# Identifying a Targeted Disinfection Byproduct in Wildfire Ash Water Extract by GC-TOFMS

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Water treatment using chlorine is recognized as an effective way to kill dangerous bacteria and microorganisms, but can result in the formation of halogenated disinfection byproducts (DBP) which can be harmful to human health. When wildfire ash is introduced into the drinking water system, the interactions between chemicals are even more complex and can produce additional contaminants of concern. In the figure below, the combination of time-of-flight full-mass range data acquisition and powerful deconvolution algorithm allowed for proper identification of both a targeted DBP with known adverse health effects and another potential contaminant in a chlorine-treated sample of water extracted from wildfire ash containing the burn residue of commercial products..
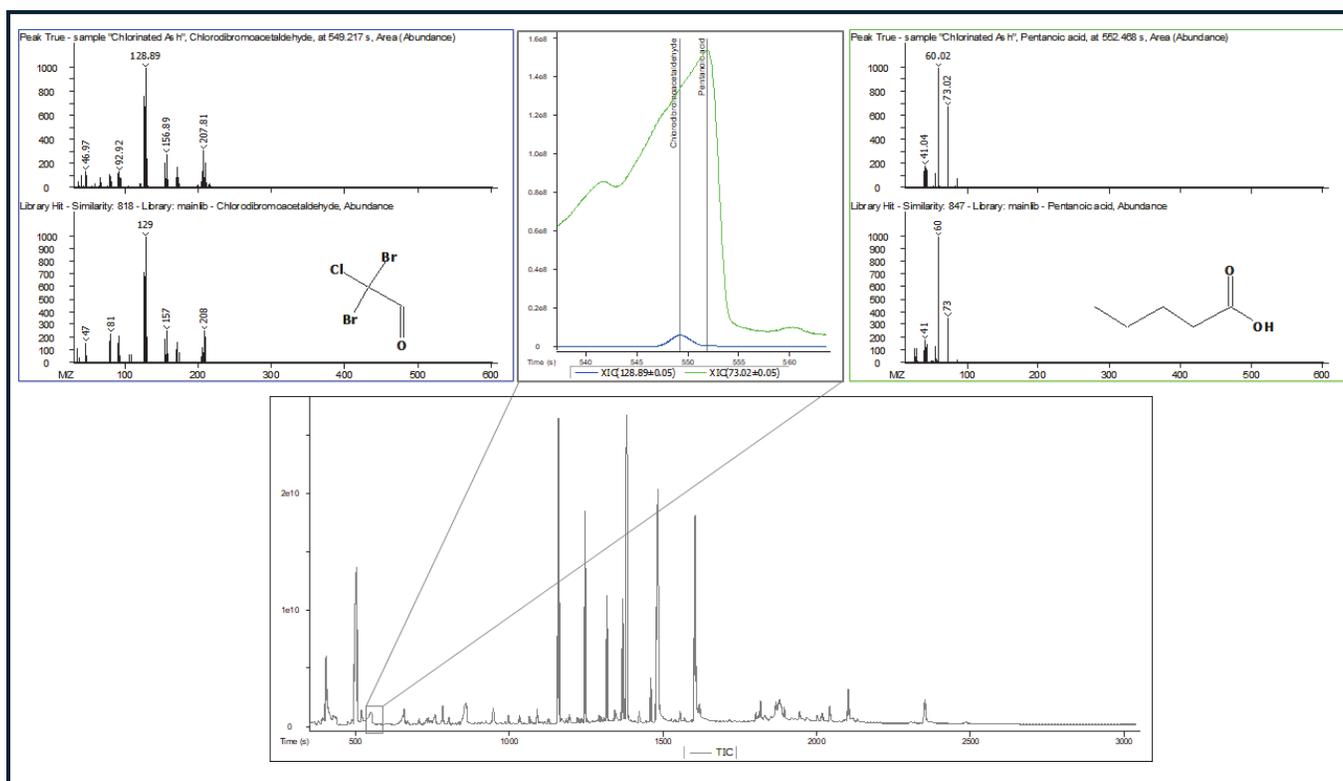
Chromatogram of chlorine-treated water extract from wildfire ash showing zoomed-in section with successful identification of a target compound (chlorodibromoacetaldehyde), as well as a non-target compound (pentanoic acid). The ChromaTOF deconvolution algorithm was able to properly apportion the masses for each Peak True spectra, finding even the low-intensity halogenated DBP under the large signal for the tailing acid and providing library similarity scores greater than 800/1000 for each.