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February 1, 2022

To: Director Angelo Della Manna
Re: Response to Alabama Department of Forensic Sciences Case Acceptance Policy

I have been asked by several of my public sector customers throughout the State of Alabama to respond to a statement in a memo dated December 10, 2021 that "questions the probative scientific information becoming increasingly limited due to the concern of petroleum-based products and their associated distillates being used in the manufacture of many household materials and furnishings."

Fire Debris Analysis is a highly specialized forensic discipline that requires properly trained professionals to analyze spectral data to determine if a foreign ignitable liquid is present in fire debris samples. This field has become increasingly challenging due to the number of ignitable liquids on the market and the mis-conceptions that many household materials contain ignitable liquids. To combat the mis-conceptions, the National Center of Forensic Science in conjunction with TWGFEX, created and maintains two databases: Ignitable Liquid Residue Database and the Substrate Database.

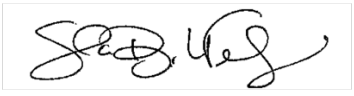
The Substrate Database is a compilation of characterization data from household materials, to determine which substrates if any, contain identifiable ignitable liquid residues present in unburned and burned substrates. Over the past decade, I have served as not only a member, but also co-chair of this committee during its inception and successful completion of the Substrate Database (https://ilrc.ucf.edu). I hope you will find the results of the published research compelling (Forensic Chemistry July 2017 [1]).

In summary, a total of 599 materials were analyzed for the presence of ignitable liquids in an unburned state. Additionally, those 599 materials were burned to varying levels under different protocols to reproduce off gassing of pyrolysis materials (background interference) for a total of 1792 data sets. Of the 1792 data sets, only 20 datasets contained identifiable ignitable liquid residues. Of those 20 datasets, 16 of the ignitable liquids were only present in the UNBURNED substrate, which means the survivability of an ignitable liquid in a burned substrate was only identified in less than **1%** of household materials.

This database was created to provide scientific documentation for forensic scientists to utilize in formulating conclusions and opinions in fire debris analysis. The use of these databases and request of comparison/control samples if needed, aid forensic scientists in scientifically concluding whether the ignitable liquid present is a substrate contribution or a foreign ignitable liquid. Many state laboratories throughout the country have chosen to outsource fire debris cases due to the limited number of certified scientists and the lack of continual training in this discipline.

My concern is that ADFS has taken an inaccurate position regarding ignitable liquids present in substrate materials that could be detrimental to past and present criminal and civil litigations. Please feel free to contact me should you have any further questions or wish to discuss this matter directly.

Sincerely,



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CC: Alabama Fire Chief's Association
Alabama Association of Arson Investigators
Fire Marshal's Association of Alabama
Alabama State Fire Marshal's Office