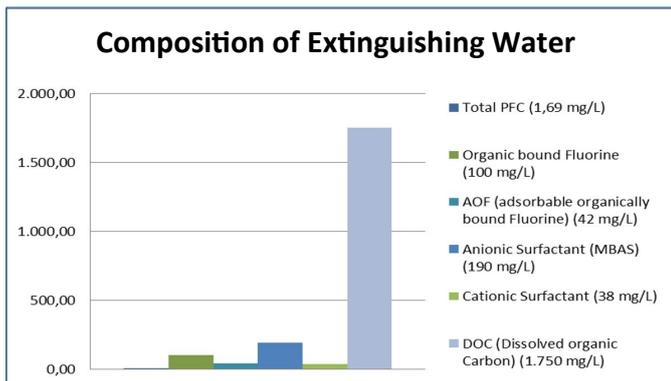
A diluted solution with 1% AFFF was utilised for extinguishing a simulated fire generated with crude oil. The following compounds were detected within resulting dark grey fluid:

- 228 mg/l surfactants
- 142 mg/l fluorine-compounds (plus 59 mg/l Capstones A+B)
- 1750 mg/l DOC; and
- circa 2 mg/l PFAS (23 parameters).

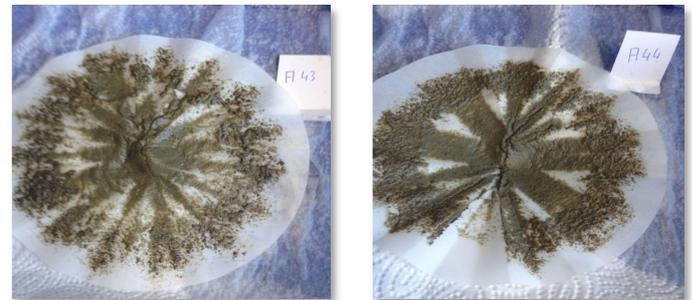
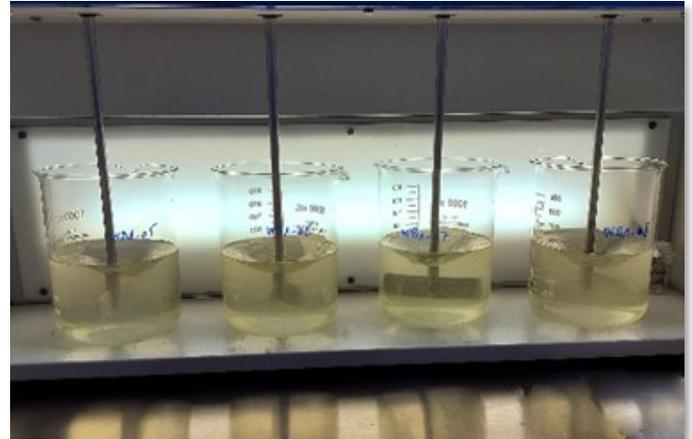


PerfluorAd Dosing and Laboratory Procedures

Lab tests were undertaken with different dosing rates of PerfluorAd and reaction/mixing time of 20 minutes. Water from each test was filtered and the remaining concentration of PFAS measured.



Results range from 39.3% to 99.55% removal. The optimum PerfluorAd dosing rate was found to be 2 g/l. Whilst this is a much higher dosing rate than would be necessary for a typical groundwater treatment, the results achieved are summarised below.



Filtration residues after PerfluorAd treatment

It is important to stress that there was **no interference from the DOC** and the water was visibly clear after treatment. Results from field applications confirm the above data)

Elevated concentrations of PFAS are also found in the rinse water associated with the process of replacing AFFF foams in fire extinguishing systems, both mobile fire engines and airport crash tenders and fixed foam extinguishing systems. Please refer to our AFFF Rinsing brochure.

In any case we strongly propose that both a bench test and field scale pilot trials are undertaken in order to evaluate the cost and benefit of PerfluorAd use.