



# The TTEP Quarterly

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The quarterly update of U.S. EPA's Homeland Security Technology Testing & Evaluation Program (TTEP)



## EPA and Air Force Partner on Evaluation

The U.S. EPA and U.S. Air Force (USAF) are partnering on an evaluation of the Inficon HAPSITE® gas chromatograph-mass spectrometer (GC-MS). The HAPSITE is a portable GC-MS for on-site analysis of volatile organic compounds in air. The optional HAPSITE Headspace Sampling System (HSS) and HAPSITE SituProbe Purge-and-Trap attachment allow for water analysis on-site. The USAF Bioenvironmental Engineering (BEE) personnel use Inficon's HAPSITE to detect and measure contaminants in emergency response situations. Its use is also a critical part of the U.S. Central Command Air Forces (CENTAF) concept of operations for determining health risks in chemical warfare scenarios. BEE personnel are also increasingly using the instrument in environmental and occupational health surveillance, such as for environmental health site assessments, for drinking water surveillance, and in industrial hygiene applications. Similarly, the U.S. EPA has the responsibility to help protect

the public in areas that may be subject to terrorist attack using chemical and biological agents. That responsibility includes identifying and improving methods and equipment for detecting and monitoring for chemical and biological contaminants, tasks for which the HAPSITE could be a useful tool.

The first objective of this evaluation is to conduct performance testing of current HAPSITE capabilities. The performance tests will be conducted by challenging the HAPSITE with chemical warfare agents (CWAs) in air, and with toxic industrial chemicals (TICs) in water using the HAPSITE HSS and the HAPSITE SituProbe Purge and Trap attachment. The performance testing will assess the accuracy, precision, detection limit, and inter-unit comparability of the HAPSITE. A subset of the data will be used to compare the results obtained when using the HSS to those obtained with the SituProbe Purge-and-Trap attachment.

The second objective is to expand the capabilities of the HAPSITE by developing new calibration curves for selected TICs and CWA degradation products in water. All aspects of the evaluation will be performed on multiple HAPSITE instruments and the result compared among the various instruments. For more information about this evaluation, contact Ms. Erin Silvestri (silvestri.erin@epa.gov or 513-569-7619) or Dr. Thomas Kelly (kellyt@battelle.org or 614-424-3495).



Battelle staff member shown working with the HAPSITE®.

### Welcome to TTEP

The U.S. Environmental Protection Agency (EPA) is actively participating in the national homeland security effort by ensuring the protection of the nation's drinking water systems and the safety of the public in buildings and other structures. The National Homeland Security Research Center under EPA's Office of Research and Development has established the Technology Testing and Evaluation Program (TTEP) to assist this effort. TTEP is conducting third-party performance evaluations of commercially available homeland security technologies, incorporating stakeholder guidance and a high degree of quality assurance oversight. Questions about TTEP should be directed to Mr. Eric Koglin (koglin.eric@epa.gov or 702-798-2332).

## Radiological Decontamination Evaluation

EPA conducted the first TTEP radiological decontamination technology evaluation during 2007-2008 on the performance of strippable coating technologies on concrete contaminated with a radionuclide such as might be used in a radiological “dirty bomb.” As a follow-on to this work, EPA plans to evaluate additional radiological decontamination technologies over the next several months. The next radiological decontamination evaluation will follow a very similar experimental design as the first evaluation. The evaluation will include the contamination of concrete test coupons with radioactive cesium-137, the gamma spectroscopy measurement of the activity on the concrete surfaces, application of the decontamination technologies, and then a follow-up measurement of the residual activity remaining on concrete. From this, decontamination factors for

each technology and from each set of test conditions will be determined. The surfaces used during this evaluation will consist of walls approximately 3 m x 3 m and the types of technologies to be tested will include physical removal technologies such as media blasting coupled with vacuum collection. This evaluation is expected to start during the winter of 2008. For more information, contact Mr. John Drake ([drake.john@epa.gov](mailto:drake.john@epa.gov) or 513-569-7164) or Dr. Ryan James ([jamesr@battelle.org](mailto:jamesr@battelle.org) or 614-424-7954).



## Building Decontamination Stakeholder Meeting

The TTEP Building Decontamination Stakeholder Committee met on Tuesday, August 26, at the EPA offices in Research Triangle Park, North Carolina. Ten stakeholders and various EPA and TTEP staff participated in the meeting. Eric Koglin, the TTEP manager, updated the stakeholders on the strategy of EPA and TTEP in the area of Building Decontamination. EPA leaders of various decontamination technology evaluations also provided updates. These evaluations included biological decontamination technologies (Dr. Shawn Ryan and Joe Wood), radiological decontamination technologies (John Drake), and chemical agent decontamination technologies (Dr. Emily Snyder). The committee participated in and added technical insight to the discussion of these technology evaluations and other issues pertaining to the area of decontamination technologies. Specifically, Dr. Snyder led a discussion that helped her prioritize the chemical decontamination technologies that are currently under consideration for testing. Discussions also prioritized technology category areas for future evaluation. Mr. Koglin closed the day by leading a discussion pertaining to the evaluation of chemical agent detection technologies. The stakeholders provided much insight on the availability of possible detection technologies to test and also expressed interest in continuing to pursue testing of emerging detection technologies.

### Attention Vendors: Technology Information Needed

The EPA’s National Homeland Security Research Center (NHSRC) is actively participating in the national efforts to ensure the safety and security of the public. As part of these efforts, the NHSRC is gathering existing technology product and performance information from vendors for existing, new, and emerging technologies for the detection, decontamination, remediation, and sampling of water treatment infrastructure, building materials and structures, outdoor areas, and indoor air for chemical, biological, and radiological warfare

agents. This information will be summarized into 3- to 4-page technical information summaries. These will be based on vendor-provided data and will be offered for use to emergency responders, consequence managers, and water utility operators. Vendors who would like to participate in this voluntary effort should send the name, phone number, and e-mail address of the appropriate contact for additional information regarding their technology to [bcotteptechinfo@battelle.org](mailto:bcotteptechinfo@battelle.org). For

additional information, please contact Ms. Mary Schrock at 614-424-4976.



Example Technical Information Summary

### TTEP Presentation at 2008 EPA Decontamination Workshop

EPA and Battelle coauthored a presentation entitled “Persistence Testing of Highly Pathogenic Avian Influenza (HPAI) on Outdoor Materials” at the 2008 EPA Decontamination Workshop held in Chapel Hill, North Carolina, on September 24, 2008.