

# Universal Biological and Chemical Agent Environmental Sampling Kits for First Responders in Alaska

## Introduction

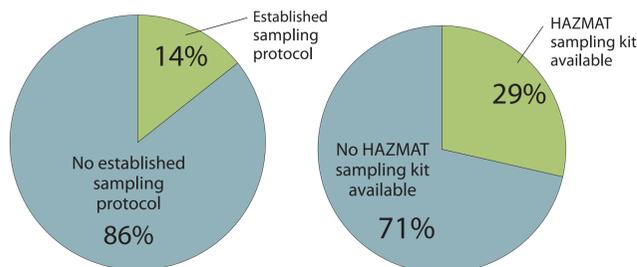
To develop a field sampling protocol and universal collection kit for use by hazardous material (HAZMAT) first responders for collecting samples for biological and chemical terrorism agent testing by the Alaska State Public Health Laboratory (ASPHL).

## Methods

In September 2007, Alaskan HAZMAT first responder groups received training in weapons of mass destruction field sample collection techniques and guidelines. This was the first time that a course of this type was offered in-state. The course provided detailed technical information and hands-on practice in basic screening, survey techniques, and sampling procedures. It emphasized collection of agent-specific samples, in coordination with designated Laboratory Response Network (LRN) reference laboratory requirements.

First responders therefore contacted ASPHL, requesting a protocol to collect and submit samples for biological and chemical agent terrorism testing. Previously, any suspicious sample or materials were submitted in entirety. ASPHL performed sampling for testing.

In October 2007, ASPHL surveyed Statewide HAZMAT Response Team (AK-HAZMAT) working group members to describe existing sampling protocols and sample collection kit materials. The working group is comprised of 28 agencies, including 8 Level A HAZMAT teams. Detailed questions determined whether an agency had an established sampling protocol, HAZMAT sampling kit type/availability, and whether training had been received for infectious, highly toxic, or radioactive material collections.



ASPHL LRN biological and chemical terrorism preparedness and response groups evaluated agent-specific sample and collection material requirements for testing, and consulted with first responder and law enforcement to develop protocols and kits that would satisfy the requirement of all groups.

## Results

ASPHL developed and distributed a universal biological/chemical agent sampling protocol and collection kit to meet the needs of Alaskan HAZMAT first responders and the Alaska LRN Reference Laboratory.

Seven of twenty-eight (25%) organizations involved in AK-HAZMAT working group participated in ASPHL HAZMAT Sampling Survey. Survey data showed that prior to ASPHL development and distribution of an environmental sampling protocol and collection kit for biological and chemical agent testing, only one in seven (14%) HAZMAT first responders had an established sampling protocol and that approximately one in five (29%) had a sampling kit.

ASPHL LRN biological and chemical terrorism preparedness and response groups evaluated agent-specific sample and collection material requirements for testing. They found that depending upon whether a sample was considered either biological or chemical, collection materials types varied. Preferred collection material types for chemical agents are certified-clean glass containers and sterile, synthetic containers for biological agents. Sample container material type, container material test interference limitations, limited sample size, and multi-agent unknown testing circumstances were considered in selecting collection kit components.



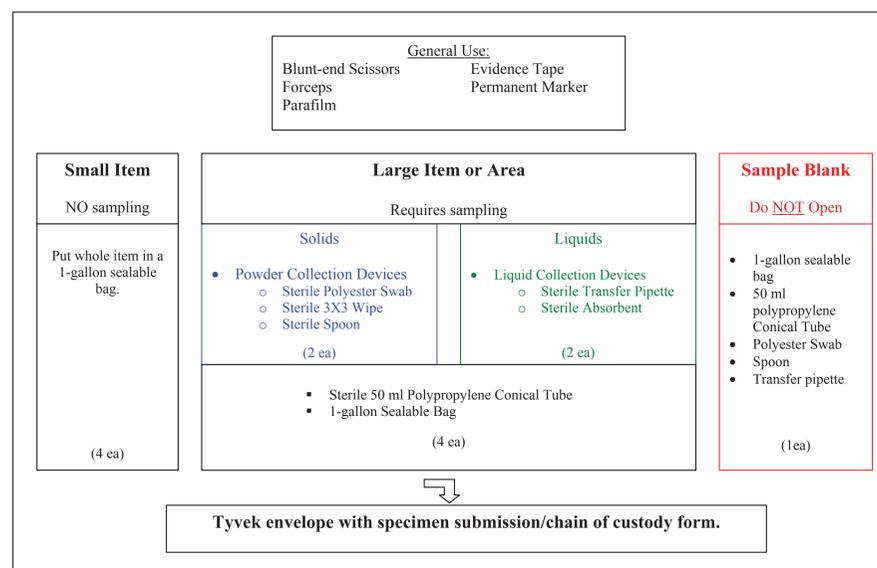
A universal, biological and chemical agent, point source sampling protocol and collection kit materials for small items or large item/areas was developed by ASPHL.

Sampling/collection kit contents include:

sampling protocol, chain of custody form, a primary container bag for submitting small items, a secondary container bag which has a collection tube and sampling implements for collecting material from a large item or area, a bag of unused sampling "blank" materials in case further confirmatory testing is required, and secondary pressure vessels (inner leakproof polybag, Tyvek outer envelope) for shipment of collected materials to laboratory.



HAZMAT Sampling/Collection Kit Materials\*\*



\*\* Responders must provide: Appropriate PPE; fresh 1:10 bleach solution.  
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In January 2008, ASPHL assembled and distributed multiple environmental sampling/collection kits to the eight Level A HAZMAT teams and FBI WMD coordinator in Alaska.

In April 2008, ASPHL provided environmental sampling/collection kit training to first responders attending the 2008 HAZMAT Symposium in Anchorage.

## Conclusion

ASPHL developed, assembled, and delivered environmental sample collection kits to HAZMAT responders that will enable them to implement standardized sampling protocols. This project has benefited Alaska by strengthening the working relationships between first responders and ASPHL.

## Acknowledgements

We would like to thank:

The Alaska Statewide Hazardous Materials Response Team (AK-HAZMAT) Elmendorf Air Force Base Bioenvironmental Engineering Group for sponsoring WMD sampling courses in 2007 and 2008.

The AK-HAZMAT Working Group for providing feedback on the ASPHL environmental sampling protocol and content of sampling kit.

The 103rd Civil Support Team for conducting the WMD sampling exercises during 2008 HAZMAT Symposium.



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