



# Activities in Virginia



## ATSDR in Partnership With Virginia

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 1988 through 2003**, ATSDR awarded more than **\$500,000** in direct funds and services to **Virginia** for financial support of specific environmental health activities. 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. **Thirty-four** sites

have been designated to the NPL in **Virginia**.

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 **Virginia**, has conducted **38** health assessments in the state, including the following recent examples.

- **Naval Amphibious Base Little Creek**—ATSDR prepared a health assessment for the Naval Amphibious Base Little Creek in **Norfolk** and **Virginia Beach** to evaluate the potential for harm to human health posed by hazardous substances at the base. Former operations at the base resulted in various fuel and chemical releases or spills, and in 1999, the U.S. Environmental Protection Agency (EPA) added the base to the NPL. The base was added to the NPL primarily because of concern about hazardous substances potentially entering surface water and endangering wildlife. Of the contaminants detected at the site, the primary contaminants of concern to ATSDR are metals, such as lead in surface soil, and mercury and polychlorinated biphenyls (PCBs) in fish and crab.

The health assessment, released in September 2003, included five conclusions about exposures. The site was classified as posing no apparent public health hazard for contaminants in surface soil; for off-site airborne lead or resuspended lead-contaminated soil or dust; for landfill gases; or for consumption of fish, crabs, and shellfish from Little Creek Harbor. ATSDR also concluded that it would be prudent for families living in the Turner Road neighborhood to evaluate their

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potential exposure to lead, including screening for elevated blood-lead levels in children under 6.

- **Norfolk Naval Shipyard**—In August 2003, ATSDR released a public comment draft health assessment for Norfolk Naval Shipyard in **Portsmouth**. The shipyard is one of the largest ship repair facilities in the world. The health assessment evaluated past, current, and potential future exposures to contaminants originating from the shipyard.

The health assessment concluded the site posed no apparent health hazard for the following exposures: past, current, or future exposures to surface water and sediment in Paradise Creek; past, current, or future exposures to calcium hydroxide contamination; current or future exposures to soil near the New Gosport area where abrasive blast material has been removed; and current or future exposures to former shipyard foundry emissions.

The health assessment concluded the site posed an indeterminate public health hazard for the following exposures: past exposure to lead in soil in the New Gosport area; current and future exposures at other Navy family housing areas; and past exposure (before the end of World War II) to emissions from the former shipyard foundry.

The health assessment concluded that the site posed a public health hazard for past exposure to lead at other Navy family housing areas.

The public comment period ended in October 2003, and a final health assessment will be released after comments are reviewed and addressed.

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, **72** documented health consultations have been conducted at **56** sites in **Virginia**, including the following recent examples.

- **Portsmouth Manufactured Gas Plant**—The **Virginia Department of Environmental**



**Aerial view of Norfolk Naval Shipyard.**

**Quality (VDEQ)** asked ATSDR to review environmental sampling data collected on and near the site of the former Portsmouth Manufactured Gas Plant in **Portsmouth** and to identify potential health hazards to past and current residents. The manufactured gas plant operated from 1856–1956; in the 1960s, residential apartments and single-

family houses were built on and near the decommissioned site. Environmental activities including investigations, assessments, and remediations have been conducted at the site since 1992.

In a health consultation released in April 2003, ATSDR classified the site as a potential public health hazard because of lead contamination in on-site surface soil. No health hazards were found for most of the pathways investigated (current and future exposures to soil, past exposure to mercury vapor, current exposure to volatile organic compounds, current and future exposures to benzene in an irrigation well, current and future exposures to arsenic in surface soil). Lead contamination of the surface soil at one location in the apartment area poses a potential health hazard to young children if they have access to the area; past lead exposure of children younger than 2 posed a health hazard.

- **Defense General Supply Center (DLA)**—In May 2001, **VDEQ** asked ATSDR to provide a health consultation on the public health significance of environmental contaminants found in surface water at and near DLA in **Richmond**. In a health consultation released in April 2002, ATSDR evaluated the potential risk to persons

who could be exposed to contaminants in surface water on or near DLA in No Name and Kingsland Creeks. The health consultation concluded that no current human health hazard exists from exposure to surface water in the creeks.

Also in May 2001, VDEQ asked ATSDR to determine whether recommendations in a 1993 health assessment of DLA were adequately addressed. In a health consultation released in June 2002, ATSDR reviewed those eight recommendations and evaluated the public health actions taken.

- **Avtex Fibers Facility, Front Royal**—In August 2001, ATSDR recommended air monitoring to determine the levels of air contaminants (hydrogen sulfide, carbon disulfide, and other sulfur compounds) to which people in the community near the **Front Royal** Avtex facility could be exposed. In June 2002, ATSDR reviewed the air sampling information collected as a result of our recommendation and concluded that no health effects would be expected from the levels of hydrogen sulfide detected during the period of sampling. However, hydrogen sulfide levels may reach nuisance levels in the community at times, and we do not know whether peak concentrations are high enough to trigger reactions in sensitive individuals. Time-integrated sampling over 24 hours did not detect the target compounds hydrogen sulfide, carbon disulfide, or the other 18 sulfur compounds analyzed. ATSDR recommended additional monitoring at various times of the year and during times that excavation activities are being conducted at the site.

In September 2002, ATSDR hosted an open house in the community in response to health concerns expressed by residents of nearby communities. The purpose of the open house was for ATSDR to gather community health concerns about the site, with the goal of developing an appropriate health education program for the community. Some of the residents provided the names of their physicians and expressed a desire to have the more technical aspects of the hazardous substances at the site (particularly hydrogen sulfide) presented directly to a group of local physicians. They felt that physicians familiar with their private medical histories

would be better prepared to address individual concerns that result from their potential exposure. As a result, ATSDR prepared letters and information packets for the physician contacts provided by the residents.

- **Former Nansemond Ordnance Depot (FNOD) Site, Suffolk**—The FNOD site is a 975-acre former military facility near **Portsmouth**. During World Wars I and II and the intervening years, the depot was used for various activities related to the preparation, processing, storage, shipment, salvage, reconditioning, and disposal of ammunition. Since 1961, a college has occupied part of the site. Major development projects are planned for the site and may include residential development in the future. In 1995 and 1996, ATSDR conducted health consultations to address drinking water and beach contamination issues. Several homes were connected to the public water system in response to recommendations made in ATSDR's consultation. Since the site's addition to the NPL, ATSDR has begun its public health assessment process. ATSDR scientists have been reviewing existing data associated with the chemical contamination and the unexploded ordnance at the site and have evaluated the potential future uses of the site. The public health assessment will be released for public comment in fall 2003.

### **Health Education and Community Activities**

As part of its ongoing outreach activities in affected communities, ATSDR staff takes proactive steps to involve communities in identifying their health concerns and developing actions to address them. An example of this type of involvement in **Virginia** follows.

- **Saltville Waste Disposal Site**—The two main health concerns in the community are mercury contamination in the Holston River and soda ash in soil. As part of its involvement in the community, ATSDR conducted an educational planning workshop, during which residents identified five health education projects for **Saltville**. One project involved residents distributing fliers about state restrictions on eating fish from the North Fork of the Holston River. Another included a series of presentations to children from the Saltville Elementary School.



## Minority Health Professions Foundation (MHPF) Research Program

In September 2003, ATSDR initiated a new cooperative agreement with MHPF. The goals of the new program are to apply findings from the 10-year Environmental Health and Toxicology Research Program and to improve public health and environmental medicine in low-income or minority communities, or both. This new program will build on earlier efforts and expand the program's public environmental health impact on affected communities. Seven research and environmental public health activities are currently funded to initiate this new effort, including the **School of Pharmacy at Hampton University in Virginia**.

Scientists at the School of Pharmacy at Hampton University in Hampton will begin studies to investigate the effects of chlorpyrifos on cells in the developing nervous system. Many children in the United States have detectable levels of chlorpyrifos. Although chlorpyrifos has been shown to be relatively safe in adults, recent evidence in animals suggests that the young may be more sensitive to its toxic effects. Glial cells, among others, play a pivotal role in the development and maintenance of the nervous system. Disruption in glial cell function may cause neurodevelopmental changes, which can manifest as motor, cognitive, or behavioral dysfunctions. The adverse effects of chlorpyrifos on neurons, the major cell in the nervous system, are well documented; however, few studies have focused on the effects of chronic exposure to low levels of chlorpyrifos on glial cells and nervous system development. Recent studies have indicated that the glial cells may be susceptible to chlorpyrifos toxicity. The present study will investigate the effects of long-term, low-level exposure to chlorpyrifos, and its active metabolite, on glial cells. The results of these studies will fill ATSDR research needs for developmental toxicity and neurotoxicity that were identified for chlorpyrifos and help researchers understand the relationship between exposure to chlorpyrifos and the potential for harmful effects on the nervous system as children develop.

## Association of Occupational and Environmental Clinics

Through a national cooperative agreement with the Association of Occupational and Environmental Clinics (AOEC), ATSDR supports one occupational and environmental health program in **Virginia**. This support is provided to improve education and communication related to surveillance, diagnosis, treatment, and prevention of illness or injury related to exposure to hazardous substances. The member institution in **Virginia** is the **Carilion Occupational Medicine Fralin Center** in Roanoke.

## 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 **9,100** 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 **Virginia**. 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](http://www.atsdr.cdc.gov).**