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MSI
Minnich and Scotto, Inc.

Kassay
Field Services, Inc.

Recent Advances in the Environmental Application of Open-Path FTIR Spectroscopy

Open-path spectroscopy has been used successfully to address a variety of environmental concerns over the past decade. Fourier-transform infrared (FTIR) spectroscopy has been the open-path technique of choice in most circumstances, due to its ability to measure hundreds of individual (speciated) gaseous compounds and its status as a USEPA compendium method (Method TO-16). When coupled with onsite meteorological data, open-path FTIR spectroscopy can provide accurate estimates of emissions from large, complex sources.

US Environmental Protection Agency
Surreptitious, standoff nerve and chemical agent monitoring is currently being conducted during selected large venues at a national speedway.

Confidential DOD Contractor
A field study assessed the feasibility of remotely detecting insurgent activities. Signature compounds unique to the specific activities were released from discrete locations within a simulated village constructed in the California desert.

New York City Department of Environmental Protection
Vertical dispersion curves were developed based on the controlled release of dual tracer gases for 77 separate process-tank monitoring events to support development of a refined hydrogen sulfide emissions inventory at a large NYC municipal wastewater treatment plant. Performed to address regulatory requirements in connection with a $500+ million facility upgrade, this work facilitated the site-specific customization of AERMOD – USEPA's latest guideline air dispersion model.

Gas Technology Institute
A 2½-year R&D field project successfully demonstrated an automated, FTIR-based software system to provide real-time, community protection during the cleanup of former manufactured gas plant (MGP) sites. This system, applicable for many hazardous waste site cleanups, was shown to be more accurate, cost-effective, and technically defensible than traditional point monitoring.

Governments of Trinidad and Tobago
Emissions of methane and nitrous oxide were monitored to demonstrate the effectiveness of the restoration of the Nariva Swamp, the largest freshwater wetlands in the two countries. Part of the Nariva Swamp Restoration and Carbon Sequestration Project, the work was funded by the International Bank for Reconstruction and Development (IBRC) as trustee for the World Bank's BioCarbon Fund.