CALUMET CONTAINER

HAMMOND, LAKE COUNTY, INDIANA

EPA FACILITY ID: IND9805cT193

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
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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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Background and Statement of Issues

In response to a request from the Environmental Protection Agency (EPA) Region 5, the Indiana State Department of Health (ISDH) and the Agency for Toxic Substances and Disease Registry (ATSDR), Region 5, have prepared a Health Consultation for the Calumet Container site. The purpose of this health consultation is to evaluate data for surface and subsurface soils at this site to determine whether exposure to contaminants in soil pose a public health hazard, either currently or under a possible future reuse of the land.

The Calumet Container site (also known as The Steel Container Corporation) is located at 3631 State Line Avenue in Hammond, Lake County, Indiana. The Calumet Container site formerly housed a factory where 5- to 55-gallon drums containing chemicals and paints were emptied, cleaned, repainted, and sold for reuse. Most of the containers that were serviced were used in the paint and graphic art industries. This factory began its operations in the 1960s and closed in July 1981 when the owner/operator filed for bankruptcy. The property spans the Indiana-Illinois state border, with about 90% of the 11-acre site in the jurisdiction of the city of Hammond, Lake County, Indiana, and the remaining 10 percent in the city of Chicago, Cook County, Illinois. The Lake County Commissioners currently own the bulk of the Calumet Container site that is in Indiana. A small parcel of land in the northwest corner of the site is privately owned. The site is triangular in shape, bordered on the east and the west by railroad tracks, and on the north by 136th Street, as shown in an aerial map of the site (Appendix A, Figure 1).

During the years that the Calumet Container facility was in operation, the company was cited with numerous environmental violations regarding air and water contamination and material disposal. In April 1982, an explosion and fire consumed the main building at the site. Of the original facility, only the concrete foundation from the former building remains on-site [1]. In May 1982, EPA began a 14-day Immediate Removal Action. Thirty cubic yards of sludge and 5,500 gallons of contaminated liquid were packaged on site and transported off site for final disposal at an approved facility. Samples from surface water runoff, contents of processing and holding on-site tanks, and soil at the loading dock area at the time immediately following the fire contained lead, chromium, cyanide, arsenic, phenolics, other organic compounds, oil, and grease.

A small intermittent pond and wetland area is in the northeast corner of the property. About ¼ mile across 136th Street to the north is Wolf Lake (I

screening levels. However, the limited number of

Table 2: Exposure Pathway Analysis

Media	Exposure Point	Exposure Route	Exposure Time	Exposed Population	Chemicals of Concern	Completed Pathway
Soil	On site	Inhalation Ingestion Dermal contact	Past/Current	Trespassers	Lead Cadmium Arsenic Chromium	Yes
	On site		Future	Recreational users		Yes (without remediation)
	Off site		Present/ Future	People in homes of trespassers		Unknown
Surface water	On site	Dermal	Past/Current	Trespassers	Unknown; only sediment sampled	Yes
			Future	Potential recreational		Yes
Groundwater	On site	Ingestion Dermal	Past/current	Trespasser	Lead Chromium	No
			Future	Potential recreational		No
Groundwater	Off site: direct contact	Ingestion Inhalation Dermal	Past/Current	None	Unknown: no characterization of migration of on-site contamination	No, residents in area on municipal water supply
			Future	None		
	Off site: indirect contact	Biota impacted by migration of GW contaminants into SW	Future	Fishing population		No evidence of current impact or completed pathway

Hazard Evaluation

Lead

Lead is a natural component of soil and dust. Typical background levels in soil range from 10–50 parts per million in an uncontaminated setting. Exposure to lead can occur through many sources, particularly by breathing contaminated dust in air, drinking water, eating foods, or by swallowing or touching dust or dirt that contains lead. The primary health concern with lead exposure is the adverse effects on development of the nervous system in children, resulting in diminished mental capacity. The Centers for Disease Control and Prevention (CDC) has concluded that the most common source of lead exposure for children is lead-based paint that has deteriorated into paint chips and lead dust and that the most common sources of lead exposure for adults are occupational [9,10]. The lead contamination at Calumet Container is likely to be

the result of the recycling of drums containing lead-based paint material and disposal of lead-containing waste.

Given the uncertainty about the frequency that young children may trespass on this property and be exposed to the lead contamination in the soil, it is difficult to quantify the level of exposure. However, because there are many potential sources of children's exposure to lead, direct contact to contaminated soil from this site could add to the existing body burden children may already have from other sources. Because elevated lead levels occur throughout the property, ranging up to 46,000 ppm, children may be exposed in many areas. In addition, future reuse of the property as a recreational area will allow the area to more accessible to children, resulting in greater exposures to areas of lead contamination. The form of lead in paint is lead oxide, a form that is particularly soluble and readily absorbed in the gastrointestinal tract. Therefore, even intermittent exposure to these levels could result in increases in blood lead levels for children who play in these areas. It is expected that trespassers on the property are mainly older children and adults. However, if the property is re-used for a recreational area, it is anticipated that people will be encouraged to use the property and increase the potential exposure of young children to site contaminants. This is a particular concern because of the sensitivity of young children to the effects of lead.

Other Contaminants

The maximum concentrations detected in surface soil (summarized in Table 1) for several other chemicals, including cadmium (27,000 ppm), arsenic (280 ppm), chromium (4,600 ppm), PCBs (5.7 ppm), and barium (6,000 ppm) exceeded health-based screening levels. Exposure of current trespassers or future recreational users to these levels consistently across the site would represent a public health hazard. However, due to the limited sampling for contaminants other than lead, it is uncertain whether these concentrations would be found throughout the site. It is also uncertain whether these contaminants would be co-located with lead, and therefore, would have a similar pattern of distribution. These uncertainties result in a data gap that limits the evaluation of potential exposure to these contaminants.

There was also limited sampling of surface soils for VOCs, but because of their volatility, they would not be expected to be retained in surface soils. The levels of toluene and xylene were only elevated above screening levels in subsurface soils, which would not be considered to be a concern for exposure.

In spite of these uncertainties, the scope of the site remediation will be based on the distribution of lead contamination in surface and subsurface soil. As a result, it would be expected that these other contaminants will also be removed with the lead. It will be important to confirm and verify through sample collection and analyses that all contamination at the site has been addressed. If the removal action does not take place, additional sampling to characterize the extent of cadmium, arsenic, chromium, and PCB contamination would be needed to further assess these hazards.

Recommendations

3. U.S. Census Bureau; AmericanFactfinder, http://factfinder.census.gov/servlet/safffacts.

4. Indiana State Department of Health Memorandum, site visit, Calumet Container, November 2002.

5. Indiana Department of Environmental Management Office Memorandum, analytical results for Calumet Container, November 2001.

6. Roy F. Weston, Incorporated, Calumet Container site assessment report, April 2002.

7. Roy F. Weston, Incorporated, Calumet Container site assessment and extent of contamination report, July 2002.

8. U.S. Geological Survey Water Resources Investigation Report (95-4253) Groundwater in NW Indiana and Lake Calumet Area of Illinois.

9. Herbert L. Needleham, Human Lead Exposure, CRC Press, 1992.

10. Agency for Toxic Substances and Disease Registry, Toxicological Profile for Lead (Update), July 1999.

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Certification

This Calumet Container Health Consultation was prepared by the Indiana State Health Department in cooperation with the Agency for Toxic Substances and Disease Registry. The health consultation is in accordance with guidelines and procedures present at the time the health consultation was begun.

Technical Project Officer
DHAC, SSAB, CAT

This health consultation has been reviewed by the Division of Health Assessment and Consultation, ATSDR. ATSDR concurs with the findings in the health consultation.

Chief, CAT, SSAB, DHAC, ATSDR

Appendix A

Calumet Container Site Maps

Figure 1. Calumet Container Site
General Location

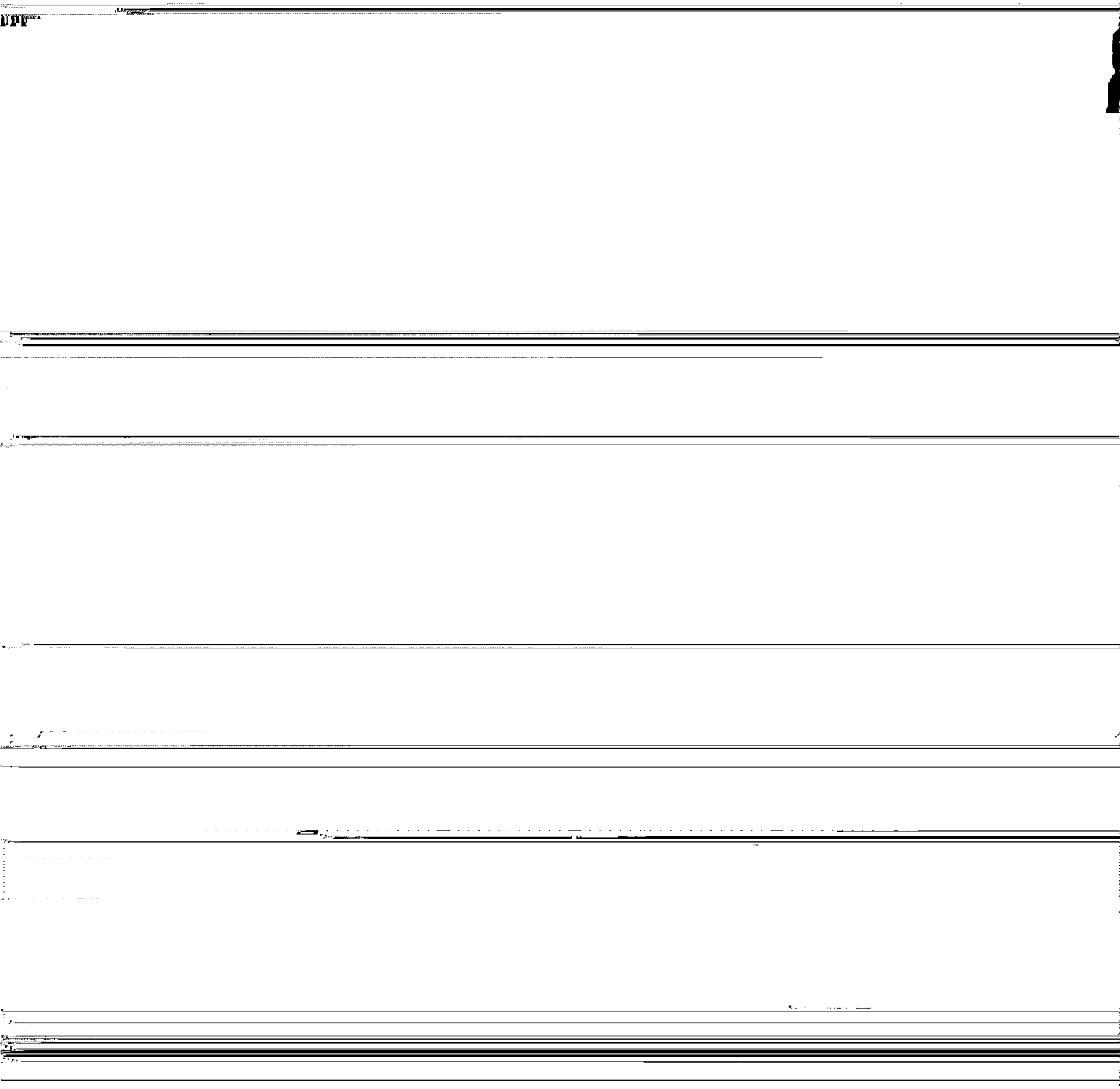

Figure 2. Calumet Container Site
Site Features

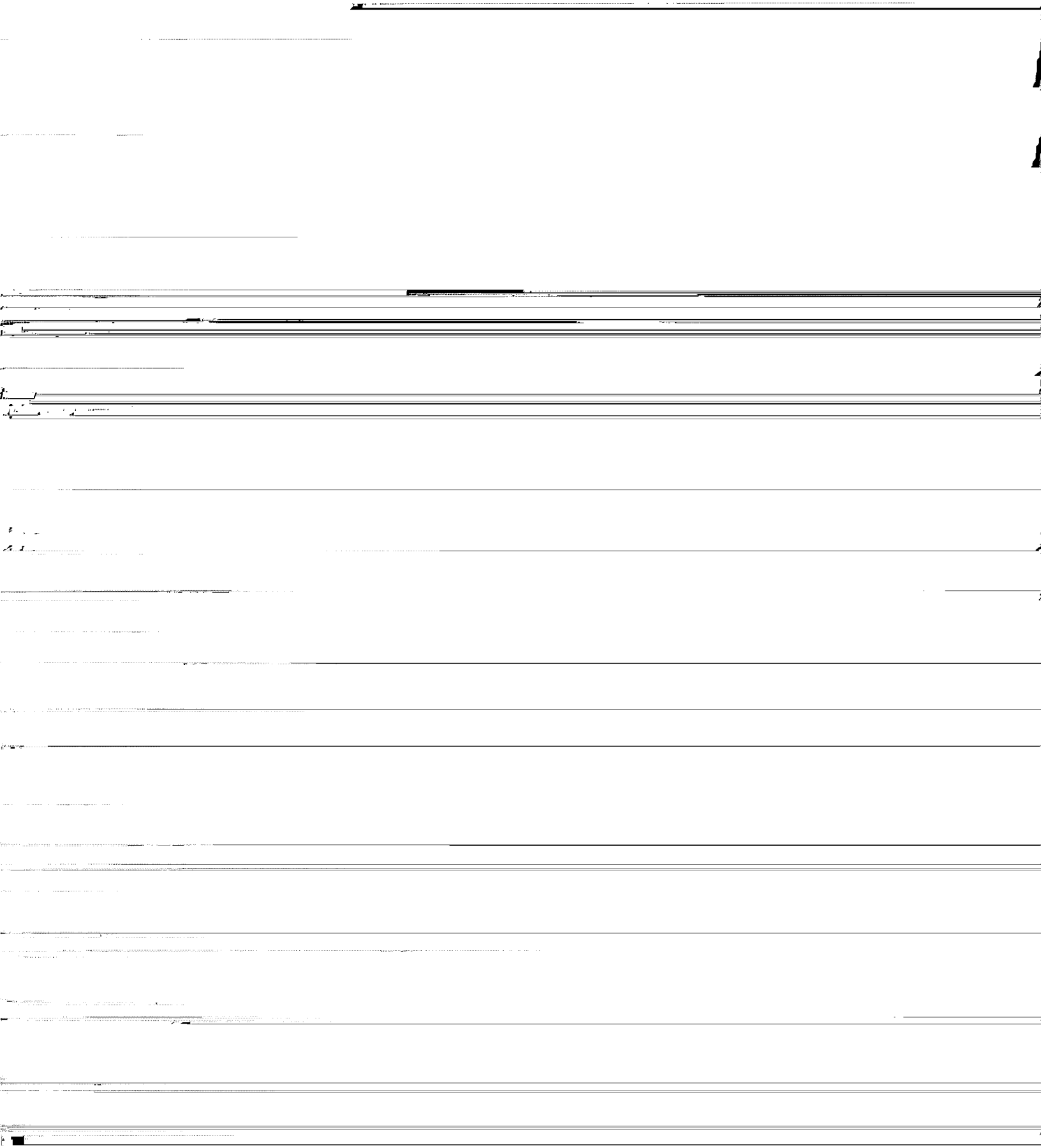

Figure 3: Topographical map of Calumet Container site and surrounding area (from Reference 2)