

## Environmental Health Information

# Vermiculite Processing Operations in Northeast Minneapolis

June 2003

### **Vermiculite, Zonolite, “Stoner Rock”**

Vermiculite is a naturally occurring mineral used in insulation (brand name, “Zonolite”), construction, and gardening products. From 1924 -1990, most of the world’s supply of raw vermiculite ore came from Libby, Montana. This ore is now known to contain a group of mineral fibers called “Libby Asbestos.”

Ore from the Libby mine was shipped to many processing plants around the country. From 1938 to 1989, ore was processed at the Western Mineral Products plant located at 1720 Madison St. NE in Minneapolis.

At this plant, raw vermiculite was heated until the moisture trapped in the ore caused it to pop like popcorn. After going through this “exfoliation” process, the vermiculite was light and porous, making it suitable for insulation.

Some of the ore was left behind after it was heated. This waste material was known as “crush rock” or “stoner rock.” It was left in piles outside the plant and was free to anyone. We now know that this waste rock was contaminated with asbestos.

In NE Minneapolis, people used the waste rock in their yards, gardens, driveways, barbeques, and other construction projects. Children from the neighborhood also played on piles of “crush rock.”

### **Asbestos and Health**

Asbestos is a mineral fiber that is very toxic if inhaled. It has been known for many years that workers exposed to asbestos suffer from

asbestos-related diseases. These diseases generally are not diagnosed until 20-30 years after coming into contact with (exposure to) asbestos.

Asbestos exposure can cause a type of permanent lung damage known as asbestosis, which causes shortness of breath and increases the risk of serious lung infections. Asbestos can also cause lung cancer, and a rare type of cancer known as mesothelioma, which affects the lining around the lungs and abdomen.

One of the most common effects seen on chest x-rays are changes in the lining of the lungs, called pleural plaques and pleural thickening. In some cases, these changes may cause difficulty breathing.

Individual health risk depends on many factors, including how much and how long a person is exposed, and their age, occupation, smoking and health history. Residents concerned about health problems associated with asbestos exposure should consult their physician.

### **The Northeast Minneapolis Community Vermiculite Investigation (NMCVI)**

Health studies have shown an increase in asbestos-related disease among people who have worked in vermiculite mines and processing facilities. There have also been reports of asbestos-related disease among family member of workers, as well as residents of the surrounding community.

To learn more about exposures to the community and possible health risks, MDH

investigators have interviewed residents living near the site. Former residents and owners of contaminated properties were also interviewed. This information, together with additional studies from Libby, Montana, has helped to identify the extent of asbestos exposure to workers and the community.

In the spring of 2003, NMCVI participants received letters describing ways that people were exposed, and giving health recommendations.

### **Ways People Were Exposed**

◆ Workers had the highest exposure. Sampling data show that some workers were exposed to asbestos levels that exceed current workplace health standards.

◆ People who lived with a worker may have been exposed. Workers may have carried asbestos dust home on their clothing. A household member who routinely handled or cleaned the dusty clothing would be exposed to asbestos.

◆ People who had direct contact with the waste were probably exposed to asbestos fibers. Samples show that the waste contains up to 10% Libby asbestos. Activities, such as playing on the piles or shoveling and moving the waste rock, cause asbestos fibers to be released into the air.

◆ People who install, remove or disturb vermiculite insulation in the home may be exposed. The insulation product has very low or trace levels of asbestos (less than 1%). However, tests show that activities that disturb the insulation can produce measurable levels of fibers in the air.

◆ People living within 1-2 blocks of the plant while the facility was operating may have been exposed, especially before 1972 when pollution control equipment was installed. A computer simulation suggests that fiber levels

in the immediate area were higher than normal urban levels.

◆ People living on a property with contamination in the driveway or yard may have been exposed to trace amounts of asbestos. Asbestos levels found in driveways and yards were very low. Gardening and landscaping activities generate very low levels of asbestos fibers.

### **Clean up and Investigation**

Clean-up of the former Western Mineral Products site was completed in November 2001. Since the fall of 2000, the US EPA has been removing visible Libby asbestos in yards, driveways and alleys at no cost to the homeowner. About 260 residential properties have been identified for clean-up.

### **In the Future**

Care should be taken to prevent future exposures: 1) While most of the visible waste has been removed, there will always be the possibility of it being uncovered during construction, road improvements or landscaping. 2) Vermiculite insulation indoors may release fibers if disturbed. The best advice is to leave it alone or, if necessary, have it removed by a licensed professional.

There is still much to be learned about asbestos-related disease and ways to treat it. MDH will continue to develop resource materials for the health care providers. MDH will use the results of the NMCVI to determine if additional health follow-up studies are needed.

For more information, call:

Tannie Eshenaur – 651.201.4897

Or, visit our website at  
<[www.health.state.mn.us](http://www.health.state.mn.us)>

This information sheet was produced in cooperation with the U.S. Agency for Toxic Substances and Disease Registry.