



Minnesota
Pollution
Control
Agency

Asbestos-containing Waste Materials at Voluntary Investigation and Cleanup Sites

Cleanup/Voluntary Investigation and Cleanup/#1.01/June 2004

Majors and
Remediation
Division

Materials That May Contain Asbestos

- *Insulation*
- *Fireproofing material*
- *Brake pads and linings*
- *Adhesives*
- *Fireproof fabrics*
- *Paint*
- *Filters*
- *Roofing materials*
- *Floor tile*
- *Ceiling tile*
- *Wall fire retardant (sheeting and spray-on)*
- *Wallboard*
- *Building siding*
- *Plastics*
- *Rubber*
- *Furnaces*
- *Boilers*
- *Electrical Equipment*
- *Appliances*
- *Utility pipes and pipe wrap*

This Minnesota Pollution Control Agency (MPCA) fact sheet provides an overview of the procedures for investigating and cleaning up asbestos-containing waste materials at sites in the Voluntary Investigation and Cleanup (VIC) Program.

What is asbestos and why is it harmful?

Asbestos is a fibrous, naturally occurring material commonly found in buried demolition debris and building materials. It continues to be used in some building materials today.

People can be exposed to asbestos primarily through inhaling airborne asbestos fibers. Less likely, but still possible, is exposure through drinking water that contains asbestos.

Asbestos is known to cause cancer in humans. Lung cancer and mesothelioma (cancer of a membrane surrounding the lungs and other organs) can be caused by inhalation of asbestos. Asbestos fibers can cause scarring of the lungs leading to a hardening of the lungs known as asbestosis. Drinking water containing asbestos may be a factor in the development of cancer of the esophagus, stomach, and intestines.

The best way to reduce exposure to asbestos is to keep asbestos fibers contained, so they cannot become airborne or reach surface water or ground water used to supply drinking water.

Both federal and state laws regulate the use of asbestos and how it is handled during cleanups involving human health exposure risks. The Minnesota Department of Health (MDH) enforces regulations related to existing buildings and provides licensing and certification of asbestos abatement companies and technicians. The Minnesota Occupational Safety and Health Administration staff becomes involved when worker safety issues exist.

The MPCA enforces the federal National Emissions Standard for Hazardous Air Pollutants regulations that cover activities which may cause a release of asbestos to the environment. The MPCA's Asbestos Program enforces disposal regulations for asbestos-containing materials. Specifically, the program regulates building demolition, building renovation, and buried asbestos-containing waste materials. The MPCA's VIC Program reviews the investigation and



Licensed contractors removing asbestos waste material from a site near the University of Minnesota in Minneapolis.



cleanup work performed at sites that have buried asbestos and at sites with building demolition or renovation activity, in order to provide liability assurances.

Building Demolition

Regulations for building demolition are enforced by the MDH and the MPCA asbestos compliance programs. The VIC Program becomes involved in building demolition when the building contains hazardous substances such as asbestos and a voluntary party wishes to obtain liability assurances related to the potential release of these hazardous substances to the environment.

Prior to demolition, the voluntary party hires a licensed, asbestos abatement company to conduct a building survey to determine if potentially hazardous building materials are present. In addition to identifying asbestos-containing materials, the building survey is designed to identify other hazardous materials, such as thermostats and light bulbs containing mercury. Typically, the next step is for all hazardous materials, including the asbestos-containing materials, to be removed and properly disposed of by the abatement company. Ten working days prior to demolition, a demolition notice must be submitted with the asbestos survey report to the MPCA asbestos compliance program. MPCA inspectors conduct a building walk-through. Often, the walk-through is conducted with the VIC Program staff, who may also review the asbestos survey report. In some situations, soil sampling may be needed to determine if an asbestos release occurred at the property.

Buried Asbestos Materials

Historical Investigations

The initial investigation phase is called a "Phase I Investigation" or historical investigation. This investigation includes a review of historical documents relating to the environmental condition of a property. In most situations, the Phase I investigation is conducted by a professional environmental consultant with input from current and past property owners, and is reviewed by VIC Program staff.

Normally, this investigation phase provides clues to the possible existence of buried asbestos-containing waste materials at the property. One of the most common sources of asbestos-containing waste materials is the historical widespread practice of demolishing buildings and burying most of the materials in-place. Old utility

lines made with cement may contain asbestos. This information might be shown in old city records, building plans, or fire insurance maps. Records of buried dumps or fill material on a property also are common indications that asbestos may be present.

Field Investigations

The second investigation phase is the Phase II or field investigation. Because the field work involves the movement of soil and waste that may be contaminated, it is important that this investigation phase be conducted by a professional environmental consultant trained in health and safety concerns and environmental regulations. Environmental consultants and contractors working with MPCA-approved plans can effectively prevent mishandling of asbestos-containing waste and avoid spreading contaminated soil or waste to clean areas.

Information from the Phase I Investigation is used to determine what areas of the property will be looked at more closely for possible environmental contamination. This information is also used to determine if a certified technician should be present to monitor for asbestos. Field investigations for asbestos-containing waste materials usually involve excavation of test pits to determine if debris is buried at the property and if the debris is likely to contain asbestos.

Debris samples are submitted to a laboratory for analysis. The lab report indicates if asbestos was found, the percentage of asbestos that is present, and the type of asbestos present. Materials containing asbestos may be friable (materials with loose asbestos fibers) or non-friable (asbestos fibers bound in a matrix). The MPCA considers non-friable asbestos materials to be potentially friable, because of the crushing and abrading of these materials during demolition and burial as well as the degradation of the matrix material over time.

Once asbestos is found, contact the State Duty Officer at (651) 649-5451 or (800) 422-0798 and MPCA Asbestos Program at (651) 297-5518. They need to be notified according to the state notification of releases law (Minn. Stat. §115.061).

Buried Asbestos Cleanups

Once a property has been investigated thoroughly enough to estimate the location and volume of asbestos material, a feasibility study is conducted to determine what cleanup



activities will be conducted. The feasibility study provides a review of cleanup options in order to make the best decision based on current and future property use, possible long- and short-term health effects from exposed asbestos, cleanup cost, and technical feasibility. The feasibility study takes into consideration any other environmental contaminants discovered at the property and any planned construction activities for the property. Input from the community may be requested by the MPCA at this time.

After the final cleanup option has been chosen, a Response Action Plan is prepared detailing the cleanup activities. The MPCA reviews and approves the Response Action Plan prior to the start of the cleanup activities. When asbestos-containing waste materials are excavated or exposed, the Response Action Plan includes a separate Asbestos Emission Control Plan which is reviewed by the MPCA Asbestos Program.

Cleanup Options

Generally, two types of cleanups are conducted at properties with buried asbestos materials: engineering controls with land use restrictions, and removal of the asbestos materials with disposal at a landfill. The MPCA policy regarding buried asbestos is to avoid leaving buried materials in place and, whenever reasonable, to remove and dispose of asbestos materials at a landfill. This practice reduces the number of inactive asbestos waste disposal sites, properties that may require cleanup in the future, and properties with restrictions on land use.

Minnesota landfills permitted to accept asbestos-containing waste materials dispose of these materials in certain cells, which are documented for future generations. Due to the special disposal requirements for asbestos, the disposal cost for asbestos-containing waste materials is more expensive than municipal solid waste. For any excavation of asbestos-containing waste materials, a certified technician from a licensed asbestos abatement company is required to oversee the excavation and disposal.

Engineering controls typically involve leaving the buried asbestos-containing materials in-place and covering them with a clean soil cover. In some situations, geotextile fabrics or other landscaping measures are used to reduce erosion and serve as a distinctive marker for the asbestos-containing waste materials. In areas covered with a building or paved area, a minimum of two feet of clean soil is used for the cover to protect against accidental excavation into the soil with asbestos debris. In areas left

as open green space, such as parks and landscaped areas, a minimum of four feet of clean soil is typical, with a thicker cover required when the property is sloped and erosion may be a problem.

When asbestos-containing waste materials remain at the property, an institutional control, in the form of an Affidavit or Restrictive Covenant is required. The institutional control is filed with the property deed. The Restrictive Covenant limits the use of the property and requires MPCA approval for excavation into the area where asbestos materials are present. The Affidavit serves to notify future owners of the presence and location of contaminated media. For properties with large volumes of asbestos-containing materials, a general contingency plan for any future excavation work may accompany the institutional control.

Construction Contingency Plans

Contingency plans are commonly used for construction projects, for which the potential to find buried asbestos-containing wastes exists. The contingency plans are reviewed by the VIC Program staff prior to the start of excavation activities. These plans describe measures that will be taken to segregate and stockpile suspect materials that may contain asbestos or other hazardous materials. Compliance with a contingency plan usually allows construction to continue while the suspect materials are investigated and reported.

For More Information on the Asbestos Program and VIC Program

To access the MPCA Asbestos Program fact Sheet titled "Asbestos Guidance on Excavation Projects," go to the Web site below:

<http://www.pca.state.mn.us/publications/w-sw4-03.pdf>

You can also call the Asbestos Hotline at (651) 297-8685. For guidance documents from the VIC Program, go to the VIC Program Web site at:

<http://www.pca.state.mn.us/cleanup/vic-guidedoc.html>

The new VIC Program Guidance Document # 9: Guidance for Investigating and Remediating Asbestos Containing Materials is now available on the Web site above.

The MPCA main Web site is: <http://www.pca.state.mn.us>