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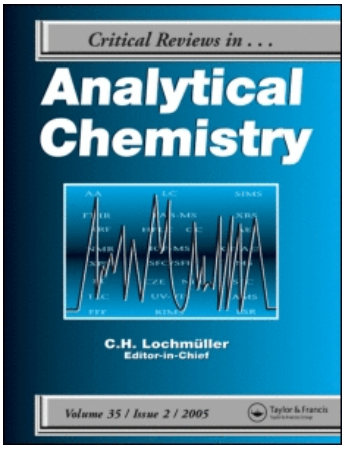

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THE ROLE OF FIELD ANALYTICAL TECHNOLOGIES IN ENVIRONMENTAL PROBLEM SOLVING

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THE ROLE OF FIELD ANALYTICAL TECHNOLOGIES IN ENVIRONMENTAL PROBLEM-SOLVING

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The United States Congress and the public are demanding faster and more cost-effective solutions to our environmental problems. Part of the cost of assessing and cleaning up contaminated lands is due to the need to analyze soil, water, and air samples to determine the nature and extent of contamination. This information is used to determine if there is an imminent or substantial endangerment to human health, the environment, or both from a given site. This information is also essential for selecting the appropriate remedy. Selecting the remedy is "...based on current and reasonable potential risks to human health and environmental resources." (Stanley and Johnson, 1996)

Throughout the 80's there was a large demand for chemical analytical services to meet this data collection need. These services were usually provided by fixed analytical laboratories. By the late 80's and early 90's, the high costs of cleanup, which include the cost of sample collection and analysis, began to weigh heavy on the minds of those responsible for paying the bills. Most people recognize that, regardless of who legally "owns" the problem, the costs are ultimately born by all citizens. We are becoming more cost-conscious than we were when we first set out to clean up the environment. The costs for maintaining our current level of environmental stewardship are immense and growing. As we have become more cost-conscious and the enormity of the size and extent of our environmental problems has come more clearly into focus, so too has our desire to use more cost-effective tools and approaches for environmental problem-solving. The emergence of field analytical technology is a response to this desire. Field analytical technologies have been shown, in some cases, to generate data of comparable quality to those generated by fixed analytical laboratories, supporting the viewpoint that field analytical methods can provide an alternative or complementary means to gather contaminant concentration data (Pasmore, 1997; Lesnick, 1994). Unfortunately, their emergence and acceptance have been slow due to a variety of barriers.

This presentation provided an overview of the potential applications for which field analytical technologies can and, in some cases, already have had a role. It also included a discussion of the barriers which the U.S. Environmental Protection Agency is attempting to alleviate through the implementation of the Environmental Technology Verification (ETV) Program (U.S. EPA, 1997).

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