



**ATSDR**  
AGENCY FOR TOXIC SUBSTANCES  
AND DISEASE REGISTRY

The Agency for Toxic Substances and Disease Registry (ATSDR), a federal public health agency of the U.S. Department of Health and Human Services, has evaluated data received from Environmental Protection Agency (EPA), and the W.R. Grace & Company, Inc., on groundwater, soil, sediment, and surface water at the W.R. Grace site in Acton, Middlesex County, Massachusetts and is ready to release its Public Health Assessment (PHA) for public comment.

August 2008

# W.R. Grace & Company, Inc. Site in *Acton, Middlesex County, MA*

## A PHA is

a scientific review of available information about hazardous substances at a site. The PHA evaluates whether human exposures to these substances are likely to occur (or have occurred already) and whether such exposure is likely to harm persons at or near the site.

In 2003, the EPA asked ATSDR to update a previous draft public health assessment (PHA) that was prepared in September 1992. Since the time of the draft PHA, EPA and the W.R. Grace and Company, Inc. have partially remediated the site and collected additional data and information. In 2003, ATSDR made an initial site visit to the area and conducted a public availability session on October 28 to gather community concerns and discuss ATSDR's role in the Superfund process.

The public comment period will run through September 30, 2008. Members of the community are encouraged to send written comments to:

Chief, Records Activity and Management Branch  
ATSDR  
Attn: W.R. Grace & Company, Inc.  
1600 Clifton Rd., NE (MS F-09)  
Atlanta, GA 30333

## What were some of the community health concerns and ATSDR responses?

**Q:** Is the municipal drinking water supply safe? Are the municipal drinking water supply wells monitored?

Municipal drinking water supplied by the Acton Water District (AWD) currently meets all requirements of the Safe Drinking Water Act. AWD operates and maintains air strippers to remove volatile organic compounds (VOCs) that may be present in groundwater pumped from town wells. AWD samples for VOCs quarterly and treats the water provided to users to ensure a safe water supply.

## Q: Is there a cancer cluster in the Acton area?

The Community Assessment Program of the Massachusetts Department of Health (MDPH), Bureau of Environmental Health, conducted an evaluation of cancer incidence in Acton, Massachusetts. The information reviewed in the assessment does not show any unusual concentration of individuals diagnosed with cancer types that might be associated with the contaminants of concern at the W.R. Grace site. MDPH made the following conclusions in its assessment:

- In general, the six cancer types (bladder, brain and central nervous system, kidney, liver, lung and bronchus, and leukemia) evaluated occurred approximately at or near the expected rates for Acton, its individual census tracts (CTs), and Concord, CT 3612, from 1982-2000.
- Review of the geographic distribution of individuals diagnosed with cancer in Acton and Concord, CT 3612, revealed no apparent spatial patterns at the neighborhood level that would suggest a primary role for a common factor (environmental or non-environmental) in the incidence of cancer.
- Review of available risk factor information for individuals diagnosed with cancer (i.e., age, gender, smoking history, and occupation) suggest that trends observed in Acton and Concord, CT 3612, are similar to those seen in the general population. This information indicates that smoking and, to a lesser extent, occupation, likely played some role in the incidence of some cancer types.

## Q: Could exposure to contaminants at this site contribute to squamous cell carcinoma of the throat?

ATSDR worked with MDPH to select and evaluate cancer types based on their potential association with contaminants of concern identified at the W.R. Grace site. The six cancer types evaluated were bladder, brain and central nervous system, kidney, liver, lung and bronchus, and leukemia. Although throat cancer was identified as a community concern, cancers of the throat, specifically the oral cavity, oropharynx, larynx,

and esophagus, have no risk factors known to be associated with contaminants of concern at the W.R. Grace site. Primary causes for these diseases are tobacco and alcohol use.

## Q: Are there birth defects related to contaminant exposures at this site?

ATSDR refers to some studies related to trichloroethylene (TCE) exposure in the PHA, because these studies suggest that birth defects may occur when mothers drink water containing TCE during pregnancy. However, in general the levels of TCE found in the Assabet wells were much lower than those reported in these studies and the estimated length of exposure to TCE in the Assabet wells was generally shorter than the duration of exposure in these studies. *Therefore, birth defects related to TCE exposure at this site are unlikely.* ATSDR has concluded that past exposure to TCE may have slightly exceeded the current health guideline between 1970 and 1978, but adverse health effects are not likely based on past exposure to TCE in drinking water at this site. Very conservative assumptions that overestimate the magnitude of potential exposures were used in the assessment and the actual duration of exposure was limited (eight years).

There is some scientific evidence in the literature that consumption of high levels of arsenic and manganese in drinking water may result in adverse reproductive effects in humans or animals. The Massachusetts Department of Public Health (MDPH) conducted an evaluation of data available on low birth weight and infant mortality for the town of Acton and found no apparent concentrations or trends of infant deaths or low birth weight births in any one year or time period in Acton. MDPH is requesting additional birth defects data from the Massachusetts Center for Birth Defects Research and Prevention and will make this information available as part of the final report.

## Q: Can benzene exposure lead to cancer?

The Department of Health and Human Services has determined that benzene is a known human carcinogen. Long-term exposure to high levels of benzene in the air can cause leukemia and cancer of the blood-forming organs. ATSDR evaluated the limited historical data for benzene from the Assabet wells. ATSDR calculated exposure doses based on the maximum concentration in the Assabet wells and concluded that it is unlikely adverse health effects would occur due to benzene exposure, because the calculated doses were well below established health guidelines. In addition, ATSDR calculated an excess lifetime theoretical cancer risk for benzene, based on the maximum concentration of benzene reported in historical data for the Assabet wells, and found it unlikely that there is a significant increased risk of cancer due to ingestion of benzene from the Assabet wells in the past.

## Q: What were ATSDR's conclusions?

Based on a review of historical data for Volatile Organic Compounds (VOCs) in the Assabet wells, ATSDR concludes that adverse health effects are not likely. Past exposure to TCE may have slightly exceeded the health guideline between 1970 and 1978; however, because very conservative assumptions were used and the actual duration of exposure was limited, adverse health effects from TCE exposure are unlikely.

ATSDR considers current and future exposures to VOCs, arsenic, and manganese in the municipal drinking water supply, exposure to groundwater from private wells for non-drinking water uses, exposure to surface water and fish consumption from Sinking Pond to pose no apparent public health hazard. Based on modeled concentrations of VOCs potentially volatilizing into nearby buildings, ATSDR concludes that the vapor intrusion pathway poses no apparent public health hazard. This conclusion means that exposure to site-related chemicals may have occurred in the past or is still occurring, but the exposure is not at levels expected to cause adverse health effects.

ATSDR ran dose calculations at values higher than people were actually exposed to in order to see if at those levels, there would have been enough exposure to cause harm to the health of the people. The population of concern, adolescents, is not likely trespassing on the site or accessing the areas with elevated levels of arsenic as often as estimated by ATSDR. There is a moderate elevated excess lifetime theoretical cancer risk for adults, if they routinely trespass on the site and come into contact with contaminated sediment.

## Q: What were ATSDR's recommendations?

ATSDR recommends:

- Continued monitoring of the Assabet, Scribner, Lawsbrook, and Christofferson wells by the Acton Water District to ensure that air strippers are adequately removing VOC contamination and that municipal drinking water supply meets all requirements of the Safe Drinking Water Act.
- Consistent with EPA's clean up plan in the 2005 Record of Decision for the site, ATSDR recommends addressing areas of the site that have elevated levels of arsenic and manganese (i.e., Sinking Pond, North Lagoon Wetland) in sediment in a manner that would be protective of public health.
- The five identified active private irrigation wells in the area of the W.R. Grace site that are used for non-drinking water purposes should be monitored periodically by W.R. Grace to determine whether the levels of contaminants are of public health concern.
- Not installing any new private wells in the vicinity of the groundwater plume near the W.R. Grace site.

# Contacts for more information

Community members can contact any of the following ATSDR team members:

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For more information about ATSDR, visit [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov).



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