

RECEIVED
SEP 11 2000

HEALTH CONSULTATION

5th & Cleveland Street Incinerator
Jacksonville, Duval County, Florida
November 12, 1996

U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Background and Statement of Issues

The Region 4 U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) review analytical data from the 5th and Cleveland Street Incinerator Site in Jacksonville, Florida, and determine if contaminants are present in environmental media at levels of public health concern [1].

The site consists of a 2.8 acre parcel located in a residential community approximately 1 mile north of downtown Jacksonville. The city burned municipal waste in the incinerator from before 1943 to approximately 1969. Ash that was generated as a result of incinerator operations was disposed of on the site; specific information on disposal (buried or surface) was not provided. The site was developed as a city park (Emmett Reed Park) in the 1970s, with a baseball diamond, 2 basketball courts, a picnic area, and 2 support buildings.

In February 1996, 14 soil samples were collected at the site and 3 samples were collected adjacent to the site; the samples were described as being samples of 'at- or near-surface ash'. Samples were analyzed for RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). Metals were detected at the following maximum concentrations;

Arsenic	37.5 milligrams per kilogram (mg/kg)
Barium	561
Cadmium	3.72
Chromium	17.7
Lead	3,950
Mercury	ND
Selenium	2.5
Silver	4.06

In April 1996, temporary measures were implemented to minimize potential contact with the ash; the ash was covered with gravel, compost, and grass.

A private consultant, on behalf of the city, submitted a Contamination Assessment Plan (CAP) to the State of Florida; the CAP is designed to determine the extent of contamination. Phases I and II of the CAP will determine the total areal extent of ash and the concentration of contaminants in the ash and underlying soils. Phase III will determine groundwater quality and aquifer characteristics. Phase IV will include recommendations for abatement of the contamination.

Discussion

Combustion of organic material and other waste in municipal incinerators may generate contaminants that may be present at elevated levels in the ash resulting from incinerator operations. Contaminants that may be present in the ash include metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), polychlorinated dibenzo-p-dioxins (PCDDs), and polychlorinated dibenzofurans (PCDFs) [2 - 6].

The limited sampling and analyses that were conducted at the site indicate that lead is present at levels of public health concern; however, the sampling is not adequate to characterize the nature and extent of contamination at the site. Because exposure to contaminants in soil usually occurs to the top 3 inches of the soil, analysis of surface soil samples (0 - 3 inches) is necessary to evaluate potential public health threats due to contaminants in soil.

The temporary measures implemented at the site (covering the ash with gravel, compost, and grass) are effective in minimizing potential exposures to contaminants in the ash. Although not considered to be protective in the long-term, these measures are effective if the cover material over the ash is adequately maintained.

Conclusions

Limited analytical data indicate that lead is present at levels of public health concern in ash at the 5th & Cleveland Street Incinerator Site.

The extent and nature of contamination at the site has not been adequately characterized.

The temporary measures implemented to cover the ash are effective to minimize potential exposures to contaminants in the ash.

Recommendations

Characterize the nature and extent of contamination in ash at the site; for public health purposes, characterization of contamination in surface soil (0 - 3 inches) is necessary.

Adequately maintain temporary measures at the site to minimize potential exposures until such time as permanent remedial actions are implemented.

Prepared by:

Steven Kinsler, Ph.D.
Toxicologist
Health Consultation Section
Exposure Investigation and Consultation Branch

Reviewed by:

Ken Orloff, Ph.D.
Toxicologist
Health Consultation Section
Exposure Investigation and Consultation Branch

References

1. Letter/Attached Data Package, From: Tillman McAdams, Enforcement Officer, To: Bob Safay, ATSDR, Subject: 5th & Cleveland Street Incinerator (AKA-Emmet Road Park); Health Consultation Request, Date: November 8, 1996.
2. Draft, Toxicological Profile for Polychlorinated Biphenyls, U.S. Department of Public Health and Human Services, Agency for Toxic Substances and Disease Registry, August 1995.
3. Hazardous Substances Data Base (HSDB), Tomes, 1996.
4. Comparative Assessment of Estimated Vs. Actual Emissions and Associated Health Risks From a Modern Municipal Waste Combustor, R.J. Blanchet, G.A. Pascoe, and P.H. Williams, Presented at the Society of Toxicology 1994 Annual Meeting, Dallas, Texas, Environmental Toxicology International, Inc., Seattle, Washington.
5. Toxicological Profile for 2,3,7,8-Tetrachlorodibenzo-p-Dioxin, U.S. Department of Public Health and Human Services, Agency for Toxic Substances and Disease Registry, June 1989.
6. Toxicological Profile for Polycyclic Aromatic Hydrocarbons (PAHs), U.S. Department of Public Health and Human Services, Agency for Toxic Substances and Disease Registry, August 1995.