

## Updates on a Holding Time Evaluation Study for the analysis of PFAS in Aqueous Samples

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**Background/Objectives.** Per- and polyfluoroalkyl substances are considered persistent organic pollutants (POPs). As such our expectation is that they remain in the environment for years and in many cases are not biodegradable. However, the lone EPA method for the analysis, EPA Method 537, version 1.1, stipulates a holding time of 14 days. Fourteen days is the same holding time used for EPA methods like SW-846 3510/8270 where the target compound lists include compounds known to be susceptible to microbial action or other enhanced oxidation technologies. Is the 14-day holding time for POPs like PFAS overkill?

**Approach/Activities.** EPA Method 537 requires the use of polypropylene containers and specifically admonishes glass. This is purportedly due to adsorption of PFAS compounds on the glass walls. In addition, a preservative is added as a chlorine scavenger, Trizma, which also is purported to have some buffered capacity that could potentially improve holding time. Trials were prepared with spiked laboratory water in glass and high density polyethylene (HDPE), and with and without Trizma. Additionally, since Method 537 requires the use of the entire sample container and a rinse of the container, trials with whole container and partial container (subsample) were prepared. Containers were pulled from storage at consistent intervals over 3 months.

**Results/Lessons Learned.** The presentation will describe the results of this holding time study which have been reported previously. In that work we looked to compare container type, preservative versus no-preservative and whole container versus a subsampled container. Additional work has been done to statistically regress the previous reported results and “mine” additional conclusions. Results will be compared for a range of compounds broader than the EPA Method 537 list and will attempt to determine the optimum holding time for each of the scenarios presented previously. Additionally, several new parameters have been included to broaden and strengthen the results originally reported.