UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 10 2004

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

**OSWER 9345.4-05**

**MEMORANDUM**

**SUBJECT:** Clarifying Cleanup Goals and Identification of New Assessment Tools for Evaluating Asbestos at Superfund Cleanups

**FROM:** Michael B. Cook, Director
Office of Superfund Remediation and Technology Innovation

**TO:** Superfund National Policy Managers, Regions 1-10

## Purpose

The purpose of this memo is twofold. The first purpose is to clarify that Regions should develop risk-based, site-specific action levels to determine if response actions should be taken when materials containing less than 1 percent asbestos (including chrysotile and amphibole asbestos) are found on a site. Regions should not assume that materials containing less than 1 percent asbestos do not pose an unreasonable risk to human health. The second purpose is to outline some activities underway to assist in the evaluation of asbestos risks at Superfund sites.

It is important to note that this memorandum is not a regulation itself, nor does it change or substitute for any regulations. Thus, it does not impose legally binding requirements on EPA, States, or the regulated community. This memorandum does not confer legal rights or impose legal obligations upon any member of the public. Interested parties are free to raise questions and objections about the substance of this memorandum and the appropriateness of the application of this memorandum in a particular situation. EPA and other decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from those described in this memorandum. The use of the word "should" in this document means that something is suggested or recommended, but not required.

## Background

The 1 percent threshold for asbestos-containing materials was first used in the 1973 National Emissions Standards for Hazardous Air Pollutants (NESHAP), where the intent of the threshold was:

*... to ban the use of materials which contain significant quantities of asbestos, but to allow the use of materials which would: (1) contain trace amounts of asbestos which occur in numerous natural substances, and (2) include very small quantities of asbestos (less than 1 percent) added to enhance the material's effectiveness.* (38 FR 8821)

All subsequent EPA regulations and the Asbestos Hazardous Emergency Response Act Statute included this 1 percent threshold. In the 1990 NESHAP revisions, EPA retained the threshold, stating that it was related to the phase contrast microscopy (PCM) analytical method detection limits. The Occupational Safety and Health Administration (OSHA) Standards also defined an asbestos-containing material as a material containing more than 1 percent of asbestos[1] (29 CFR Part 1910.1001 and 29 CFR Part 910.134). The wide use of the 1 percent threshold in regulations may have caused site managers to assume that levels below the threshold did not pose an unreasonable risk to human health. However, it is important to note that the 1 percent threshold concept was related to the limit of detection for the analytical methods available at the time and also to EPA's prioritization of resources on materials containing higher percentages of asbestos.

**Issue**

Currently, many site managers continue to employ the use of the 1 percent threshold to determine if response actions for asbestos should be undertaken. However, based upon scientific discussions and findings reported by EPA and ATSDR from the Libby, Montana Superfund site, as well as EPA's "Peer Consultation Workshop on a Proposed Asbestos Cancer Risk Assessment[2]," there may be confusion regarding the appropriate use of the 1 percent threshold at Superfund sites. This concern was discussed at EPA's "Asbestos Site Evaluation, Communication, and Cleanup Workshop[3]," and it was concluded that the 1 percent threshold for asbestos in soil/debris as an action level may not be protective of human health in all instances of site cleanups. The 1 percent threshold is not risk-based and an accurate exposure value could only be determined through site sampling techniques that generate fibers from soil and bulk samples. Therefore, we recommend the development of risk-based, site-specific action levels to determine if response actions for asbestos in soil/debris should be undertaken.

Recent data from the Libby site and other sites provide evidence that soil/debris containing significantly less than 1 percent asbestos can release unacceptable air concentrations of all types of asbestos fibers (i.e., serpentine/chrysotile and amphibole/tremolite). The most critical determining factors in the level of airborne concentrations are the degree of disturbance, which is associated with the level of activity occurring on the site, and the presence of complete exposure pathways. For example, activities such as excavation or plowing generate large amounts of dust that can result in the generation of airborne fibers that can be inhaled even from a complex soil matrix. To address this evolving issue, OSRTI will be hosting a review of methods for determining conversion of soil to air concentrations in 2004.

**Future Action**

OSRTI has formed three technical working groups to assist in developing guidance and policy relating to risk assessment, field sampling, and analytical methods. These working groups have already contributed to a new toolbox that is located on the EPA Intranet. The location of the tool box is http://intranet.epa.gov/osrtinet/hottopic.htm.

The toolbox will be continually updated as products are developed and will eventually contain information on risk assessments, generic site sampling, and analytical approaches for asbestos cleanup projects. In the interim, numerous site reports that discuss specific concerns and issues from current asbestos site actions are contained in the toolbox. Additionally, to facilitate the development of sampling plans, there are examples of approved site sampling plans with data quality objectives, and a list of asbestos analytical laboratories which have passed an EPA audit.

Our goal is to have the majority of the guidance and policy documents prepared by the end of this year. If you have any questions, please consult with Richard Troast of my staff, who is the lead scientist within OSRTI for asbestos. He can be reached at (703) 603-8805 or by e-mail at: troast.richard@epa.gov.

cc:

Nancy Riveland, Superfund lead Region Coordinator, USEPA Region 9
Eric Steinhaus in Region 8
NARPM Co-Chairs
OSRTI Managers
Robert Springer, Senior Advisor to OSWER AA
Jim Woolford, FFRRO
Debbie Dietrich, OEPPR
Matt Hale, OSW
Cliff Rothenstein, OUST
Linda Garczynski, OBCR
Dave Kling, FFEO
Susan Bromm, OSRE
Earl Salo, OGC
Charles Openchowski, OGC
Joanna Gibson, OSRTI Documents Coordinator

Endnotes:

1. Pursuant to industry comments, the 1994 amendments to the OSHA Standards incorporated a definition of asbestos-containing material that included the 1 percent threshold to be consistent with EPA, and noted that the National Institute for

Occupational Safety and Health (NIOSH) had raised questions whether even one percent may be below the accuracy level for certain microscopic methods. However, OSHA's Hazard Communication Standard requires a Material Safety Data Sheet (MSDS) to be prepared by the manufacturer or importer of a chemical substance, mixture, or product containing more than 0.1 percent of any carcinogen, including asbestos. Additionally, OSHA has recently issued several letters stating that some of the requirements in the OSHA Asbestos Construction Standard (29 CFR 1926.1101) do cover materials containing less than one percent asbestos.

2. USEPA's *Peer Consultation Workshop on a Proposed Asbestos Cancer Risk Assessment* was held in San Francisco, California on February 25-27, 2003. The purpose of the workshop was to discuss the scientific merit of the proposed methodology developed for EPA by Dr. Wayne Berman and Dr. Kenny Crump. The proposed methodology distinguishes carcinogenic potency by asbestos fiber size and asbestos fiber type and advocates use of a new exposure index to characterize carcinogenic risk. Proceedings from this conference can be located at: http://www.epa.gov/superfund/programs/risk/asbestos/index.htm.

3. USEPA's *Asbestos Site Evaluation, Communication and Cleanup Workshop* was held in Keystone, Colorado on September 23-26, 2003. The purpose of the workshop was to provide an opportunity to share lessons learned from working on large sites contaminated with asbestos. The meeting was also used to identify key outstanding technical and policy issues, and to begin to develop a consistent approach to measuring "success", especially short-term impacts and long-term risk reduction. Proceedings from this conference can be located at: http://www.epa.gov/superfund/programs/risk/asbestos/workshop/index.htm.