



Activities in New Hampshire



ATSDR in Partnership With New Hampshire

The Agency for Toxic Substances and Disease Registry (ATSDR) is the lead public health agency responsible for implementing the health-related provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). ATSDR is an Atlanta-based federal agency with more than 400 employees and an annual budget for 2003 of approximately \$82 million. ATSDR is responsible for assessing the presence and nature of health hazards at specific Superfund sites, helping to prevent or reduce further exposure and illnesses resulting from those hazards, and expanding the knowledge base about the health effects of exposure to hazardous substances.

ATSDR works closely with state agencies to carry out its mission to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and disease related to toxic substances. ATSDR provides funding and technical assistance to states and other partners through cooperative agreements and grants to identify and evaluate environmental health threats to communities. These resources enable state and local health departments and other grantees to further investigate environmental health concerns and to educate communities. From **fiscal years 1987 through 2003**, ATSDR awarded more than **\$2.9 million**—more than **\$562,000** in the last 2 years—in direct funds and services to **New Hampshire** for comprehensive support of its environmental health unit. In addition to direct funds and services, ATSDR staff provides technical and administrative guidance for state-conducted site activities.

ATSDR Site-Specific Activities Public Health Assessment-Related Activities

One of the agency's important mandates is to conduct **public health assessments** of all National Priorities List (NPL) sites and of other sites where a significant

threat to public health might exist. **Twenty** sites have been designated to the NPL in **New Hampshire**.

A **public health assessment** is a written, comprehensive evaluation of available data and information on the release of hazardous substances into the environment in a specific geographic area. Such releases are assessed for current or future impact on public health. ATSDR, in collaboration with public health and environmental officials from **New Hampshire**, has conducted **35** health assessments in the state, including the following recent examples.

- **Electrosonics**—The former Electrosonics facility in **Chesterfield** manufactured electronic circuit boards from December 1966 until February 1984. The facility is currently inactive, although three small businesses still use one building on the property. High levels of contamination in both soil and groundwater led the **New Hampshire Department of Health and Human Services (NH DHHS)** to complete this public health assessment, published in November 2002, under its cooperative agreement with ATSDR.

The main contaminants at the site are chromium, copper, lead, chlorinated volatile organic compounds (VOCs), and petroleum-related compounds. Chromium, copper, and lead were used to plate and etch circuit boards; chlorinated VOCs were used in the cleaning and degreasing process. Petroleum products found on the site are related to reoccurring spills of fuel oil from aboveground storage tanks and from fuel line breakage.

None of the current exposures at the site are expected to cause adverse health effects. Therefore, current conditions at the site are categorized as no apparent public health hazard.

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However, site remediation is needed because future changes in land use could increase exposures to levels that could potentially cause adverse health effects.

In the past, exposures to multiple VOCs occurred in several private wells near the site. Contamination in all but two wells was low enough that adverse health effects are not expected to have occurred. The most serious exposures occurred in two nearby residential wells, where exposure to trichloroethylene, 1,1-dichloroethylene and vinyl chloride could potentially cause a low to moderate theoretical risk of cancer. For the other wells, the known exposures were unlikely to result in adverse health effects. It is not known whether any residents lived there long enough, or if the contamination began early enough, for such long-term exposures to occur.

- **Gardner-Roussel Park and Dr. Norman W. Crisp Elementary School**—The Gardner-Roussel Park/Dr. Norman W. Crisp Elementary School site is on Arlington Road in **Nashua**. Gardner-Roussel Park is a public park with recreational facilities, and is abutted by the elementary school. The site is bordered on all sides by residential neighborhoods.

In November 2001, the **Nashua Department of Public Works** found polycyclic aromatic hydrocarbons (PAHs) in the soil while preparing to renovate the park. **NH DHHS** was contacted to further investigate the potential for exposure to PAHs in the park. **NH DHHS** completed this public health assessment, released in September 2002, under its cooperative agreement with **ATSDR**.

NH DHHS evaluated soil sampling data collected from Gardner-Roussel Park and from the elementary school grounds, as well as ambient air

samples from inside the school. Past exposures differed from present and future exposures because the city of Nashua covered some soil in the park. **NH DHHS** evaluated exposure scenarios for juveniles because it can be assumed that children are most likely to be exposed at these two areas.



Area near the former Electrosonics facility in Chesterfield. The white building (center) sits on the site.

Two conclusions related to the park follow: although exposure to PAHs in surface soils is occurring at the park, exposure to PAHs in surface soils at the park poses no apparent public health hazard in the past, present, or future; and dioxin detected in surface soils in the park pose no apparent public health hazard. Since the release of the health assessment, the park has been completely

remediated and new soil was placed over the entire park. It was officially reopened in summer 2003.

Two conclusions related to the school follow: although exposure to PAHs in surface soils is occurring on the school grounds, exposure to PAHs in surface soils on the grounds of the school poses no apparent public health hazard in the past, present, or future; and levels of airborne naphthalene inside the school pose no apparent public health hazard.

A **health consultation** is a written or oral response from **ATSDR** to a specific request for information about health risks related to a specific site, chemical release, or hazardous material. It is a more limited response than a public health assessment is. To date, **109** documented health consultations have been conducted at **57** sites in **New Hampshire**, including the following recent examples.

- **Winchester Tannery**—The former **Winchester Tannery** operated from 1831 until it burned down in 1909. Part of the Winchester site is now a residential property; a house was built there shortly after the tannery burned down. In December 2000, the **New Hampshire Department of Environmental Services** took soil samples from the property; these samples showed elevated lead levels.

A health consultation released in February 2003 reviewed environmental sampling data collected from the site, where tannery waste might be present, to identify current public health risk associated with exposure to chemical contaminants on the site. Forty-six soil samples were tested for inorganic and semivolatile compounds. The levels of PAHs, arsenic, and other compounds in soil are classified as no apparent public health hazard because those levels are within background concentrations. Lead levels in the soil on-site are a public health hazard to children who might live on-site.

- **Four Hills Landfill**—A health consultation released in February 2003 evaluates the potential health impact associated with inhalation exposure to landfill gases (particularly hydrogen sulfide and volatile organic compounds) that are being released from the Four Hills Landfill in **Nashua** while this facility is being closed out. This consultation has been prepared in response to local residents' health concerns about exposure to these gases. This document was prepared by the **New Hampshire Bureau of Environmental and Occupational Health (BEOH)** through its cooperative agreement with ATSDR.

Landfill operations began at Four Hills in 1971. Today, many sections of the site have been capped and are no longer in use, but several other waste management activities continue at Four Hills. These operations include a solid waste baling facility, a landfill gas-to-energy facility, recycling facilities, and a yard waste compactor. The active landfill operation at Four Hills accepts residential and commercial waste generated in the city of Nashua.

Levels of toluene and total xylenes appear to be well below their respective comparison values. Even with current ambient air monitoring data, it is unlikely that these chemicals will be found above their comparison values. Therefore, BEOH considers exposures to toluene and total xylene emissions from the Four Hills Landfill site to be no apparent public health hazard.

Adequate ambient air monitoring data for hydrogen sulfide are not available. BEOH is unable to assess past, present, or future health risks. Therefore, BEOH considers exposures to

hydrogen sulfide emissions from the Four Hills Landfill site to be an indeterminate public health hazard.

Studies by ATSDR and others show that respiratory problems can occur in persons exposed to hydrogen sulfide. Study results are inconsistent as to whether a relationship exists between exposure and adverse birth effects. Therefore, we cannot determine with any degree of certainty whether the exposures at the site are related to adverse pregnancy outcomes.

An **exposure investigation** collects information on specific human exposures through biologic sampling, personal monitoring, related environmental assessment, and exposure-dose reconstruction. Since 1990, ATSDR staff members have conducted **four** exposure investigations in **New Hampshire**, including the following example.

- **Pelham Lead Exposure Investigation**—From August through October 1999, **NH DHHS** conducted an exposure investigation for the residents of 14 homes with elevated lead concentrations in drinking water in the Hobbs Road-Balcom Road area of **Pelham**. The drinking water contamination was discovered as part of an investigation of the Gendron Junkyard site, where EPA found elevated concentrations of polychlorinated biphenyls and lead in waste piles.

All participants with nonoccupational exposures to lead had blood-lead levels below the level of concern for childhood lead poisoning prevention as determined by the Centers for Disease Control and Prevention. Participants with occupational exposures to lead had blood-lead levels below the level of concern as determined by the National Institute for Occupational Safety and Health. Fifty of the 65 eligible residents (77%) participated in the exposure investigation.

Health Education and Community Activities

New Hampshire has been a participant in ATSDR's cooperative agreement program since **1987**. Under this program, **NH DHHS** has received funding and technical assistance for the development of community education and activities associated with human exposure to hazardous substances in the environment. In the last 2 years, more than 40 educational materials were developed in support of 20 environmental health education seminars,

workshops, or town meetings. Examples of recent environmental health activity include distribution of fact sheets on the public health assessment process, what you need to know about cancer, and exposure pathways, as well as site-specific materials.

Through a national cooperative agreement with the Migrant Clinicians Network, ATSDR provides assistance to health care providers working with migrant and seasonal farm workers. The Migrant Clinicians Network, the second largest clinical network in the nation, brings together clinicians from various professions to meet the needs of migrant and seasonal farm workers. The local member of the Migrant Clinicians Network is the **New Hampshire Bi-State Primary Care Association** in Concord.

Health Studies

Health studies are investigations conducted to determine the relationships between exposures to hazardous substances and adverse health effects. They also define health problems that require further investigation through, for example, health surveillance or an epidemiologic study. Following is an example of a health studies or investigation that ATSDR conducted or supported in the state of **New Hampshire**.

- **Hazardous Substance Emergency Events Surveillance System**—The Hazardous Substances Emergency Events Surveillance System (HSEES) was established by ATSDR in 1990 to collect and analyze information about releases of hazardous substances that require remediation according to federal, state, or local law, as well as threatened releases that result in a public health action, such as an evacuation. The goal of HSEES is to reduce the morbidity and mortality experienced by first responders, employees, and the general public resulting from hazardous substances emergencies. **New Hampshire** was one of the five original states to participate in this program, and participated until September 1997.

Resource Materials

ATSDR develops materials that public health professionals and medical care providers can use to assess the public health impacts of chemical exposures. Resources are available in print, on the ATSDR Web site, and on CD-ROM. For example, medical management guidelines are available for

acute chemical exposures to more than 40 chemicals. ATSDR's toxicological profiles comprehensively describe health effects; pathways of human exposure; and the behavior of more than 250 hazardous substances in air, soil, and water at hazardous waste sites. In the last 5 years, more than **5,700** of these profiles have been sent to requesters, including representatives of federal, state, and local health and environmental departments; academic institutions; private industries; and nonprofit organizations in **New Hampshire**. ATSDR has also developed extensive resources for community members.

For more information, contact ATSDR toll-free at 1-888-42ATSDR (1-888-422-8737) or visit the ATSDR Web page at www.atsdr.cdc.gov.