

# Health Consultation

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PUBLIC HEALTH EVALUATION  
OF SOIL DATA FROM

EISENHOWER PARK  
MILFORD, NEW HAVEN COUNTY, CONNECTICUT

MAY 10, 2006

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Agency for Toxic Substances and Disease Registry  
Division of Health Assessment and Consultation  
Atlanta, Georgia 30333

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

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

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HEALTH CONSULTATION

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OF SOIL DATA FROM

EISENHOWER PARK  
MILFORD, NEW HAVEN COUNTY, CONNECTICUT

Prepared by:

The Connecticut Department of Public Health  
Under cooperative agreement with  
The Agency for Toxic Substances and Disease Registry

*The conclusions and recommendations in this health consultation are based on the data and information made available to the Connecticut Department of Public Health (CTDPH) and the Agency for Toxic Substances and Disease Registry (ATSDR). CTDPH and ATSDR will review additional information when received. The review of additional data could change the conclusions and recommendations listed in this document.*

## **Background and Statement of Issue**

The City of Milford Health Department (MHD) requested that the Connecticut Department of Public Health (CT DPH) review soil testing results from Eisenhower Park, which is currently used by the public for recreational athletics and community gardening. The MHD specifically requested that CT DPH evaluate the public health implications from contaminants detected in one of the four areas of the park that was tested.

Eisenhower Park is located on North Street in Milford. It is approximately 220 acres in size and includes hiking trails, tennis courts, a playground, horse riding rings, and a community garden. It was recently proposed that the existing community gardens be relocated to another section of the park. For this reason, the Eisenhower Park Committee contracted with a consultant to test soils in the proposed garden relocation area. The primary purpose of the testing was to determine if the condition of the soils in the proposed gardening area are as conducive to gardening as the soils located in the existing area. In addition to testing soils in the proposed garden relocation area, the consultant also tested soils in the existing gardening area, the horse riding rings, and a “control” area located adjacent to the existing garden. According to the MHD, the control area is overgrown with brush and is not used regularly or intensively. In each of the four areas tested, 30 soil samples were collected from a depth of 8 to 10 inches below the soil surface. Samples from each of the areas were composited and analyzed for physical properties (including nutrients), biological parameters and chemical parameters (heavy metals, pesticides and herbicides).

### *Environmental Data*

CT DPH limited its evaluation to the chemical parameters. It did not evaluate the physical and biological parameters, as those parameters are related to soil fertility. Soil results from the existing garden, the horse riding rings, and the proposed garden show that pesticides and herbicides are below the limits of detection. Several metals (arsenic, copper and lead) were also detected but at levels well below Connecticut’s cleanup standards for soil (CT Residential Direct Exposure Criteria, Remediation Standards Regulations; CT RDECs). These standards were developed to be protective of frequent, long-term contact with soil by children and adults. In contrast, soil results from the “control” area show arsenic and dieldrin (a pesticide) at levels above the CT RDECs. Copper and lead were also detected in the control area, but at levels well below the CT RDECs. Pesticides 4,4’-DDD, 4,4’-DDE and 4,4’-DDT were also detected but at levels below the CT RDECs. Table 1 below provides the soil concentrations of arsenic and dieldrin in the control area and their respective CT RDECs. Dieldrin and DDT are pesticides that were once widely used but have been banned in the United States for many years. DDD and DDE are chemicals similar to DDT that are commonly found as contaminants in commercial DDT preparations (ATSDR 2002).

Table 1. Soil Results from the Control Area, Eisenhower Park, Milford, CT

Contaminant	Concentration (mg/kg)	RDEC (mg/kg)
Arsenic	49.5	10
Dieldrin	0.400	0.038

**Discussion**

*Exposure Pathway Analysis*

To evaluate potential exposures to contaminants in the soil of the control area in Eisenhower Park, CT DPH evaluated the contaminant concentrations and considered how people might come into contact with the contaminants. Park visitors (adults and children) might occasionally come into contact with the soil while walking through the overgrown area. Because the area has no specific designed use and is overgrown with brush, it is unlikely that regular use of this area will occur. In addition, the park has many other active recreation areas (playground, horse riding trails, hiking trails), which makes it more likely that park visitors will use those areas rather than the overgrown control area.

*Public Health Implications for Adults and Children*

To evaluate public health implications to adults and children from occasional exposure to contaminants in soil in the control area, CT DPH evaluated the theoretical cancer risks from exposure to arsenic and dieldrin in soil. CT DPH assumed that a park visitor would come into contact with soil two days per week for 6 months per year, for 15 years. This exposure frequency and duration is quite conservative. It is likely that the actual exposure would be much lower. CT DPH also assumed that the composite soil sample (taken from the 8-20 inch depth interval is representative of surface accessible soil. Given these exposure assumptions, the cumulative excess lifetime cancer risk from arsenic and dieldrin is four excess cancers in one million exposed individuals. This risk is an extremely low theoretical risk and thus, no adverse health effects are expected. It is important to note that although the soil samples were not collected from the accessible surface soil (upper 3 inches), CT DPH made the assumption that the contaminant levels do represent surface soil. Given the conservative assumptions and limited opportunity for exposure, there still would not be a public health concern even if the contamination actually was present in surface soil.

**Conclusions and Recommendations**

Based on CT DPH’s evaluation of the environmental data provided by the MHD, arsenic and dieldrin present no apparent public health hazard and no actions to reduce or prevent exposure are necessary at this time. However, if conditions change in the future such that the overgrown control area is used more frequently and intensively, the MHD should ensure that additional soil testing is done in the area. Depending on the sampling results and future use, additional actions may be needed in the future to prevent exposure to the contamination in the soil. The Town of Milford should consider an appropriate institutional control such as placing a notice in the town file, land records, or maps held by the Town Parks/Recreation Department referencing the current soil testing results for the Park and advising further testing if usage changes. In addition, the Town of Milford may want to consider soil testing in other parts of the park that are used intensively. The presence of elevated arsenic and dieldrin (and low levels of DDT) may be related to the historic use of pesticides in the park.

References:

ATSDR 2002. ToxFAQs for DDT, DDE and DDD. Available at <http://www.atsdr.cdc.gov/tfacts35.pdf> Accessed April 28, 2006. Dated September 2002.

## CERTIFICATION

The Health Consultation for the Public Health Evaluation of Soil Data from Eisenhower Park in Milford, Connecticut was prepared by the Connecticut Department of Public Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It was completed in accordance with approved methodology and procedures existing at the time the health consultation was initiated. Editorial review was completed by the ATSDR Cooperative Agreement Partner.

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The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.

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