

Letter Health Consultation

Evaluation of Childhood Blood Lead

RARITAN BAY SLAG

OLD BRIDGE, MIDDLESEX COUNTY, NEW JERSEY

EPA FACILITY ID: NJN000206276

FEBRUARY 23, 2009

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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LETTER HEALTH CONSULTATION

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Prepared By:

New Jersey Department of Health and Senior Services
Under Cooperative Agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry



State of New Jersey

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HEATHER HOWARD
Commissioner

February 18, 2009

Michael Sivak
U.S. Environmental Protection Agency, Region 2
290 Broadway
New York, N.Y. 10007-1866

Dear Mr. Sivak:

This Letter Health Consultation (LHC) has been completed for the Raritan Bay Slag site located in Laurence Harbor, Middlesex County, New Jersey. The LHC provides an analysis of childhood blood lead data for children living in Laurence Harbor.

Statement of Issues

This LHC was prepared in response to a U.S. Environmental Protection Agency (USEPA) request that the New Jersey Department of Health and Senior Services (NJDHSS), through a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry, evaluate extant blood lead data for children living in the Laurence Harbor section of Old Bridge Township. Lead slag was deposited along the beachfront in the late 1960s and early 1970s. Elevated levels of lead and other metals have been identified by the New Jersey Department of Environmental Protection and the USEPA in samples collected from a number of locations near the seawall containing the slag. Both surface soil and surface water lead concentrations were found to be, in some cases, many times higher than comparison values used for screening environmental contamination. Consequently, the beach and seawall may pose a lead hazard risk to those using the beach and the surrounding residential community.

Discussion

Childhood Blood Lead Data

The concentration of lead in blood is an excellent indicator of exposure to lead. Current state regulations, in accordance with federal Centers for Disease Control and Prevention (CDC) guidelines, require health care providers to perform a blood lead test on all one and two year old children. This is the age at which lead poisoning is most damaging to the developing nervous system. New Jersey State regulation requires all clinical laboratories to report the results of all blood lead tests to the NJDHSS. Prior to July 1999, only blood lead tests above 20 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$) were required to be reported. While the current CDC blood lead guideline is 10 $\mu\text{g}/\text{dL}$, all blood-lead test data are reportable to the NJDHSS' Childhood Lead Poisoning Prevention Surveillance System.

For the purpose of this evaluation, all blood lead data were requested from the Department's Childhood Lead Poisoning Prevention Surveillance System for Laurence Harbor over the period January 1999 to July 2008. Laurence Harbor children were determined by mailing address information provided to the Childhood Lead Poisoning Prevention Surveillance System by laboratories conducting the tests. To ensure that multiple testing of a child over a short period of time would not affect the analysis, only the highest test result was included in the final data set when more than one value was available per child over any three month period.

Results

A total of 355 blood lead tests from Laurence Harbor children were available during the survey period. Of these, 11 (3%) were from tests from the same children within a three month period and removed from the analysis. The age range for the remaining 344 blood lead tests was three months of age to 16.5 years of age, with an average age of 3.7 years. The distribution of tests by sex was 43.6% female, 45.9% male, and 10.5% unknown.

The geometric mean of the tests was 2.33 $\mu\text{g}/\text{dL}$ with a 95% confidence interval of 2.19 $\mu\text{g}/\text{dL}$ to 2.48 $\mu\text{g}/\text{dL}$. A total of 2 (0.6%) of the tests exceeded the CDC blood lead guideline of 10 $\mu\text{g}/\text{dL}$, with a maximum concentration of 22 $\mu\text{g}/\text{dL}$. As a comparison, the proportion of tests for the years 2005 and 2006 exceeding the CDC guideline was approximately 2.0% for the state and just under 1.0% for Middlesex County.

Limitation of Analysis

The childhood blood lead data accessible from the Childhood Lead Poisoning Prevention Surveillance System provides the residential address of the child at time of testing. No information is available as to which children, if any, have come in contact with the Raritan Bay Slag contamination. While children who live close to the Laurence Harbor beaches may be more likely to frequent the beach and seawall, people may come from distant points to use this area for recreation.

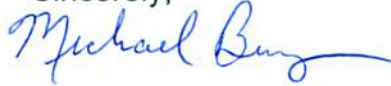
Conclusions and Recommendations

In conclusion, blood lead levels in children living in Laurence Harbor were relatively low, with a lower proportion of tests exceeding the CDC blood lead guideline than generally seen for the state as a whole. A principal source of lead exposure for children in the United States is household dust and soil contaminated by leaded paint. This evaluation does not provide any evidence that the Raritan Bay Slag site has had an adverse affect on childhood blood lead levels in this community. However, it is important to note that children at greatest risk are those that spend time on the lead contaminated sections of the beach and seawall. While we were unable to find an impact in the adjacent community, this analysis does not rule out the potential risk from recreational use of these areas. Consequently, in order to protect children using this

recreational area, either limiting access to the contaminated areas or removal of the contaminated material is a prudent public health measure.

If you have any questions concerning this review, please feel free to contact me at (609) 584-5367. Thank you.

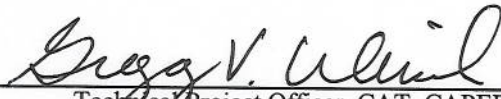
Sincerely,



Michael Berry
Consumer and Environmental
Health Services

CERTIFICATION

The letter health consultation for the Raritan Bay Slag (Evaluation of Childhood Blood Lead Data) site was prepared by the New Jersey Department of Health and Senior Services under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was initiated. Editorial review was completed by the cooperative agreement partner.



Technical Project Officer, CAT, CAPEB, DHAC

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



Team Leader, CAT, CAPEB, DHAC, ATSDR