Proposed Plan for Cleanup at the

Lake Calumet Cluster Site

Chicago, Illinois **June 2006**

Introduction

This Proposed Plan[1] announces the recommendation of the Illinois Environmental Protection Agency (Illinois EPA) for addressing contaminated soil and buried wastes at the Lake Calumet Cluster (LCC) site located in Chicago, Illinois (see Figure 1). The proposed remedy would provide a protective cover that would prevent direct contact with the buried wastes and prevent surface water runoff from coming into contact with site contaminants (see Alternative 4 on page 10 for details).

While there is a groundwater contaminant plume associated with the LCC site, groundwater contamination will be addressed under a separate operable unit.

The Illinois EPA is issuing this Proposed Plan as part of the public participation requirements of Section 300.430 (f)(2) of the National Oil and Hazardous Substances Contingency Plan (NCP; 40 Code of Federal Regulations [CFR] 300. 430(f)(2)), and 42 United States Code §9617[1]. This Proposed Plan summarizes information explained in greater detail in the Focused Feasibility Study (FFS) report and other documents contained in the Administrative Record file for this site.

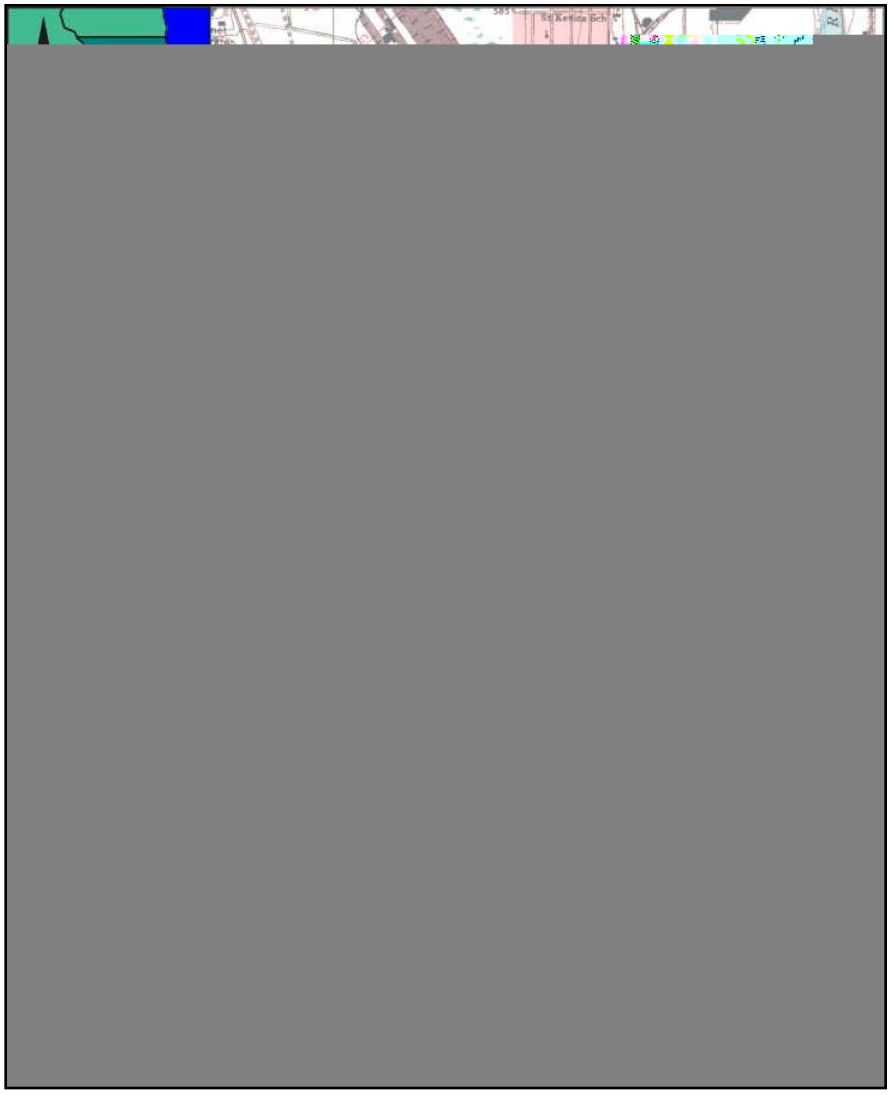

Figure 1 – Site Location Map

The objective of the FFS was to summarize the nature and extent of contamination at the site; to evaluate alternatives to address contamination at the site; and to evaluate alternatives to address threats to human health and the environment or potential threats posed by the site. The Administrative Record for the site is located in the Illinois

[1] Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, requires publication of a notice and Proposed Plan for the site remediation. The Proposed Plan must be made available for public comment.

EPA, Bureau of Land records in Springfield, Illinois and in information repositories at the Harold Washington and Hegewisch Public Libraries in Chicago, Illinois.

The Illinois EPA encourages the public to review these documents to gain a more comprehensive understanding of the site and the activities that have been conducted at the site. Public input is an important part of the cleanup decision making process. The public is encouraged to review and comment on the alternatives presented in this Proposed Plan (see "For Additional Information" on page 12).

Site Background

Location and Description

The LCC site is a group of several land and waste storage/disposal facilities located in southeastern Chicago, Cook County, Illinois (latitude 41°41'15.0" North and longitude 87°34'35.0" West). The site is approximately 87 acres in size and is bordered by the Paxton I Landfill to the north, Land and Lakes #3 Landfill to the west, the Norfolk and Western Railroad right-of-way to the east, and 122nd Street to the south (see Figure 2). The LCC site consists of the following individual areas: Alburn Incinerator, an Unnamed Parcel, U.S. Drum II, and Paxton Avenue Lagoons. A site location map is presented in Figure 1, and an oblique aerial photograph of the site with area features is presented as Figure 2.

From approximately 1900 to the 1970s, nearby industries deposited slag and other wastes that raised the ground surface at the LCC site to an elevation just above the water table. From 1940 to 1992, much of the area was used for unpermitted waste disposal. The contaminated runoff in the area impacts wetland soils and area hydrology.

Site History

More than a century ago, the Calumet region was the largest wetland complex in the Great Lakes area, but by

storage and transfer facility operated at the site.

In April 1979, a temporary restraining order was issued by the Illinois EPA and operations ceased due to the discovery of 6,000 55-gallon drums, four open-dump lagoons of sludge and various wastes, 25 semi-trailers, and three bulk liquid trucks. The site ceased operations shortly thereafter. A removal action was completed in December 1979. This action included the removal of an estimated 34,100 gallons of liquid and semisolid wastes. An estimated 1,750 drums were left on site inside earthen berms.

An Illinois EPA removal action occurred at the site from December 1984 through July 1985. During construction of a new access road, an additional 1,500 buried drums were discovered. The ends of the drums had been cut off or the drums had been punctured to allow the contents to drain into the ground prior to or at the time of burial.

By July 1, 1985, all 6,000 drums were removed and approximately 341,000 gallons of semisolid wastes and liquids, 435 cubic yards of contaminated soil, and 62,000 gallons of standing water were disposed of. Following the removal action, the area was leveled and partially covered.

Paxton Avenue Lagoons

The Paxton Avenue Lagoons consisted of three lagoons, a berm composed of soil and crushed drums, and an area of oily soil. The lagoons were reportedly active during the 1940s, and a variety of chemical wastes from nearby steel mills were allegedly brought to the site. A large number of drums are also alleged to have been buried here. Illinois EPA samples collected in 1985 indicated significant levels of volatiles, semivolatiles, polychlorinated biphenyls (PCBs), and heavy metals. In 1990, the Illinois EPA conducted an immediate remedial/early action at the site, which involved the removal of 60 drums of hazardous materials and the incineration/low temperature thermal destruction of 2,200 cubic yards of acidic soil. The lagoon area was capped with clay. The lagoons have been closed and fenced since October 1993.

Summary of Previous Investigations

Investigations at the LCC site have been conducted by Illinois EPA, U.S. EPA, and various consultants for the site representatives.

Since 1998, a total of 123 surface soil samples and 19 subsurface soil samples have been collected and submitted for laboratory analyses. The attached Table 1 provides a

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Surface and Subsurface Soil Sampling Results

Between August 1998 and June 1999, surface and subsurface soil samples were submitted for laboratory analysis of approximately 135 different compounds. Based on the detected concentrations in these samples, the following COPCs were identified:

- Metals – arsenic, barium, chromium, lead, and mercury;
- PCBs and Pesticides – Aroclor 1254, beta-BHC, and Dieldrin;
- VOCs – naphthalene; and
- Polynuclear aromatic hydrocarbons (PAHs) - benzo(a)pyrene, benzo(a)-anthracene, and dibenzo-(a,h)anthracene.

The former Alburn incinerator was the most consistently contaminated parcel on the LCC site. Two other areas that consistently showed contamination were the southwestern section of the Unnamed Parcel and the area immediately south of the Alburn parcel.

Sediment and Surface Water Sampling Results

In addition to surface and subsurface soil sampling, sediment and surface water samples were collected from the LCC site and from the adjacent Indian Ridge Marsh for laboratory analysis. Based on the detected contaminant concentrations, the following sediment and surface water COPCs were identified:

Sediment:

Solid Waste:

With the exception of one test pit, solid waste was encountered at all of the excavation locations. In general, at each excavation pit with solid waste, there was 1 foot to 3 feet of soil covering the waste

risk. A summary of the individual assessment end-point findings is provided below:

- Wetland structure and function were predicted to be at risk based on adverse effects on fish, benthos, and nearly all wildlife functional groups from a variety of chemicals in water, sediment, and biota.
- Fish recruitment and nursery function were predicted to be at risk for two

Annual Operation and Maintenance (O&M) - $0
Present Worth[2] - $0

Alternative 2 - Capping of Existing Wastes with a Permeable Soil Cover

For this alternative, the entire site would have a permeable soil cover placed over it that would create an appropriate grade for stormwater management. A permeable cap would allow for surface water runoff to infiltrate through the cap and to come into contact with the buried waste, which would leach additional contaminants into the groundwater. Activities included under this alternative include site preparation / grading, placement of the cover material, and planting of a vegetative cover, which would consist of native plants

similar, with the only distinction being the complexity of the cap systems, Alternative 4 is the only alternative that fully meets all the ARAR requirements.

Alternative 4 fully satisfies the evaluation criteria for the LCC site. Alternative 4 would protect human health and the environment, provide long-term effectiveness, comply with state and federal environmental regulations, be implementable and cost effective, and satisfy the RAOs established for a presumptive remedy for a landfill.

Based on new information or public comments, the Illinois EPA, in consultation with the U.S. EPA, may later modify the preferred alternative or select another remedial action presented in the Proposed Plan. The public is therefore encouraged to review and

Table 1
Summary of Detected Surface Soil Concentrations
Lake Calumet Cluster Site
Chicago, Illinois

Compound	Frequency of Detection	Minimum Detection	Average Detection	Maximum Detection	Region 3 Human Health RBC[a]	Number of Samples Exceeding RBC	RCRA EDQL[b]	Number of Samples Exceeding RCRA EDQL
Metals (milligrams per kilogram)								
Arsenic	83/120	0.8	7.8	26	4	74/120	EDQL	EDQL-7.2