Technical Course Outline – LSP Course Number 1203

Field Screening Petroleum Hydrocarbons Using Ultraviolet Fluorescence Technology

Provided by: Steve Greason, President, Sitelab Corporation
Steve Boynton, LSP, Subsurface Environmental Solutions

Date: Thursday, September 16, 2010
Time: 8:00 AM – 12:00pm
Location: Holiday Inn, 700 Myles Standish Blvd, Taunton, MA 02780

Course Description:

Delineating the extent of petroleum contamination during site assessment and remediation activities at disposal sites in Massachusetts can be significantly improved using new field screening tools to test soil, sediment, water or NAPL on-site. Ultraviolet fluorescence (UVF) is portable tool which can accurately measure a wide variety of petroleum hydrocarbons, including TPH, GRO, DRO, VPH, EPH and PAHs required by federal and state regulatory agencies. Fluorescence has proven to be a very fast, easy and affordable field screening method and both correlates and compliments traditional off-site laboratory techniques. This seminar will provide the participant with state of the art knowledge of fluorescence testing which is becoming an everyday tool for the LSP to gather accurate and reliable data in a timely, cost-effective fashion.

The 4 hour "technical" continuing education course will provide the participant with:

- **Technology Description:** The science behind ultraviolet fluorescence, it's current uses and UVF's forensic fingerprinting capabilities to identify the age or type of petroleum.

- **Technical Considerations:** Regulatory acceptance, types of compounds detected and not detected, cost, speed and performance characteristics.

- **Applications:** Case studies and discussion will be provided for environmental site assessments, remedial actions, UST investigations, Brownfield sites and Triad projects. Case studies and discussion will also be provided detailing the test method's performance in the U.S. EPA's Superfund Innovative Technology Evaluation Program.

- **Hands on Training – Sample Preparation & Analysis:** Participants will break up into groups and learn how (1) to extract samples, (2) analyze samples, (3) calibrate instrument and (4) report test results for soil, water and oil (LNAPL forensics).

- **Data interpretation, Quality Controls and Method Limitations:** How test results compare to confirmatory lab GC analysis and how to apply results to state action levels. Determining detection limits, quality controls to consider, troubleshooting problems and sample homogeneity issues.

This seminar will provide the LSP with the information needed to evaluate fluorescence test methods and to be familiar with limitations of use.

About the Instructors:

Steve Greason

Steve Greason is an environmental scientist and founder of Sitelab Corporation, located in West Newbury, Massachusetts. Since 1998, the company provides mobile laboratory services and test kit products worldwide utilizing ultraviolet fluorescence technology. Mr. Greason serves as the sales and technical support manager, and has trained a variety of different types of customers, including LSPs in Massachusetts, environmental consulting firms, the U.S. Dept. of Energy, utility companies, refineries, contractors for the U.S. Air Force and Army Corp. of Engineers and high school and college classrooms. Prior to Sitelab, Mr. Greason operated Urban Contamination, Inc., a small mobile laboratory and consulting service in the Boston area from 1995 to 1998, where he developed Sitelab's fluorescence methodology. Before then, from 1990 to 1995, Mr. Greason worked in the environmental lab industry where he gained experienced from operating analytical equipment to project management.

Steve Boynton

Steve Boynton is the owner of Subsurface Environmental Solutions, LLC based in Andover, MA, and is a Massachusetts Licensed Site Professional, and a Registered Professional Engineer in Massachusetts and New Hampshire. He has over 25 years of professional experience performing environmental and geotechnical engineering evaluations. Mr. Boynton chaired the LNAPL Committee that prepared LNAPL White Papers on behalf of the LSPA Association. He holds a Bachelors of Science degree in civil engineering from Tufts University, and a Masters of Engineering degree (geotechnical) from the University of Texas at Austin.