

HEALTH CONSULTATION

**HARPER LEADER SITE/SURFACE SOIL CONTAMINATION
CERCLIS NO. CTD001166008**

**WATERBURY, CONNECTICUT
SEPTEMBER 19, 1995**

**Prepared by
The Connecticut Department of Public Health
under cooperative agreement with
The Agency for Toxic Substances and Disease Registry**

BACKGROUND AND STATEMENT OF ISSUE

The Harper Leader, Inc. site is an abandoned metal plating facility located at 1046 South Main Street in Waterbury Connecticut. The site covers approximately 2 acres and includes a two story brick building of approximately 300,000 ft². [1] The site is located in a mixed commercial-residential area. Private residences border the site to the north and east, across South Main Street. A church and catering company border the site to the south and a Roller Skating rink borders the site to the west. According to EPA staff, access to the site is unrestricted and there is evidence of trespassing and vandalism.

The Harper Leader Inc. company conducted tin and nickel-lead plating as well as other specialty plating processes from 1953 to 1988. [1] The company ceased operations in 1988 and the site has been abandoned since that time.

During an EPA removal investigation in June of 1995, copper, cyanide (total), lead, nickel, tin, and zinc were identified in surface soils. [1] EPA requested a health consultation to determine whether contaminants in surface soils at the site pose a health threat. [2]

EPA provided the *Removal Program Preliminary Assessment/Site Investigation* report for review. [2] Five surface soil samples collected at 0-3 inches were analyzed for metals and four samples were analyzed for cyanide. Four samples were collected from the southern portion of the site, three from the former lagoon area and one sample from an area just north of the lagoon. The other sample was collected from the northern portion of the site. Contaminants were detected in surface soil at the following maximum concentrations: nickel at 1,250 ppm; lead at 750 ppm; copper at 17,000 ppm; zinc at 32,000 ppm; tin at 1,020 ppm, and total cyanide at 0.074 ppm. The maximum levels of contamination were detected in samples collected from the southern portion of the site.

DISCUSSION

The most significant exposure to contaminated soil is likely to occur through incidental ingestion. Trespassing and vandalism are indicative of older children and adults accessing the site. For the evaluation of the public health implications of soil contamination at the site the following assumptions were made: highest contamination level was used for exposure dose calculations; children age six and older are more likely to frequent the site than younger children; adults may ingest 100 mg/soil per visit and children may ingest 200 mg/soil per visit.

Copper was the only contaminant that was found to pose a risk to children. While small amounts of copper are essential to good health, ingestion of large amounts of copper may cause gastrointestinal effects including nausea, vomiting and abdominal pain. [3] A single dose of 0.07 mg/kg/day in humans has resulted in gastrointestinal effects; ingestion of 200 mg of soil containing copper at 17,000 ppm will result in a dose of 0.14 mg/kg/day for a

child weighing 25 kg.[3] This is the average weight of a child between the age of 6 and 9. While it is less likely that children younger than age 6 frequent the site due to its location and recognition as an abandoned site, the risk to children younger than age six would also present a risk.

CONCLUSIONS

Based on review of the surface soil sampling data provided for the Harper Leader Inc., site, ATSDR and CT DPH conclude that levels of copper in surface soil present a risk to children who may come in contact with contaminated soil. Nickel, lead, zinc, tin and cyanide were not identified in the surface soil samples at levels of concern.

These conclusions are based on the review of the five surface soil samples and may change if additional data is collected. ATSDR and CT DPH would appreciate the opportunity to review any new data.

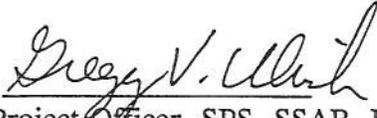
RECOMMENDATIONS

ATSDR and the CT DPH recommend the following:

1. Because copper is present in soil at levels that present a risk to children, ATSDR and CT DPH recommend that EPA limit access to the southern portion of the site where the highest level of copper was identified.
2. Additional surface soil sampling should be considered for other portions of the site, particularly areas where trespassing and vandalism activity is evident.

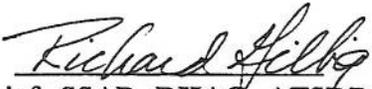
CERTIFICATION

The Health Consultation for the Harper Leader site was prepared by the Connecticut Department of Public Health 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.



Technical Project Officer, SPS, SSAB, DHAC

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


for Chief, SSAB, DHAC, ATSDR

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REFERENCES

1. United States Environmental Protection Agency. Memorandum to Louise House, ATSDR Region I from Frank Gardner concerning Health Consultation for the Harper Leader Site, Waterbury, CT. August 8, 1995.
2. Roy F. Weston, Inc.. Removal Program Preliminary Assessment/Site Investigation, Harper Leader, Inc., Site, Waterbury, Connecticut. June 23, 1995.
3. Agency for Toxic Substances and Disease Registry. Toxicological profile for Copper. Atlanta: ATSDR, December 1990.
4. Agency for Toxic Substances and Disease Registry. Toxicological profile for Nickel. Atlanta: ATSDR, April 1993.