

CHEMICAL HAZARDS PROGRAM NEWS

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Welcome Readers!

This issue of *Chemical Hazards Program News* highlights the possible health consequences from exposure to radon, informs about the latest education materials available from the Program and, as usual, provides detailed summaries for three hazardous waste sites in Georgia that we've recently investigated.

The Chemical Hazards Program (CHP) is available to district and county health department staff, other state and federal agency personnel, and the public for information about the health effects from exposures to chemical contamination of environmental media including air, groundwater, soil, surface water, and food. For example, we conduct health consultations. These are federally published reports including a hazardous waste site's history, community concerns, environmental sampling data, actual and potential exposure pathways, and recommendations to protect public health. In addition, we provide technical assistance, community health education, and professional training for all chemical exposure-related issues.

If you would like information or assistance with chemical exposures, please contact us by calling 404.657.6534, or online at www.health.state.ga.us/programs/hazards.

Chemical Hazards Program Staff



New CHP Staff Member

JESSICA FOLEY

Jessica is the Chemical Hazards Program's newest District Risk Communicator. She is a recent graduate of Berry College with a Bachelor of Science in Biology. While studying at Berry, she participated in various research activities including studies involving coyotes.

Prior to relocating to Rome, Georgia, Jessica spent 16 years living in Florida. Jessica has won several awards for her research work. This year she was recognized for Berry College research accomplishments in the Atlanta Journal Constitution.

WE OFFER STAFF TRAINING

CHP offers a variety of professional training for county and district environmental health and nursing staff. Training topics include:

- ✓ Asbestos/Radon
- ✓ Chemical Hazards Program Overview
- ✓ Methamphetamine Labs: Conduct Safe Inspections
- ✓ Risk Communication for Chemical Exposures
- ✓ The Environmental Health and Nursing Initiative

Training can also be tailored to address specific chemical exposure related issues of concern to staff. Please contact us for more information, or to request training.

Radon: Do You Smell What the Rocks Are Cooking?

Since the early 1980s, radon has gained attention as a public health hazard. Radon is a gas that is derived from the radioactive decay of radium and uranium. While primarily located in the earth's crust, rocks, and soil, it can also be present in groundwater and in the air inside homes. The U.S. Environmental Protection Agency (EPA), in cooperation with state and local agencies, educates people on the dangers of elevated radon levels in homes. Between fifteen and twenty-two thousand people die from lung cancer each year in the U.S. from indoor exposure to radon gas. It is recommended that every home be tested.

In Georgia, EPA works with the Georgia Department of Natural Resources, the University of Georgia, and the Southface Energy Institute to promote radon awareness and provide testing information. The University of Georgia Cooperative Extension Service produces a radon newsletter and has a radon education program that distributes free testing kits for residents in Gwinnett, Oconee, Hall, Sumter, and Walton Counties. Several other Georgia counties (Cobb, DeKalb, Douglas, North Fulton, and Thomas) also provide assistance with radon testing.

Any home may have a radon problem. This includes new, old, well-sealed or drafty homes, and homes with or without basements. Radon is generally more concentrated at lower levels, like basements, ground floors and first floors. Air pressure inside a home is usually lower than pressure in the soil around the home's foundation. Because of the difference in pressure, a house acts like a vacuum, drawing radon in through dirt floors, hollow-block walls, cracks in the foundation floor and walls, and openings around floor drains, pipes and sump pumps.

January is designated as National Radon Action Month and features different activities as well as a national poster contest to increase awareness about radon in the home. The poster contest fosters community and media events that are used to inform the public about radon and the importance of testing your home. One of this year's winners was 4th grader Marki Grace Calvert, from Loganville, Georgia!

Radon Hotline Numbers

National Hotline: 1-800-SOS-RADON
(1-800-767-7236)

The Radon Fix-it Line: 1-800-644-6999

National Radon Safety Board: 1-866-329-3474

Southface Energy Institute: 1-404-872-3549 or

1-800-745-0037 (outside Atlanta Metropolitan Area)

Sources: www.epa.gov/iaq/radon, www.fcs.uga.edu/extension/housing/radon

CHEMICAL OF CONCERN: Radon

There is no scientific doubt that prolonged exposure to high levels of radon gas can cause lung cancer. Radon gas decays into radioactive solid particles that can get trapped in your lungs when you breathe. As the particles break down further, they release small bursts of energy that can damage lung tissue and lead to lung cancer. Not everyone exposed to elevated levels of radon will develop lung cancer. The amount of time between exposure and the onset of disease may be many years. Smoking combined with radon exposure is an especially serious health risk.

Radon is measured in pico-Curies per liter (pCi/L) of air. A picoCurie is a measure of the amount of radioactivity of a particular substance. A liter is about equal to a quart. The level of radon in outdoor air is about 0.4 pCi/L. The average indoor radon level is about 1.3 pCi/L. EPA has established 4.0 pCi/L as the action level for radon in homes, schools and workplaces. This is a technology-based number, not a health-based level. Current mitigation technology can generally reduce radon levels to 3.9 pCi/L or less.

Since radon is a carcinogen, no level is completely risk-free. However, since it is a natural part of the environment there is no such thing as a "0" level.

As a means of prevention, EPA and the Office of the Surgeon General recommend that all homes below the third floor be tested for radon. If your home has elevated levels of radon, there are simple ways to fix the problem that aren't too costly.

Source: www.southface.org

NEW CHP BROCHURES!!!

Food For Thought: Safe And Nutritious Fish And Seafood

Fish and seafood are the basis for livelihood, recreation, and diet for millions of residents and visitors to Georgia. They are an excellent source of nutrition and provide many other dietary benefits. However, some fish and seafood from Georgia waters contain contaminants such as mercury and PCBs that should be consumed in limited quantities, especially by sensitive populations including pregnant women and young children. The Division of Public Health (DPH) and Environmental Protection Division (EPD) collaborated for over two years on a health education campaign to promote safe fish and seafood consumption.



The campaign informs the public about EPA and FDA consumption advisories, and the nationally acclaimed EPD risk-based approach for establishing safe levels of consumption. The campaign resulted in the publication of region-specific, reader-friendly, multi-lingual brochures that target susceptible populations with information about healthy cooking techniques, fish species, size, and amount (i.e., no restriction, weekly, monthly, do not eat).

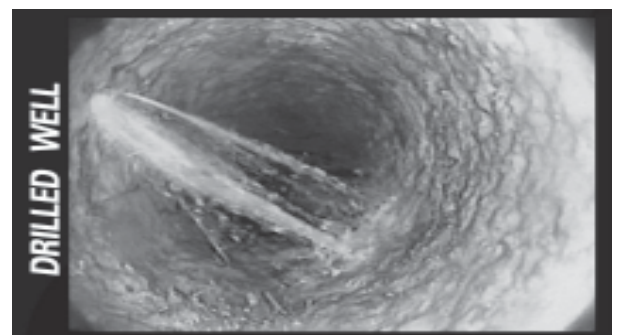
Before final publication and distribution, an extensive two-tiered evaluation process was instituted to receive and measure input on the draft brochures from over two hundred professionals from various agencies and the public. Two of the brochures are site-specific; advisories are based on contamination from state or federal Superfund sites. The brochures are distributed from county health department offices and clinics, regional EPD offices, University of Georgia Cooperative Extension Services offices, fishing license vendors, bait shops, community organizations, websites, and other locations.

The four region-specific brochures cover Coastal Georgia (six coastal counties and Charlton County); the Coosa, Etowah, and Oostanaula Rivers (Chatooga, Floyd, Bartow and Gordon Counties); Middle and South Georgia (93 counties); and North Georgia (55 counties). For copies of these brochures, please call the CHP at 404.463.0820.

Water Quality Fact Sheets

CHP staff worked with the University of Georgia, Cooperative Extension Service Housing Education Program to offer eleven new circulars to teach Georgians how to reduce exposure to contaminants in individual water wells. The *Household Water Quality Series* can be found online at www.fcs.uga.edu/extension/house_pubs.php and is also available in Spanish.

- *Coliform Bacteria in Your Water*
- *Corrosive or Scaling Water*
- *Disinfecting Your Well Water: Shock Chlorination*
- *Home Water Quality and Treatment*
- *Hydrogen Sulfide and Sulfate*
- *Iron and Manganese*
- *Lead and Copper*
- *Nitrite in Water*
- *Pesticides, Solvents, and Petroleum Products*
- *Protecting Your Well and Wellhead*
- *Testing for Water Quality*



Older drilled steel wells can get holes in the casing. Shallow water at the hole flows into the well rather than the water at the deep portion of the well.

BROWNFIELDS

NORTH GEORGIA Rummel Fibre Company Rome, Floyd County

The U.S. Environmental Protection Agency

Brownfields Assessment Demonstration Pilot Grants

Brownfields are abandoned, idle, or underused industrial and commercial properties where redevelopment is hindered by real or perceived environmental contamination. There are most likely several in your community. Any state, county, city, or tribe may apply for a Brownfields Assessment Demonstration Pilot Grant to prevent, assess, safely clean up, and promote the sustainable reuse of brownfields. To date, EPA has awarded more than 375 grants that are funded through cooperative agreements of up to \$200,000 each for a two-year period.

Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or "Superfund"), EPA selects new projects for grant funding annually. All grants are contingent upon availability of funds. For more information, visit the EPA Brownfields website at www.epa.gov/brownfields.

If you are interested in applying for a Brownfields grant, please contact the CHP at (404) 657-6534 and we can assist you with the application process. The deadline for applications for these highly competitive grants is usually in November. Help improve a community by becoming part of the Brownfields team!

In 2002, the Georgia Environmental Protection Division (GEPD) asked the Chemical Hazards Program (CHP) to conduct a public health investigation at the Rummel Fibre Company (Rummel). GEPD is concerned about possible adverse health effects caused by past, present, and future exposure to contaminated groundwater from past facility operations.

The 12-acre site is in a semi-rural area of Floyd County and bordered by woodland and residential property. The site was developed in 1967 for the manufacture of television antennas and electronic equipment. In the late 1970's, a portion of the property was sublet to manufacture plastic laminates for electrical panels and wire cloth filters. These manufacturing operations used trichloroethylene (TCE) for degreasing components, and other chemicals for electroplating and anodizing. Small quantities of solvents were reportedly discharged onto the ground at both the north central parking area and the northeast loading dock over a period of several years.

To the north of the site, TCE was found in three of the five individual water wells above the Safe Drinking Water Act maximum contaminant level (MCL) of 5 micrograms/liter (ug/l), and 1,1-dichloroethene (1,1-DCE) was found above the MCL of 7 ug/l. One of these three wells was an irrigation well and never used as a potable water source. Sampling data obtained in 1999 showed peak concentrations of TCE for each potable water well at 100 ug/l and 270 ug/l. In addition, one of these wells showed a peak concentration of 1,1-DCE at 19 ug/l. Residents were immediately provided bottled water and soon after connected to the Floyd County water supply. The contamination plume is approximately 250 feet below ground; thus, there is no potential exposure to contaminated groundwater vapor at these residences.

Soon after off-site contamination was detected, an interim groundwater recovery and treatment system was installed. This system removes contaminants and controls migration from the source areas on site. Groundwater analyses indicate that the concentration of contaminants has been declining, most likely due to natural attenuation and groundwater remediation.

Conclusions

Rummel currently poses ***no apparent public health hazard*** to nearby residents. Three residences affected by a contaminated groundwater plume in the past are now connected to the Floyd County water supply. Future exposure to contaminated groundwater is not likely because contaminated groundwater is being successfully remediated.

Sources: Environmental Resources Management, *Updated compliance status report*, 12/01. Atlanta Environmental Management, Inc., *Summary of additional phase II assessment at the American Real Estate Holding Site in Rome, Georgia*, 3/92. Georgia Environmental Protection Division. *Consent order no. EPD-HSR-269*, 10/01.

CENTRAL GEORGIA Peach Metals Industries Byron, Peach County

In January 2002, the Chemical Hazards Program (CHP) was asked by residents to conduct a public health assessment at Peach Metals Industries (PMI) to determine the potential for adverse health effects from exposure to environmental contamination from past operations. CHP reviewed residents' concerns and environmental sampling and health outcome data to evaluate whether potential pathways of exposure exist for groundwater, surface water, and soil impacted by contaminants from the site.

PMI is a former electroplating facility located in Peach County near the city of Byron. PMI operated on approximately 9.5 acres from 1971 until 1987, when PMI filed bankruptcy, and the property was abandoned. While PMI was in operation, improper management of electroplating wastewater and process materials led to soil contamination at the site, which eventually led to groundwater contamination.

The PMI site is bordered by timberland and a residential area. Individual water wells provide water to a few residents located within a mile of PMI. Most residences near PMI are connected to the Byron municipal water supply. The perimeter of PMI is fenced and a locked entry gate secures access to the property. Therefore, current and future exposures to on-site contaminants are not likely.

In 1997, sample results from 25 monitoring wells determined that on-site groundwater contained cadmium, chromium, lead, nickel, zinc and trichloroethylene above Safe Drinking Water Act maximum contaminant levels (MCLs). Residents were concerned that children could get onto the site and play in the soil and water collected in the surface impoundments. In addition, the community stated that there is an increased number of neurological and rare blood diseases, and numerous types of cancer in the community.

Potable water for workers at PMI was supplied by a well located onsite and past exposure to contaminants is possible. There is potential for future exposure to on-site groundwater, but it is unlikely because the on-site

well is no longer used, contaminated on-site soil has been removed, and the property is now inaccessible to the public.

Eight individual water wells nearest to the site were sampled. Two of the wells contained lead in excess of the MCL of 15 micrograms per liter (ug/l). Lead levels in private wells were 24 (ug/l) and 50 ug/l. It is unlikely, however, that the source of the lead was from PMI because groundwater flow was determined to be from south-to-north, and these wells are located approximately ½ mile east of PMI. In 2002, private wells showing previous contamination were sampled again, and no private wells had contaminants at levels exceeding an MCL.

Between 1991 and 1995, approximately 6,500 tons of contaminated soil and 20 cubic yards of concrete debris were removed from the site. The effectiveness of the cleanup was verified by sampling to show that contaminant levels were reduced to below cleanup target levels. After excavation, the areas, excluding the surface impoundments, were backfilled with clean soil.

GEPD conducted surface water sampling from a streams west and south of the site. No contaminants were detected in any of the samples.

Conclusions

The PMI site poses ***no apparent public health hazard***. No current or future completed exposure pathways exist for groundwater, soil or surface water. For PMI workers and others who had exposure to contaminated on-site soil and groundwater in the past, the health hazard is unknown because insufficient data are available to evaluate past exposures. Contaminated on-site soil has been removed, and the on-site well is no longer used.

Sources: Georgia Environmental Protection Division, *Trip report, Peach Metals Industries, 3/4/02*. Roy F. Weston Inc., *Site assessment report for the peach metals industries site, Byron, Georgia, 2/98*.

METRO Atlanta DeKalb Pest Control Services Avondale Estates, DeKalb County

Beginning in 1998, the DeKalb County Health Department requested that the Chemical Hazards Program (CHP) evaluate the extent of past and present contamination and the potential for resulting health effects associated with DeKalb Pest Control Services (DeKalb Pest), a state-listed hazardous waste site.

DeKalb Pest is located on the property of a single-family residence in an urban area of Avondale Estates, and bordered by other houses and woodland. The site was the operating facility for a commercial pesticide applicator from 1977 until January 1991 when a routine inspection by the Georgia Department of Agriculture (GDA) led to the discovery and reporting to the Georgia Environmental Protection Division (GEPD) of the improper disposal of waste pesticide containers and rinsate from cleaning pesticide applicators in the wooded area behind the house. Laboratory analysis of soil samples found chlordane to be the only constituent above residential regulatory standards. Approximately 50 cubic yards (70 tons) of contaminated soil was excavated and incinerated. Following remediation, analytical results indicated that all chlordane levels were below regulatory levels.

Pesticide labeling has the force of law, and the applicator is responsible for proper use in accordance with label precautions and directions for handling, transporting, applying, disposing, and storing of these chemicals. The owners were subsequently held legally responsible for the improper disposal of the chemicals.

The site is located on private property with unlimited access. Persons who may have been exposed to contaminated soil at this site include tenants, employees, contractors, guests of tenants, and trespassers. Though chlordane existed in soil at levels above the regulatory levels prior to remediation, a public health hazard only exists if there was an actual exposure to the chemical and at high enough doses to result in adverse health effects.

The maximum level of chlordane found in soil prior to remediation was 164.8 parts per million (ppm). The health value for chronic exposure to chlordane in soil for a child is 30 ppm and for an adult is 400 ppm. Therefore, those at greatest risk for adverse health effects from exposure

to chlordane at this site were the former tenants of the property who owned and operated DeKalb Pest and their family members, especially children, who had chronic (> one year) exposure.

Chlordane

Chlordane was banned in the United States in 1988 because of concerns about the risk from long-term exposure. There are no documented cases of high or low-level ingestion exposure to chlordane over a long period of time. Workers who are known to have had moderate exposure over a long period of time developed headaches, dizziness, vomiting, and irritability. Workers removed from the source of exposure rapidly recovered from most of these effects. Scientists do not know whether these chemicals affect the ability of people to have children or whether they cause birth defects. There is no direct evidence that chlordane causes cancer in humans.

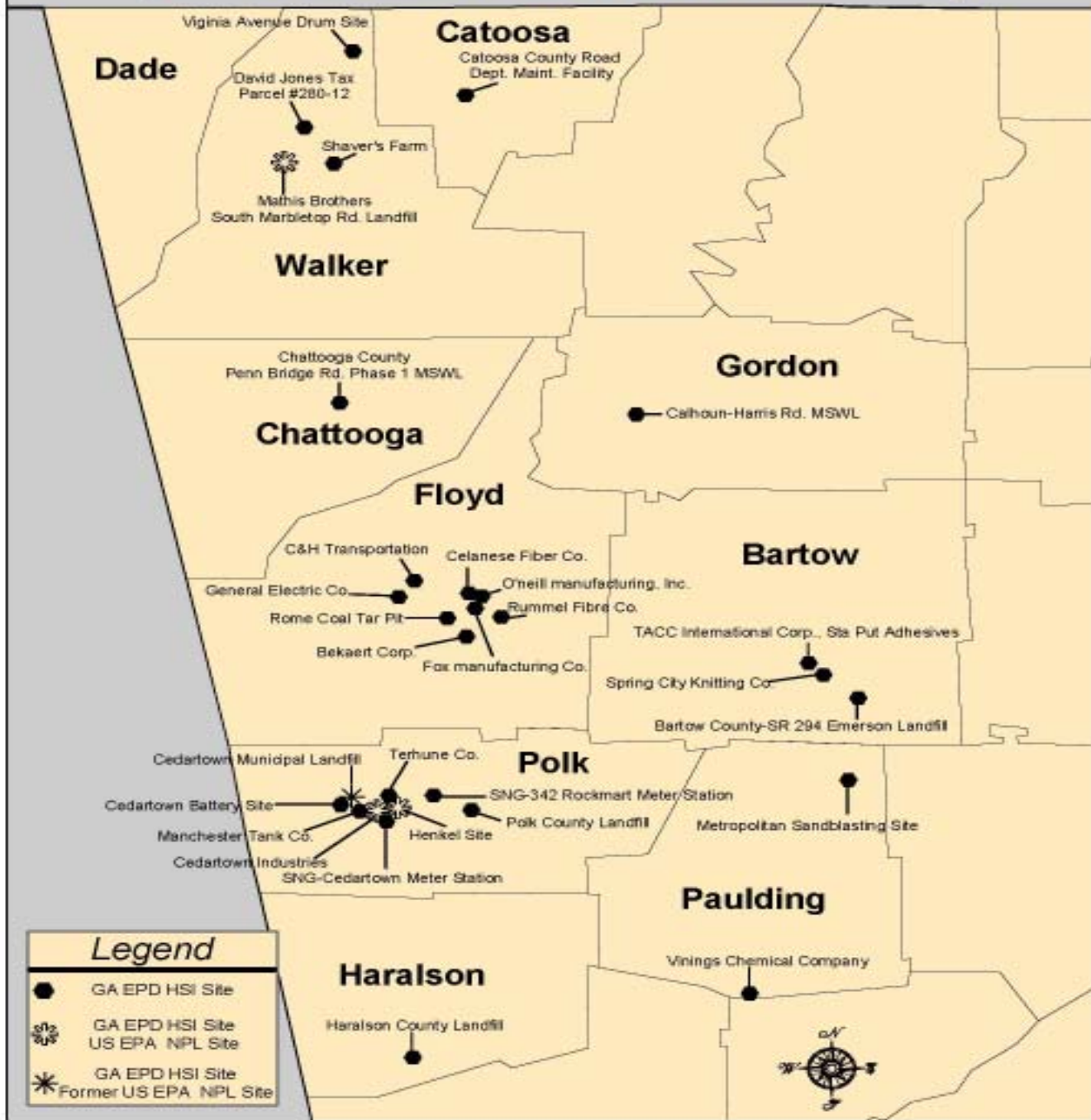
GEPD required that additional sampling be conducted to determine the nature and extent of contamination in groundwater. In order to obtain groundwater samples and depth to water information, temporary groundwater monitor wells were installed on-site and sampled in April 2002. None of these samples contained detectable levels of metals or pesticides.

Conclusions

In 1998, the CHP determined that prior to corrective action, this site posed **a public health hazard** to children who lived on or near the property and had direct contact with contaminated soil over a long period of time. No groundwater samples collected in April 2002 contained detectable levels of metals or pesticides. Therefore, the site is currently characterized as posing **no public health hazard** because people have not and will never come into contact with harmful amounts of site-related contaminants in groundwater, and contaminated soil was successfully remediated.

Sources: OHM Remediation Services Corp., *Removal activities report for DeKalb Pest Control Services, Inc.: Avondale Estates, Georgia*, 12/95. ATSDR, *Toxicological profile for chlordane (update)*, TP-93-103, 5/94. Roy F. Weston, Inc., *Interim site assessment report: DeKalb Pest Control Services, Inc. site*, 5/02.

Northwest Health District 2003 Hazardous Waste Sites



Brad Wiggins, CHP's former District Risk Communicator in Rome, created this map of all of the state and federal listed hazardous waste sites in the Northwest Health District. Maps are a very powerful tool for documenting and illustrating the extent of the hazardous waste site problem in Georgia. Sites were plotted by geocoding with ArcView 8.0 and ESRI StreetMap USA software. CHP will continue to develop GPS/GIS capabilities to better provide maps and other visual aids to accompany each health consultation/public health assessment and education activity. Our staff is available for consultation on GPS/GIS projects.

The goal of the **CHEMICAL HAZARDS PROGRAM** is to provide a resource to help evaluate and prevent the potential and/or actual adverse health effects to people in Georgia from exposure to hazardous chemicals in the environment.

The **CHEMICAL HAZARDS PROGRAM** provides public health assessments and consultations, needs assessments, technical assistance, community education, staff training, and referrals for district and county health departments, residents, health care professionals, and state and federal agencies.

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This newsletter is published semiannually by the Chemical Hazards Program. We welcome articles and letters for publication. Please send submissions, questions, and requests to be added to the mailing list to receive this newsletter to: jmperry@dhr.state.ga.us, or call (404) 657-6534.

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