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Radioxenon spiked air for field testing

A trusted known test sample is vital to working with measurement systems regarding diagnostics and quality control. In the laboratory setting, diagnostic and quality measurements have been essential to troubleshooting and performance demonstration, respectively. The ability to make these types of measurements is just as powerful and necessary in the field. The measurement of radioactive xenon by the International Monitoring System (IMS) of the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO PrepCom) could benefit from the ability to make diagnostic and quality control measurements at established monitoring stations. The test sample or measurement sample must be available at the field locations to take advantage of the power of diagnostic and quality control measurements. Idaho National Laboratory (INL) has demonstrated the ability to prepare test and quality samples of radioactive xenon in various matrices. Partnering with the Swedish Defence Research Agency (FOI) has led to the demonstration of the measurement of an air sample spiked with radioactive xenon provided by INL. The preparation, measurement and results of the multiple iterations will be presented to demonstrate the capability of producing and using diagnostic and quality samples.

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