

Health Consultation

BRIDGETON CITY LANDFILL

BRIDGETON, CUMBERLAND COUNTY, NEW JERSEY

CERCLIS NO. NJD980530927

SEPTEMBER 30, 1997

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia

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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Prepared by:

Exposure Investigation and Consultation Branch
Division of Health Assessment and Consultation
Agency for Toxic Substances and Disease Registry

BACKGROUND AND STATEMENT OF ISSUES

The Environmental Protection Agency (EPA) Region II asked the Agency for Toxic Substances and Disease Registry to evaluate the results of environmental samples (i.e., soil, sediment and groundwater) collected from Bridgeton Landfill and provide comments on the health implications regarding these results.

Bridgeton Landfill is on 27 acres in a 100-year floodplain in the City of Bridgeton, Cumberland County, New Jersey. It is an inactive, unlined landfill that received municipal, nonchemical, and industrial wastes from the 1950s until 1987. The landfill is bordered by the Cohansey River to the east, Raceway Creek to the west, the Bridgeton City Park and Zoo to the north, and the Swedish Farmstead Museum to the southwest. Raceway Creek flows into the Cohansey River south of the landfill, and both are within tidal influence of the Delaware Bay [1]. Site access by foot is not restricted; however, a gate is in place to prevent vehicles from entering the landfill.

According to EPA [1], it is possible that leachate runoff from the landfill flows to Raceway Creek and the Cohansey River. Groundwater in the vicinity of the site flows east/northeast. The groundwater is the primary source of drinking water in this area, and within 4 miles of the site, it is used for irrigation, industrial purposes, and food processing [1]. The closest active well water system supplying potable water is about 1,000 feet southwest of the site. People who live within 4 miles of the site and are not served by the public water system receive water from domestic wells that are screened from the Cohansey-Kirkwood aquifer [1]. No information was provided to indicate where these private wells are located in relation to the site.

In January 1990, EPA conducted a site inspection of the landfill and collected soil samples on site, sediment samples from the Raceway Creek and Cohansey River, and groundwater samples from six on-site monitoring wells. The maximum concentrations of metals, volatile organic compounds, and semi-volatile organic compounds detected in the soil samples were as follows: lead (49.1 parts per million [ppm]), barium (76.9 ppm), zinc (34.7 ppm), xylene (0.011 ppm), phenanthrene (0.440 ppm), butylbenzene phthalate (15.0 ppm), and bis 2-ethylhexyl phthalate (0.880 ppm). The following concentrations of chemicals were detected in groundwater samples from 6 on-site monitoring wells: tetrachloroethylene (20 parts per billion [ppb]), arsenic (34.2 ppb), chromium (50.1 ppb), lead (25.6 ppb), and nickel (55.7 ppb). The results of sediment samples collected from the Cohansey River downstream of the site revealed the presence of arsenic (22.6 ppm), barium (224 ppm), chromium (130 ppm), lead (185 ppm), nickel (36.5 ppm), selenium (4.6 ppm), vanadium (61.7 ppm), and zinc (251 ppm).

DISCUSSION

The concentrations of contaminants detected in on-site soil samples do not exceed the Agency for Toxic Substances and Disease Registry's comparison values; therefore they are not at levels of health concern. Site access by foot is unrestricted, and there was no information provided for review to indicate whether recreational activities occur on site. It seems reasonable to suggest that human exposure would not occur at this site from contaminated soil unless people spent a significant amount of time on site. However, if human exposure did occur on site, it probably would be via inhalation of disturbed soil or dust by people walking through the site. Because this type of exposure probably would be infrequent and insignificant, and the concentrations of soil contaminants are not elevated, such exposure probably would not represent a health hazard for the general population.

Arsenic, chromium, lead, and nickel were detected at elevated concentrations in groundwater samples from on-site monitoring wells. The information provided indicates that the groundwater beneath the site flows east/northeast. The closest well supplying potable water is about 1,000 feet southwest of the site. We do not know whether the remaining private residential wells in the vicinity (within 4 miles) are downgradient and whether site-related contaminants are affecting those wells. Therefore, it seems reasonable to suggest that if private wells are downgradient from the site, it would be prudent to monitor those wells to determine whether site-related contaminants are affecting them.

There is no concern for human exposure to contaminated sediments from Raceway Creek and the Cohansey River, because it is unlikely that the sediments would be disturbed and available for exposure.

CONCLUSIONS

Based on the limited data reviewed, the Agency for Toxic Substances and Disease Registry concludes the following:

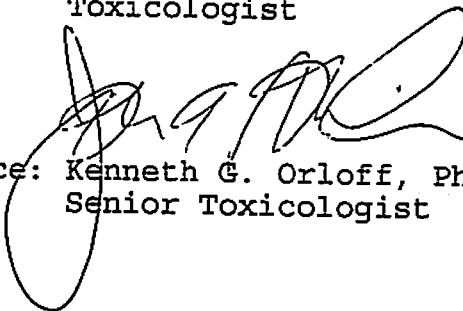
1. The concentrations of metals detected in groundwater from on-site monitoring wells are elevated and would pose a health hazard if this water were used for potable purposes. However, there was no information provided for review on residential wells supplying potable water in the vicinity of or downgradient from the site.
2. Soil contaminants at this site do not pose a health threat.
3. Contaminants detected in sediment samples from Raceway Creek and the Cohansey River do not pose a health hazard.

RECOMMENDATION

1. If any private residential wells are located downgradient from the site, consider monitoring the groundwater to determine whether site-related contaminants are affecting those wells.

Robert L. Williams

Robert L. Williams
Toxicologist



Concurrence: Kenneth G. Orloff, PhD
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REFERENCE

1. Memorandum from Gary Bielen, Site Manager, U.S. EPA Region II, to Sandra Foose, Pre-Remedial Assistant WAM, Environmental Services Division, U.S. EPA Region II, Edison, NJ 08837. March 31, 1992.