



## Practical Applications of Direct Aqueous Injection Methods for Quantitative PFAS Analysis by LC-MS/MS

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When analyzing for PFAS in environmental matrices, solid phase extraction (SPE) is typically used as a sample preparation technique to ensure proper sample cleanup and concentration, enabling laboratories to achieve extremely low detection limits. Using a simplified preparation procedure based on Direct Aqueous Injection (DAI) or dilute-and-shoot liquid chromatography/tandem mass spectrometry (LC/MS/MS), it is possible to analyze for PFAS in water and soil samples without performing costly and time-consuming sample preparation techniques. This approach can be used in combination with more robust analytical methods such as EPA 1633 for highly concentrated samples, or samples of unknown concentration range.

With turnaround time and capacity being the biggest challenges for laboratories across North America, the presentation will focus on the applicability of Direct Aqueous Injection methods coupled to LC-MS/MS for quantitative PFAS analysis in environmental matrices. A review of existing standard analytical methods based on DAI will be provided, highlighting major differences in sample preparation strategy and method performance. The advantages of Direct Aqueous Injection, including improvement in analysis speed and method performance will be discussed.

### Sanja Risticic

Sanja Risticic (PhD, Analytical Chemistry, University of Waterloo) is the manager of LC-MS department at ALS Waterloo. She has 10+ years of extensive experience in research & development and analytical method development in analysis of organic compounds in complex samples including food, cannabis, pharmaceutical and environmental samples by GC-MS, LC-MS, and comprehensive two-dimensional gas chromatography.

### Tammy Chartrand

Tammy Chartrand is the National PFAS Program Lead for ALS Canada. She holds a Bachelor of Science degree from the University of Ottawa and has over 10 years of experience in the environmental industry. She started her career with ALS as a Business Development Representative for the Ottawa area in 2016, following several years in the Federal public sector. She has been involved in the PFAS space supporting operations and client engagement since 2021.