

Health Consultation

FORMER W.R. GRACE/ZONOLITE CO. FACILITY
INVESTIGATION OF NEARBY PLAY AREA

12TH STREET AND FACTORY AVENUE
ELLWOOD CITY, LAWRENCE COUNTY, PENNSYLVANIA

EPA FACILITY ID: PAN000305592

SEPTEMBER 30, 2006

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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Prepared by:

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Background

Zonolite, and subsequently W.R. Grace, operated an exfoliation facility at 12th Street and Factory Avenue in Ellwood City, Lawrence County, Pennsylvania, from 1954–1969. This plant received vermiculite from the W.R. Grace mine in Libby, Montana. The vermiculite was contaminated with naturally occurring asbestos fibers. Libby vermiculite was found to contain several types of asbestos fibers, including the amphibole asbestos varieties tremolite and the related fibrous asbestiform minerals winchite, richterite, and ferro-edenite [1].

In September of 2005, the Agency for Toxic Substances and Disease Registry (ATSDR) published a health consultation as part of Phase I of the National Asbestos Exposure Review (NAER) project [2]. ATSDR also mailed fact sheets to nearby residents and businesses and published a press release describing its findings to alert the community. Subsequently, ATSDR was contacted by former residents who described a playground that was located near the plant during its operation. According to the residents, children may have had contact with vermiculite waste materials that were piled near the playground. Since this facility received vermiculite from Libby, Montana, it was possible that some of the waste vermiculite material was contaminated with amphibole asbestos. ATSDR was previously unaware of the playground or the exposure to children when it published the 2005 health consultation. This latest health consultation documents ATSDR's subsequent investigation into this issue and revises the recommendations and public health action plan accordingly.

Site Information

Details about the plant's location, site demographics, and what ATSDR was able to discover about the plant's history are presented in the September 2005 health consultation [2]. In that document, ATSDR concluded the following:

1. From 1954 to 1969, workers at the former W.R. Grace/Zonolite plant in Ellwood City were likely exposed to hazardous levels of Libby asbestos. Household contacts of those workers could also have been exposed to hazardous levels of Libby asbestos in the past.
2. There is not enough information available to determine the extent to which people living in the neighborhood of the plant from 1954 to 1969 were exposed to Libby asbestos from the ambient air pathway, the on-site soil pathway, the residential indoor pathway, the residential outdoor pathway, or the waste piles pathway.
3. ATSDR considers worker exposures since 1969 to be no apparent public health hazard. On the basis of the limited data available, it is unlikely that people working inside the former exfoliation plant since 1969 were exposed to hazardous levels of Libby asbestos.

4. Trace Libby asbestos contamination present around the plant could create an exposure to asbestos if disturbed. Currently, adverse health effects are unlikely because current workers or other people are not frequently in the areas that are contaminated. Future exposure is possible if these areas become used more often and action is not taken to contain the contamination. This exposure pathway is an indeterminate public health hazard.

Current Issues

ATSDR, U.S. Environmental Protection Agency (EPA), and Pennsylvania Department of Health (PADOH) staff members visited Ellwood City on March 13 through the 15, 2006. Staff members met with the Ellwood City council. Some of the council members remembered playing baseball at a playfield near the plant. City council members were concerned about the potential for fibers to be released from the building at the site if it were to be demolished or if contaminated soils were to be disturbed. Additionally, they were concerned about contamination being present in the laydown yard for electrical equipment that the city owns to the east of the site.

ATSDR held a public availability session on the evening of March 14, 2006. Approximately 50 to 60 persons attended this session, of which 34 community members signed in for the session. Seven of the community members identified themselves as former workers at the plant, and seven community members claimed to have played in the playground near the site. ATSDR presented information about the site. PADOH presented results of its review of cancer incidence for ZIP codes surrounding the New Castle and Ellwood City plants. As a result of the public availability session, ATSDR and EPA's contractor also met with some former workers and community members on March 15, 2006.

Community members confirmed that there was a playground next to the plant, and that some of them did have contact with vermiculite waste material [3–5]. They called play area the “West End Playground.” Community members had differing estimates of the number of children who typically used the West End Playground. Those ranged from 50 to 100 children who may have gathered daily to play games such as baseball and football, or use sandboxes, or play on swings, seesaws, or other playground equipment. Children played in and around the waste vermiculite piles at the site and slid down the adjacent embankments where vermiculite waste was reportedly dumped when the plant was operating. Community members reported that the shiny vermiculite material covered the playground area. They said the plant operations emitted a lot of dust, which is consistent with documentation of community air complaints discussed in ATSDR's 2005 health consultation for this site. One community member who had played in the playground stated that residents may have taken vermiculite waste material to other areas, although this resident could not identify a specific location or address.

Former workers described using front end loaders to move the vermiculite from box cars into storage bins inside of the plant. There would have to be some manual shoveling of the vermiculite from the box cars to get the ramp into position for the front end loader.

Waste products from the exfoliation process (called “clinkers” by former plant workers) were allegedly deposited in a pile on site. Workers would then use a front end loader to push the material down the slope towards the railroad tracks to the north and east of the site. Some waste may have been pushed towards the southeast sector of the site, also.

Vermiculite appears to be in a berm along the edge of the slope towards the railroad track, starting at the east end of the former exfoliation building and extending towards the north (Photos 1 and 2). Currently, a fraternal lodge and an asphalt parking lot cover about half of the former playground area (Photo 3). Dumping of other residential waste and construction debris appears to have occurred on site, with some debris being deposited on the slope leading to the railroad track. On the slope west of the lodge, staff members observed vermiculite waste materials on the slope between the property and the nearest residential home (Photo 4). Staff members observed an all terrain vehicle (ATV) being driven along the railroad bed area, although it is unclear if vermiculite waste material is in this area. Due to the rainy conditions and high slope, ATSDR staff did not access the area where ATVs had been driven. On the basis of reports from past employees and from a visual inspection of the southern boundary of the site, it does not appear that vermiculite waste rock products were placed near the current laydown yard.

Current exposure to waste vermiculite at this site appears to be limited by several factors. A paved parking lot and building now cover much of the former playground. Therefore, any residual asbestos in the covered area can not be easily disturbed. The slope and berm where vermiculite was seen is heavily vegetated. The steepness of the slope limits access. Unless site conditions change remarkably, there is limited potential for asbestos exposure to community members.

Photos

Photo 1 – Vermiculite waste rock in berm



Photo 2 – Berm extending to the north of former exfoliation building



Photo 3 – Fraternal lodge and parking lot over former playground area



Photo 4 – Slope west of fraternal lodge



Conclusions

In addition to the conclusions made in the September 2005 health consultation, ATSDR concludes the following:

- Persons who contacted vermiculite waste products in or near the West End Playground were likely to have been exposed to Libby asbestos. This exposure, depending on the duration, intensity, and frequency, may increase these residents' risk of contracting asbestos related diseases.
- Currently, much of the site is covered by gravel, asphalt, or plants. The area of contamination does not seem to extend to the electrical laydown yard to the south of the site. The site itself appears unlikely to present an immediate exposure hazard to the community. However, vermiculite waste material may be present in a nearby residential yard and may present more of an exposure risk.
- At least one person reported that vermiculite waste had been removed from the site for home use. However, the resident did not know the specific address or location to which material had been taken. Therefore, ATSDR can not confirm at this time that waste rock is present at other locations in the community.

Public Health Recommendations

Because of the additional site information gathered, ATSDR recommends the following additional steps to protect public health:

Communications and Public Health Education Recommendations

- Continue to provide health education materials about asbestos exposure, health effects, and health protective actions people can take if they were exposed to asbestos.
- Education and professional development on asbestos-related topics should be arranged for area health care providers.

Science Recommendations

- Sampling should be performed to further characterize the extent of contamination at the site and the neighboring residential yard. If warranted, remediation, removal, or institutional controls should be implemented to prevent future exposure to Libby asbestos.
- If specific reports of waste vermiculite material being removed from the site for residential use are received, they should be investigated by EPA or the local environmental agency.

Public Health Action Plan

The following additional action items are planned in response to the new site information:

Communication and Health Education

- ATSDR will work cooperatively with PADOH to deliver continuing medical education programs to area physicians on asbestos exposure and health effects.
- ATSDR will develop an expanded mailing list for the area so more community members can receive information and updates about asbestos exposure, health effects, and health protective actions they can take if they were exposed to asbestos.
- In coordination with PADOH and EPA, ATSDR community involvement and communications staff will develop a site-specific communications plan that will address community health concerns and continue to assist in the ongoing investigation of this site.

Science

- ATSDR will work cooperatively with EPA and provide technical support for site assessment and any removal or remedial action that is taken, as needed.

Site Team

Authors and collaborators

James T. Durant, M.S.P.H., C.I.H.
Environmental Health Scientist, Exposure Investigation Team
Exposure Investigations and Consultation Branch (EICB)
Division of Health Assessment and Consultation (DHAC)
Agency for Toxic Substances and Disease Registry (ATSDR)

Barbara Anderson M.S., P.E.
Environmental Health Scientist, Consultation Team
EICB, DHAC, ATSDR

Maria Teran-Maciver
Health Communications Specialist
Health Promotion and Community Involvement Branch, DHAC, ATSDR

Charles Green
Health Communications Specialist
Office of Communications, CDC/NCEH/ATSDR

Mark White, MD MPH
Health Assessment Section Leader, Pennsylvania Department of Health (PADOH)

Barbara Allerton, RN MPH
Nursing Services Consultant, PADOH

Michelle Hughes
Environmental Health Specialist, Northwest District Office, PADOH

Regional Representative

Lora Werner
Environmental Health Specialist
Office of Regional Operations, Region 3

Reviewed by

Susan Moore
Branch Chief, EICB
EICB, DHAC, ATSDR

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