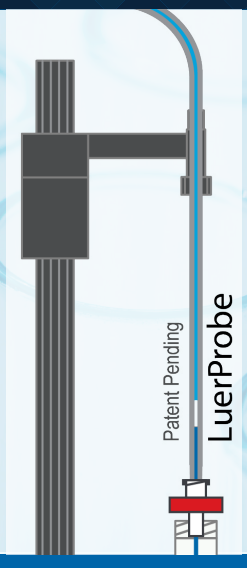
Elemental Scientific

*High Throughput Filtration & Dilution by **TRAX**Station with LuerProbe*



TRAXStation
Filtering & Diluting
Filters and dilutes samples in a single step, efficiently producing filtrates ready for analysis

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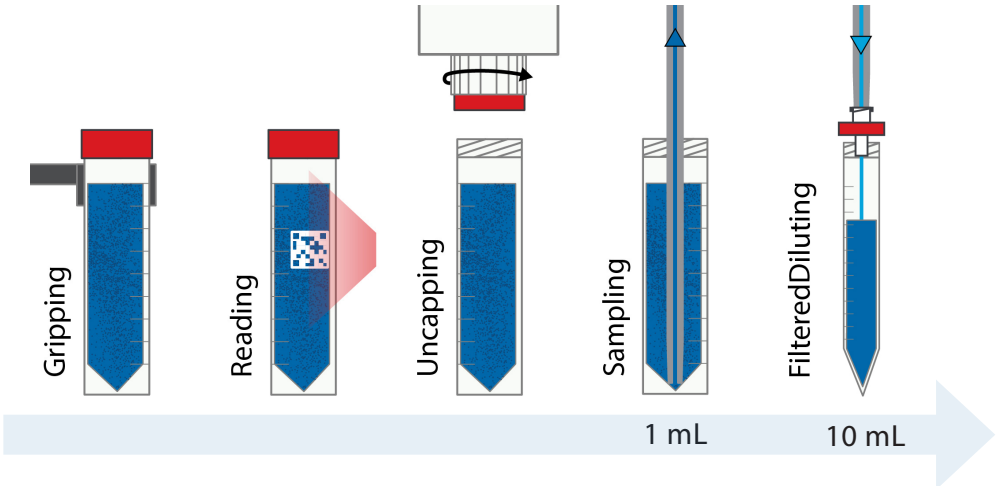
Evaluation of a New High-Speed, Automated Approach to Sample Dilution and Filtration Using **TRAX**Station

Synopsis

TRAXStation automatically generates an accurate volume of sample filtrate. This precision allows filtration and dilution to be completed in one step for total metals determinations in acid-preserved samples that require dilution before analysis, by immediately syringe-pumping diluent behind the sample. Throughput is increased, sample filtration and dilution is automated, and a tube otherwise required for manual filtrate collection is saved. For this study, 120 barcoded, acid-preserved, and Lu-spiked samples were prepared in capped 50 mL tubes. **TRAX**Station read, uncapped, and sampled exactly 1 mL into the LuerProbe, filtered each sample into a 15 mL ICPMS test tube, and immediately diluted it to a final volume of 10 mL. Monitoring Lu by ICPMS allowed reproducibility and accuracy of the filtration and dilution to be monitored. With parallel processing, approximately 2 filtered and diluted samples are produced per minute.

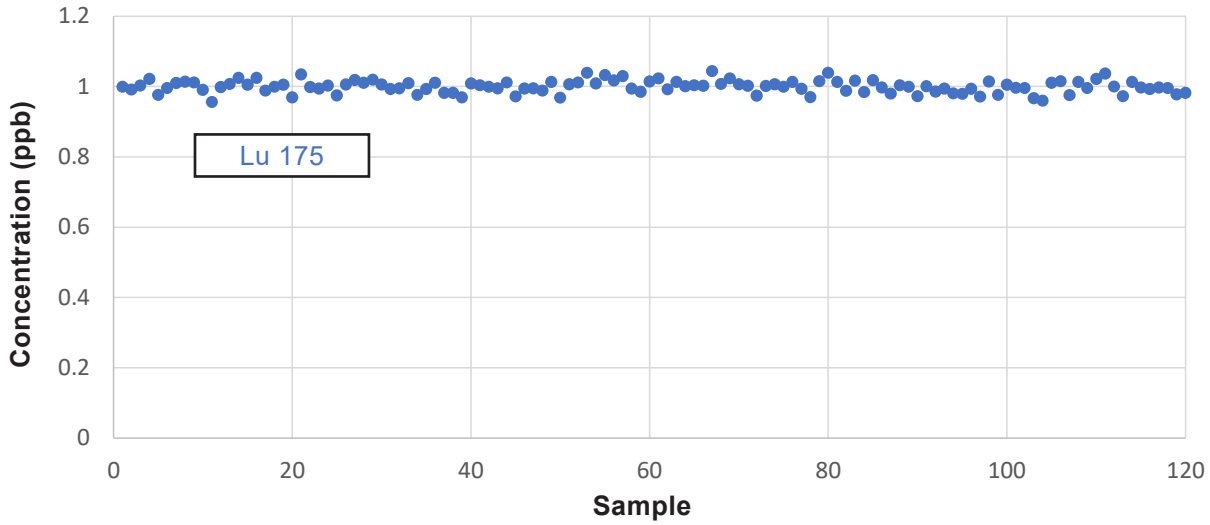


TRAXStation automatically and completely prepares racked samples for analysis. LuerProbe is used for sampling and filtered diluting steps.

Learn More

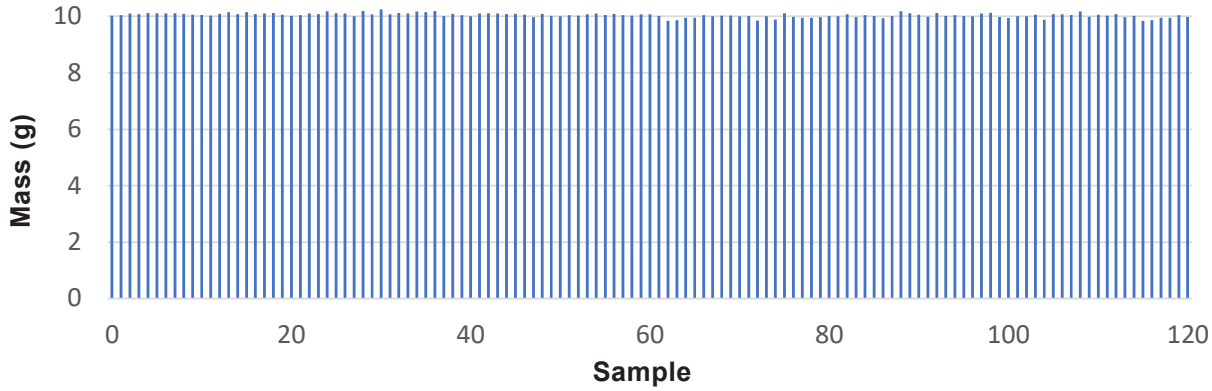
High-throughput Filtration and Dilution by **TRAX**Station

Reproducibility of 10X Dilution through a 13 mm filter as verified by ICPMS



Concentration of Lu-175 (ppb) in 120 filtered and 10x diluted samples as measured by ICPMS. Each original sample was spiked with 10 ppb Lu. **TRAX**Station sampled 1 mL into the LuerProbe, a 13 mm 0.45 µm filter was attached, then the sample was dispensed through the filter, followed by 9 mL of 2% HNO_3 diluent, achieving a 10X dilution. The target post-dilution concentration for Lu was 1 ppb. The average measured concentration was 1.00 ppb with an RSD of 1.78%, verifying the accuracy and reproducibility of this approach to filtration and dilution of acid-preserved samples.

Reproducibility of Final Filtrate Volume Following Autofiltration and Dilution Using 13 mm 0.45 µm Filters



Measured mass of 120 10X diluted filtrates, automated using **TRAX**Station. 1 mL of sample was drawn into the LuerProbe then diluted with 9 mL of 2% HNO_3 through a 13 mm 0.45 µm Luer filter. The target mass of the prepared sample in the tube was 10.07 g. The average measured mass was 10.06 g with an RSD of 0.75%, indicating the high reproducibility of the high throughput approach to filtration and dilution.