



Health Consultation Summary

Former Zonolite/W.R. Grace Facility—St. Louis

September 2006

The Missouri Department of Health and Senior Services (DHSS), in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR), evaluated the former Zonolite/W.R. Grace Facility – St. Louis as a possible health hazard to workers and the community due to the past release of asbestos. Workers at the former Zonolite/W.R. Grace vermiculite processing plant in St. Louis, operating from the late 1940s to 1988, were exposed to asbestos from the processing and handling of asbestos-contaminated vermiculite and waste rock. This was the primary finding of the investigation that was documented in a report called a public health consultation. This fact sheet contains highlights, conclusions and recommendations from the report.

Background

The former Zonolite/W.R. Grace processing facility, located at 1705 Sulphur Avenue in St. Louis, was one of many similar plants nation-wide that received asbestos-contaminated vermiculite ore from Libby, Montana. Processing called exfoliation involved heating pieces of vermiculite ore until it expanded or “popped”. The processed material was then used to manufacture attic insulation or lightweight concrete aggregate. Unpopped-processed vermiculite ore was discarded as waste rock. During its operation, more than 139,460 tons of Libby vermiculite were sent to the facility.

After the St. Louis facility ceased operation, the processing equipment was removed and a decontamination wash-down was completed inside the building. The facility is located in a mix of industrial and well-established residential areas and is currently used for other commercial purposes. The nearest residential area is less than a quarter of a mile from the

site and the former Gratiot Grade School is within one-tenth of a mile. Census data indicates that in 1990 approximately 13,609 people lived within one mile of the facility.

While the facility was operating **during the late 1940’s to 1988, employees were exposed to asbestos** from the processing and handling of asbestos-contaminated vermiculite and waste rock. **Household contacts of workers could have been exposed** to asbestos from contamination brought home on the clothing and hair

of the workers. **Community members, the students and faculty of the Gratiot Grade School, and children that played at the facility on raw materials and waste rock could also have been exposed to unknown levels of asbestos.** Very little information is available to assess community exposure or to quantify the magnitude, frequency, or duration of any exposure.

Presently, workers at the facility and the community are not being exposed to asbestos from the site. The primary exposure pathways that



Former Zonolite/W.R. Grace Facility—St. Louis, Missouri
Photograph taken from Manchester Road under the Hampton Avenue bridge looking southeast at the Former Zonolite Facility, 2002

existed while the plant was operating, such as plant emissions and contact with piles of vermiculite and waste rock, have been eliminated.

In the past, workers or the community may have taken waste rock from the site to use as fill material, driveway surfacing, or as a soil additive. Exposed waste rock presents a potential way people may be exposed, but not enough information is available to determine whether waste rock was removed from the site and the amount of exposure that occurred or could occur.

Inhalation of asbestos fibers is the primary way asbestos can enter the body. Children who breathed in asbestos are particularly vulnerable because asbestos-related health effects have a long latency period, and children who were exposed have more years to develop asbestos-related health problems.

Exposure to asbestos fibers does not necessarily mean an individual will get sick. The concentration, duration, and frequency of exposure, along with personal risk factors such as smoking, history of lung disease, and genetic susceptibility all contribute to the health risk for an exposed individual. The mineralogy and size of the asbestos fiber involved in the exposure are also important in determining the likelihood and the nature of potential health impacts.

Because of existing data gaps and limitations in the science

related to the type of asbestos at these sites, the risk of current and future impacts for the exposed populations is difficult to determine.

In an effort to establish if asbestos exposure had caused an increase in related deaths, DHSS conducted a health statistics review of death certificate information from communities around the site for the years 1979 to 1998. Though this type of data has limitations, the number of asbestos-related disease deaths was not higher when compared to national data.

Conclusions

The following conclusions have been made:

1. Former workers at the Zonolite/W.R. Grace facility in St. Louis from approximately the late 1940s to 1988 were exposed to airborne levels of Libby asbestos above current occupational standards.

Presently, workers at the facility and the community are not being exposed to asbestos from the site.

Repeated exposure to asbestos as a result of working in and around the facility during active exfoliation of asbestos-contaminated Libby vermiculite increases their risk of contracting an asbestos-related disease and represents a *past public health hazard*.

2. Household contacts of former workers could potentially have been exposed to Libby asbestos from contamination brought home on the clothing and hair of the workers from approximately the late 1940s to 1988. This past potential exposure of household contacts represents an *indeterminate public health hazard*.
3. The community around the facility and the students and faculty at the Gratiot Grade School may have been exposed to Libby asbestos fibers from approximately the late 1940s to 1988 when Libby vermiculite was exfoliated. Exposure may have occurred by disturbing or playing in asbestos-contaminated materials, from plant emissions, and waste rock brought home for personal use. Residents could also have been exposed when installing or disturbing asbestos-contaminated vermiculite insulation in their homes. Not enough information is available to determine how often or to what concentrations of airborne Libby asbestos they may have been or are being exposed to. As previously discussed, because of the long latency period of asbestos related diseases, those who were exposed as children could be at a higher risk of asbestos-related diseases. These exposure pathways represent an *indeterminate public health hazard*.

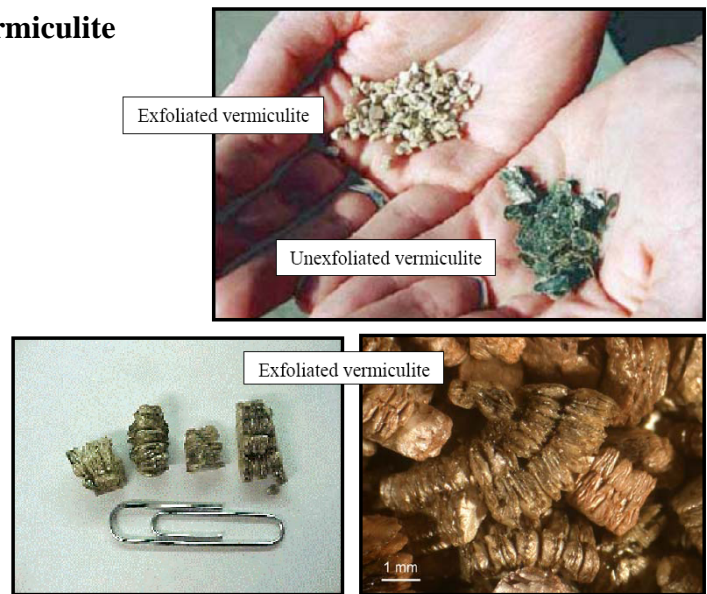
4. The facility no longer processes vermiculite from Libby, Montana; therefore, current and future exposure routes to Libby asbestos from air emissions have been eliminated for workers and the community. Limited data on past building cleanup and confirmation sampling indicate that current building occupants are unlikely to be exposed to hazardous levels of Libby asbestos. A small amount of unprocessed vermiculite and asbestos remains on site in partially grass-covered soil next to the former silo area; however, exposure is not expected to occur. **No waste piles of vermiculite or waste rock are present on site and any waste rock that was used for fill on site or in close proximity is covered with asphalt or soil.** This asbestos contaminated waste rock would only be a health hazard if the waste rock were disturbed. For these reasons, the site has been designated a *no apparent public health hazard for the present and future.*

5. **Use of waste rock in the community is not expected to be a major concern,** but the possibility does exist that it was used in the community. Because it is not known if waste rock was used in the community or not, these pathways have been designated an *indeterminate public health hazard.*

Recommendations

Unfortunately, little can be done about past exposure and possible health effects relating to exposure at this site. Through the health consultation, DHSS/ATSDR intends to provide information about the site and possible past exposures. DHSS/ATSDR will also offer health education to the exposed and potentially exposed populations. Former workers and individuals who feel they were exposed to asbestos from the site should either inform their regular physician or a physician with expertise in asbestos-related lung disease.

Vermiculite



Pictures Courtesy of ATSDR

Waste Rock

Waste rock from vermiculite exfoliation can look like other types of rock. The only way this waste rock could be present in your yard is if someone brought it there from a vermiculite processing plant in the past. This waste rock often contains visible "bundles" or blocky fragments of asbestos that are grayish-white and about the size of a grain of rice.



Contact Information

If you or your doctor wants more information about the site investigation or wants to ask specific questions, contact Gale Carlson or Arthur Busch at the Missouri Department of Health and Senior Services, toll-free (866) 628-9891 or (573) 751-6102, or by email at arthur.busch@dhss.mo.gov.