

Letter Health Consultation

**Evaluation of Davidson Mill Asbestos Site Soil Sampling Results and
Public Health Implications**

DAVIDSON MILL ASBESTOS SITE

MECKLENBURG COUNTY, NORTH CAROLINA

EPA FACILITY ID: NCN000405052

Prepared by:

North Carolina Department of Health and Human Services

JUNE 23, 2017

**Prepared under Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Community Health Investigations
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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LETTER HEALTH CONSULTATION

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**North Carolina Department of Health and Human Services
Division of Public Health**

Roy Cooper
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Division Director

June 23, 2017

Mr. Jordan Garrard
Federal On Scene Coordinator
US Environmental Protection Agency Region 4
61 Forsyth Street
Atlanta, Georgia, 30303
Garrard.jordan@epa.gov

Re: Davidson Mill Asbestos (Davidson Depot) Site; Evaluation of soil sampling results and public health implications

Dear Mr. Garrard,

The North Carolina Division of Public Health's (DPH) Health Assessment, Consultation and Education (HACE) program was contacted in September 2016 by the North Carolina Department of Environmental Quality (DEQ) regarding the Davidson Mill asbestos site located at 301 Depot Street in Davidson, NC. At the same time, DEQ contacted the U.S. EPA to initiate an investigation to determine if residential yards near the site were contaminated with asbestos waste material. DEQ and EPA requested DPH involvement to assess potential public health concerns related to asbestos fiber release from the Davidson Mill site and nearby residential soil containing asbestos.

Small amounts of asbestos fibers in soil can be released into the air when the soil is sufficiently disturbed [EPA 2008, EPA 2014]. Once asbestos fibers are released into the air, they can be inhaled, posing a potential health hazard. EPA sampling determined that some residences near the site had asbestos levels up to 1% in surface soil. DPH cannot estimate the potential risk for adverse health effects due to asbestos from the Davidson Mill site or nearby yards because of a lack of activity based air sampling. EPA's proposed actions to remove asbestos-containing soil (>0.25% or soil with visible asbestos) will greatly reduce potential harmful exposures to

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asbestos. DPH supports the EPA's efforts to remove asbestos-contaminated soil near the Davidson Mill asbestos site to reduce the risk of exposure and subsequent adverse health effects such as cancer.

DPH recommends that:

- EPA ensure that asbestos in residential soil does not exceed 0.25% of soil.
- EPA continue to sample areas in the community identified by residents as probable sites of contamination. It is recommended that response to data collected in the future is subject to the same action that is currently implemented (i.e. ensure that asbestos in residential soil does not exceed 0.25% of soil. Trace (<0.25%) samples may be further analyzed by the fluidized bed asbestos segregator (FBAS) approach to add evidence determining need for removal).
- DEQ work with the local government to implement institutional controls, such as deed restrictions requiring approval to dig on affected properties in the future.
- local utilities act with proper authorizations when conducting repair, maintenance, or replacement activities in the affected areas. If disturbing asbestos these individuals will need to be trained to meet the OSHA Asbestos in Construction Standard 1926.1101 requirements for Class Three.
- residents living at properties with known asbestos containing materials in their yards avoid disturbing their soil until EPA removal is complete. This includes avoiding mowing the grass, gardening, or leaf blowing.
- affected residents who are concerned about their health should contact their health care provider to discuss their concerns.

DPH will work with EPA and DEQ to ensure that public health is protected before, during, and after any removal or redevelopment at or near the site by reviewing plans for sampling, remediation, and redevelopment, and evaluating environmental data as it is collected. DPH will also provide outreach and education to community members about the health effects associated with asbestos exposure. The following information provides a more detailed explanation of how we evaluated public health implications at the Davidson Mill asbestos site.

Background and Statement of Issues

The Davidson Mill asbestos site is located at 301 Depot Street in Davidson, NC. The property was developed around 1890 and was used as a mill and warehouse for a cotton mill. Following this, the Carolina Asbestos Company manufactured asbestos shingles on the property and was likely operational from the 1930s until about 1960. During that time, asbestos waste from plant operations was buried in a landfill at the back of the property. In 1984, the county instructed the property owner to address the landfill area, which involved covering the landfill property with two feet of clay and planting and maintaining grass to seal any buried material. In September

2016, in response to community concerns, DEQ requested that the EPA perform an assessment of the area. DEQ also notified DPH due to public health concerns from potential past, present, and future exposure to asbestos from the site. Nearby residents expressed two primary concerns: 1) that the redevelopment of the Davidson Mill property would release asbestos fibers into the air, causing a health hazard; and 2) that their yards may contain asbestos in surface soils and remain unassessed (Attachment A, Photos 2 and 3).

During the initial EPA response, EPA, DEQ, and DPH staff observed asbestos had washed out from the embankment of the onsite landfill into a street and storm drain near the corner of Sloan Street and Eden Street (Attachment A, Photo 1). Upon further inspection, several erosion spots on the embankment were observed. The current property owners have since worked with DEQ and a contractor to stabilize and cover the embankment to prevent further asbestos release from the site (Attachment A, Photo 4). EPA started sampling nearby residential yards in November 2016. This letter is focused on the off-site sampling and exposure pathways.

Discussion

Ambient Air Sampling

Ambient air samples were collected at 5 locations in the neighborhood near the site during three windy days in November 2016 and during the recent embankment response work. No asbestos was detected in any ambient air samples collected. This does not mean that asbestos is never present in air, as its presence may be affected by a number of factors including wind speed, surface soil moisture content, and ground cover, but there is no evidence that it is a significant exposure route.

Soil Samples

For human health evaluations, DPH evaluated surface soil samples. At the Davidson Mill asbestos site, 159 surface soil samples were collected at a depth of 0-3" from 70 nearby properties. Asbestos was detected in 33 samples ranging from trace amounts (<0.25%) to 2%. All soil samples identified as containing asbestos were determined to be chrysotile asbestos. Fifteen samples that had trace amounts of asbestos were sent for further analysis using the Fluidized Bed Asbestos Segregator (FBAS) method. The FBAS method is a recent method used to measure the asbestos fibers that can potentially be released from soil. Air is blown through soil as it is agitated, and the air is passed through a filter to collect any asbestos. The filters are then analyzed by transmission electron microscopy (TEM) using the Modified ISO-10312 method that records phase contrast microscopy equivalent (PCME) asbestos structures, which correspond to the size of asbestos on which current assessment methods are based. FBAS results indicated that only one surface sample had PCME structures detected above the detection limit,

with a measured level of 98,700 structures per gram. This sample was taken from an area with visible asbestos and is subject to removal action.

Health risks cannot be determined based solely on soil samples because hazard from asbestos exposure is through inhalation of respirable fibers released into the air. Soil characteristics and activity patterns can affect how/if fibers from the soil are released into the air. Per EPA guidance, human health risk from exposure to asbestos originating in soil is most accurately calculated using activity based sampling [EPA 2008]. However, activity based sampling can be cost-prohibitive and may inadvertently release asbestos into the air, creating a potential health hazard for this community during the process of collecting data. For this reason, activity based sampling was not performed at the residences near the Davidson Mill asbestos site. The FBAS method was performed on soils samples with trace amounts of asbestos detected to further characterize the contamination.

DPH will continue to work with you to provide health information and assessments for people who are at risk of exposure to asbestos in the neighborhood near the Davidson Mill asbestos site. We look forward to continued collaboration with your team. If you have any questions or concerns, please feel free to contact me at beth.dittman@dhhs.nc.gov or by phone at (919) 707-5900.

Thank you,

Beth Dittman
Health Assessor and Principal Investigator
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cc:

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References

[EPA 2008] Framework for Investigating Asbestos-Contaminated Superfund Sites. United States Environmental Protection Agency. Office of Solid Waste and Emergency Response. OSWER Directive #9200.0-68. September 2008.

[EPA 2014] Background Soil Summary Reports Libby Asbestos Superfund Site, Montana. United States Environmental Protection Agency. Prepared by CDM Federal Programs Corporation. February 4, 2014.

Report Preparation

The North Carolina Department of Health and Human Services prepared this letter health consultation for the neighborhood near the Davidson Mill asbestos site under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with the approved agency methods, policies, and procedures existing at the date of publication. Editorial review was completed by the cooperative agreement partner. ATSDR has reviewed this document and concurs with its findings based on the information presented.

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ATTACHMENT A

Photos from the Davidson Mill site and nearby neighborhood



Photo 1. Asbestos released into the street due to erosion of on-site embankment.



Photo 2. Sampling hole in residential yard with visible asbestos.



Photo 3. Broken and discarded asbestos tiles in a residential yard.



Photo 4. Completed construction of interim embankment stabilization on-site.