

# Letter Health Consultation

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Dieldrin, Aldrin, and Endrin At a Home Near

CYPRESS CREEK  
MEMPHIS, SHELBY COUNTY, TENNESSEE

**Prepared by the  
Tennessee Department of Health**

OCTOBER 16, 2009

Prepared under a Cooperative Agreement with the  
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation  
Atlanta, Georgia 30333

## **Health Consultation: A Note of Explanation**

A health consultation is a verbal or written response from ATSDR or ATSDR's Cooperative Agreement Partners 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 or ATSDR's Cooperative Agreement Partner which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

You May Contact ATSDR Toll Free at  
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LETTER HEALTH CONSULTATION

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STATE OF TENNESSEE  
**DEPARTMENT OF HEALTH**  
1ST FLOOR CORDELL HULL BUILDING  
425 5TH AVENUE NORTH  
NASHVILLE, TENNESSEE 37243

October 13, 2009

Ms [name redacted]  
[address redacted]  
Memphis, Tennessee 38112

Dear [name redacted]:

Thank you for providing the Memphis and Shelby County Health Department (MSCHD) with the results of soil sampling in your yard. The MSCHD shared your results with the Tennessee Department of Health's Environmental Epidemiology Program (EEP). I understand that you hired SCS Environmental Group to take samples in your yard for pesticides associated with Velsicol Chemical Corporation.

Before 1963, Cypress Creek was used to dispose of sanitary sewage and manufacturing wastewater. Velsicol Chemical Corporation was among the industries that discharged industrial wastewater to the creek. In the 1960s, the City of Memphis lined a portion of Cypress Creek with concrete and straightened the channel in those places in order to control flooding. During the construction of the concrete liner, sediments from the creek bottom and banks were removed. The sediments were used as backfill material to bring the adjacent land even with the new concrete channel walls. Your home is not adjacent to Cypress Creek, but it is near to it.

At least 129 residential yards have been sampled near Cypress Creek. The Tennessee Department of Environment and Conservation, the U.S. Environmental Protection Agency (EPA), and EEP investigated the situation along Cypress Creek. These agencies investigated further to determine how people could be exposed to dieldrin in soil, how much they might be exposed to, and how harmful dieldrin and endrin might be to people. This was done to determine a cleanup level for dieldrin and endrin in soil. A cleanup level is used to decide whether or not an area should be cleaned up. If concentrations in soil exceed the cleanup level, a decision is then made to clean, or remediate, that area.

In 2005 and 2006, EEP and the EPA worked to figure out cleanup levels of dieldrin and endrin in the yards of Cypress Creek residents that would protect people. EEP determined cleanup levels in soil using a margin of safety method. The EEP and EPA worked independently and both came to the same conclusion. The cleanup levels are set to protect people from direct contact with the pesticides in soil. For children, direct contact includes playing in the soil and accidentally eating some of the soil they get on their fingers. For adults, direct contact includes gardening or other activities that involve working in the soil and accidentally eating some of the

soil that has gotten on their hands. Food grown on soil with dieldrin below the cleanup level will be safe to eat.

We determined that concentrations of dieldrin in soil less than 2.5 milligrams of dieldrin per kilogram of soil (mg/kg) would not harm people, including pregnant women, the elderly, and children. Therefore, the cleanup level for dieldrin in residential yards near Cypress Creek was set at 2.5 mg/kg.

Endrin is much less harmful than dieldrin. Concentrations of endrin less than 20 mg/kg in soil are safe even for children. Endrin was found in the same places as dieldrin. Therefore, if soil containing more than 2.5 mg/kg of dieldrin was removed from yards, then endrin would also be removed.

The results of SCS sampling and analysis at your home are summarized in the table below.

<b>Results of pesticide sampling and analysis in the soil at [address redacted], Memphis, Shelby County, Tennessee, August 22, 2009, by SCS Environmental Group, LLC.</b>			
<b>Sample number</b>	<b>Dieldrin, mg/kg</b>	<b>Endrin, mg/kg</b>	<b>Aldrin, mg/kg</b>
SS1	Not detected	Not detected	Not detected
SS2	0.094	0.046	Not detected
SS3	0.061	Not detected	Not detected

SCS compared the dieldrin concentrations to an EPA screening value of 0.03 mg/kg. A screening value is a number that is used to decide when more investigation is needed. A screening value is not the same thing as a cleanup level.

The concentrations of dieldrin found in your yard are much less than 2.5 mg/kg. The concentration of endrin found in the one sample was less than 20 mg/kg. The Tennessee Department of Health’s Environmental Epidemiology Program and the U.S. Environmental Protection Agency concluded that concentrations of dieldrin less than 2.5 mg/kg and concentrations of endrin less than 20 mg/kg in soil would not harm people. They came to this conclusion separately and independently of each other. The Memphis and Shelby County Health Department and the Tennessee Department of Environment and Conservation agreed with these results. The Memphis and Shelby County Health Department, the Tennessee Department of Health’s Environmental Epidemiology Program, and the Tennessee Department of Environment and Conservation held a public meeting on August 8, 2006, at the Hollywood Community Center to explain the methods used to determine cleanup levels, to let people know what the cleanup levels were, and to explain the cleanup plan. EEP’s methods were detailed in the ATSDR Health Consultation: Cypress Creek Sub-Area III.

EEP concludes that contact with soil in your yard is not expected to harm your health because the concentrations of dieldrin and endrin are well below the levels for cleanup that all agencies

agreed were protective of public health. We believe that no further action is needed at your home to address issues concerning Cypress Creek pesticide contamination.

Ms Jennifer Kmet, of the Memphis and Shelby County Health Department, and I will be pleased to meet with you to discuss this further. You may contact Ms Kmet at 901-544-7717 to set up a meeting if desired.

Sincerely,



Bonnie S. Bashor, Director  
Environmental Epidemiology Program  
Communicable and Environmental Disease Services  
615-741-7247

**References:**

SCS Environmental Group, LLC letter to [REDACTED]  
[REDACTED] Project Manager. August 28, 2009

B Bashor, DM Borowski. Health Consultation: Cypress Creek Sub-Area III, Memphis, Shelby County, Tennessee, EPA Facility ID: TND981015456. U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. July 31, 2006.

## Certification

The Tennessee Department of Health prepared this Letter Health Consultation, DIELDRIN, ALDRIN, AND ENDRIN AT A HOME NEAR CYPRESS CREEK, under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). At the time this Health Consultation was written, it was in accordance with the approved methodologies and procedures. Editorial review was completed by the Cooperative Agreement partner.

  
for \_\_\_\_\_  
Technical Project Officer, Cooperative Agreement Team, CAPEB, DHAC, ATSDR

The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.

  
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Team Leader, Cooperative Agreement Team, CAPEB, DHAC, ATSDR