



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

US EPA RECORDS CENTER REGION 5



495114

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: Request for Approval and Funding for a Time-Critical Removal Action at the Heart of Chicago Area Soils Site, Chicago, Cook County, Illinois (Site ID # C54V)

FROM: Craig Thomas, On-Scene Coordinator *Cy Thomas*
Emergency Response Branch 2, Section 3

THRU: Samuel Borries, Chief *Sam Borries*
Emergency Response Branch 2

TO: Margaret Guerriero, Acting Director
Superfund Division

I. PURPOSE

The purpose of this Action Memorandum is to request and document your approval to expend up to \$1,034,128 to conduct a time-critical removal action at the Heart of Chicago Area Soils Site ("Site" or "HOC Site") located in Chicago, Cook County, Illinois. The proposed time-critical removal action will mitigate the threats to public health, welfare, and the environment posed by the presence of lead-contaminated surface soil in residential properties located at the Site by the proper excavation and off-site disposal of lead contaminated soil in the residential yards. No precedent-setting issues are associated with this non-NPL Site.

The Action Memorandum would serve as approval for expenditures by EPA, as the lead technical agency, to take actions to abate the imminent and substantial endangerment posed by hazardous substances at the Site. The proposed removal of hazardous substances would be taken pursuant to Section 104(a)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9604(a)(1), and Section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.415. Based on the level of hazardous substances and the threat to the community, this removal action is considered time-critical. The project will require an estimated 45 days to complete.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: ILN000507602

RCRA ID: none

State ID: none

Category: Time-Critical Removal Action

The Site consists of approximately 580 acres, and is located in the Heart of Chicago neighborhood in Chicago, Illinois (Figure 1). The Site is bounded by 16th Street and railroad tracks to the north, Loomis Street to the east, South Blue Island Avenue to the South, and Campbell Street and Railroad tracks to the west (Figure 2).

In 2013, 21 soil samples from 20 residential properties were collected within the Heart of Chicago Area Soils Site (originally called the Harrison Park site) just west of the Pilsen Area and East Pilsen sites (see Figure 2) as part of the background study area for the Pilsen Area site. An additional residential property was identified, and two samples were collected from it in March 2016. All 21 residential properties had lead above the 2014 EPA Removal Management Level (RML) of 400 milligrams per kilogram (mg/kg) (hazard quotient [HQ] of 3) for residential soil, with the highest concentration at 3,700 mg/kg (see Figure 3).

In addition to chemical analysis, EPA's National Enforcement Investigations Center (NEIC) conducted a Scanning Electron Microscopy (SEM), Energy Dispersive X-Ray Spectroscopy (EDS) analysis of particles in the Pilsen and Heart of Chicago areas. In a February 2015 report, NEIC concluded that the lead-bearing particles in Heart of Chicago soils were consistent with slag material from an industrial source, but that the particles were not characteristic of brass and bronze foundry slag compositions (AR #1).

In 2015, historic records and aerial photos were collected along with information from parent companies via 104(e) information requests. Eleven potential industrial sources for the Heart of Chicago Area Soils site contamination were identified, including old foundry or smelting operations, of which none currently exist. In addition, these areas have been heavily reworked and redeveloped.

During 2015 and 2016, EPA collected samples from seven potential source locations. Further evaluation of a subset of the original 21 residential samples and potential source samples was conducted using SEM, EDS, and Backscatter Electron Imaging (BSE) to evaluate any potential links between the 21 residential samples and the potential source samples. This analysis confirmed that the source of lead was industrial, but no clear connection between the potential source material and the residential samples was found (AR #2). U.S. EPA's Field Environmental Decision Support Team (FIELDS) found that lead levels in the source areas were generally lower than the lead levels found in the residential areas. There appears to be no "signature" metal or metals in the source samples that would explain the elevated lead levels in the residential areas. (AR #3)

In April 2016, EPA evaluated schools in the vicinity of Heart of Chicago Site (Orozco Academy & Cristo Rey Jesuit High School) and did not find any soil exposure areas (AR #4 and AR #5).

In November 2016, EPA conducted sampling in Harrison Park, and did not find elevated lead levels (see Figure 4 and AR #6).

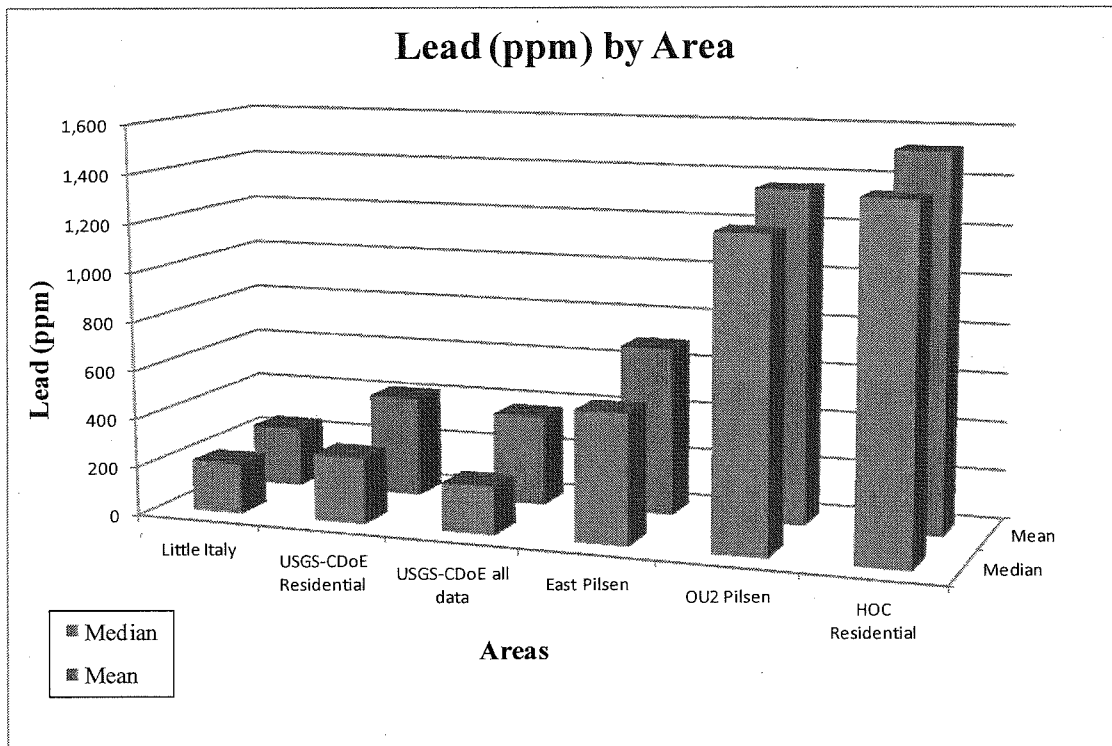
FIELDS also compared the Heart of Chicago Area Soils Site data to background data from a 2003 USGS study of lead values in Chicago (AR #7) and background samples collected in the Little Italy neighborhood to determine whether Heart of Chicago lead levels were similar to typical background urban lead conditions found in Chicago. The table, below, compares Heart of Chicago Area Soil data to the 2003 USGS study and Little Italy data, and the figure on the next page graphically demonstrates this comparison to show the Heart of Chicago area to be distinctly different from background areas with typical urban lead concentrations in Chicago. (Note: FIELDS evaluated the 2003 USGS study and determined that the maximum un-impacted background lead level in the City of Chicago was 504 mg/kg (i.e. FIELDS evaluated the data set and removed locations which appeared to have high levels of metals and or organic compounds)).

Area	N	Median	Mean	Minimum	Maximum	Unimpacted Maximum
Little Italy	11	210	249	66	760	320
USGS-CDoE Residential	9	275	415	70	1,270	504
USGS-CDoE all data	63	198	374	13	1,910	
East Pilsen	32	530	691	58	1,700	
OU2 Pilsen	30	1,250	1,357	320	3,200	
HOC Residential	21	1,400	1,524	270	3,700	

Notes:

all values are mg/kg

unimpacted maximum values are based on outlier testing and/or elevated levels of other metals



A. Site Description

1. Removal site evaluation

In 2013, 21 residential soil samples were collected from 20 properties within the Heart of Chicago Area Soils Site (originally called Harrison Park site) just west of the Pilsen Area and East Pilsen sites (see Figure 2) as part of the background study area for the Pilsen Area site. Sampling was conducted in July 2013 and August 2013.

For the July 2013 field sampling event, in all residential properties with a total surface area of approximately 5,000 square feet (ft²) or less, a two- to five-point composite sample was collected from 0-2 and 0-6 inches below ground surface (bgs) from the front yard and/or backyard. The composites were equally spaced within the respective portion of the yard, were outside of any drip zones, and away from influences of any painted surfaces.

If XRF screening showed that the 0- to 2-inch bgs composite sample was an order of magnitude different in lead concentration from the 0- to 6-inch bgs composite sample, then both composites were submitted for analytical laboratory analysis. If the two composite samples were within an order of magnitude different, then only the 0- to 6-inch bgs composite sample was submitted for analytical laboratory analysis.

Due to XRF uncertainty, two “replicate” soil samples were collected in residential yards where XRF screening indicated surface soil lead contamination near the 2014 EPA RML for residential

soil of 400 mg/kg. The EPA recommends that residential soils do not exceed 400 mg/kg of lead. RMLs help identify areas, contaminants, and conditions where a removal action may be appropriate.

Specifically, in residential yards where an XRF screening of a five-point residential yard composite sample collected from a 0- to 6-inch bgs interval indicated a lead concentration between 300 and 500 mg/kg, two additional 0- to 6-inch bgs five-point composite samples were collected and submitted for analytical laboratory analysis. These replicate samples provided EPA with additional information to determine if soil in a residential yard contained lead above or below the 2014 EPA RML for residential soil of 400 mg/kg.

Field sampling techniques used during the July 2013 sampling also included two- to five-point composite samples collected from 6- to 12-, 12- to 18-, and 18- to 24-inch bgs depth intervals. In addition, samples were collected from either the front yard or backyard, but not both. No garden, drip zone, or replicate samples were collected.

At residential properties in the Harrison Park reference area, the 0- to 6-inch bgs composite sample was submitted for analytical laboratory analysis at all locations. At approximately 30% of the locations, a sample collected below 6 inches bgs was submitted for analytical laboratory analysis based on the XRF lead concentration screening value. Soil intervals from a range of concentrations were submitted for analytical laboratory analysis in order to support EPA FIELDS in validating the data generated by the XRF in a subsequent quality assurance analysis. Soil samples were submitted under chain of custody to STAT Analysis Corporation in Chicago, Illinois.

In August 2013, EPA and its contractor conducted a second field sampling event in the Harrison Park reference area. EPA and its contractor collected samples from four residential properties located within the Harrison Park reference area. Field sampling techniques were consistent with the July 2013 field sampling event. Soil samples were submitted under chain of custody to STAT Analysis Corporation in Chicago.

An additional residential property was identified and two samples and one duplicate were collected from it in March 2016. Soil samples were submitted under chain of custody to STAT Analysis Corporation in Chicago.

All 21 residential properties had lead above the RML of 400 mg/kg, with the highest concentration at 3700 mg/kg (See Figure 3). The mean lead concentration was 1,524 mg/kg. Residents were informed of their results via letters mailed between September 2013 and November 2013, and in September 2016.

2. Physical location

The Site is located on approximately 580 acres in Chicago, Cook County, Illinois (Figure 1). The approximate center of this area is near 1902 W. 21st Street in Chicago, Illinois. This center area of the Site's geographical coordinates is 41° 51' 15.0" north latitude and -87° 40' 25.1" west longitude. The Site is bounded by 16th Street and railroad tracks to the north, Loomis Street

to the east, South Blue Island Avenue to the South, and Campbell Street and Railroad tracks to the west.

An Environmental Justice (EJ) analysis for the Site is contained in Attachment 1. Screening of the surrounding area used Region 5's EJ Screening Tool (which applies the interim version of the national EJ Strategic Enforcement Assessment Tool (EJSCREEN)). Region 5 has reviewed environmental and demographic data for the area surrounding the Site in Chicago, Illinois and determined there is a high potential for EJ concerns at this Site.

3. Site characteristics

The Site is comprised of 21 residential properties, whose soil samples were collected within the Heart of Chicago area just west of the Pilsen Area and East Pilsen sites. Surface soil samples at all 21 residential properties have lead above the RML of 400 mg/kg, with the highest concentration at 3,700 mg/kg. The mean lead concentration was 1,524 mg/kg.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

EPA documented a release of hazardous substances, pollutants, or contaminants in the soil. Lead is present in surface soil in residential yards at the Site at concentrations greater than the EPA RML of 400 mg/kg. Environmental exposure to lead may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; inhalation of fugitive dust; and ingestion of vegetables grown in contaminated soil. Potential human receptors include residents, including children under seven years of age and pregnant or nursing women; and construction and utility workers. The table below lists the components of the completed environmental exposure pathways to lead (i.e., human exposure has occurred or is occurring) at the Site:

Pathway Name	Contaminants	Point of Exposure	Route of Exposure	Exposed Population
Soil/Dust	Lead	Yards	Ingestion Inhalation	Residents, including children, pregnant or nursing women; construction and utility workers
Vegetables	Lead	Gardens	Ingestion	Gardeners who eat home grown vegetables from contaminated areas

In summary, the Site contains residential properties with elevated levels of lead in surface soils, and therefore there exists a potential for exposure of humans to lead, a hazardous substance.

Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Off-site migration of the documented hazardous substance would greatly increase the potential exposure to nearby human populations, animals, or the food chain.

5. NPL status

The Site is not on the National Priority List (NPL).

6. Maps, pictures and other graphic representations

Figure 1 Site Location Map
Figure 2 Site Layout Map
Figure 3 Residential Sample Results
Figure 4 Harrison Park Sample Results
Attachment 1 Environmental Justice Analysis
Attachment 2 Detailed Cleanup Contractor Cost Estimate
Attachment 3 Independent Government Cost Estimate
Attachment 4 Administrative Record
Attachment 5 List of affected Residential Sample numbers

B. Other Actions to Date

1. Previous actions

No significant response actions have been taken at the Site by local or state authorities.

2. Current actions

No current response actions by the residential property owners, the State, or local authorities are underway at the Site.

C. State and Local Authorities' Roles

1. State and local actions to date

No State or local response actions have been taken to address the hazardous substance releases or threatened releases at the Site.

2. Potential for continued State/local response

As documented in a March 9, 2017 letter from Illinois EPA (AR #8), the State does not have the resources (personnel and/or monetary) at this time to address the release of lead to the environment at the Site.

III. THREATS TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The conditions present at the Site may present an imminent and substantial endangerment to the public health, welfare, and the environment, and meet the criteria for a time-critical removal action as provided for in the NCP at 40 C.F.R. § 300.415(b). These criteria include, but are not limited to, the following:

300.415(b)(2)(i) - Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants, or contaminants.

During the Site assessment, EPA found all 21 residential properties had elevated lead in surface soils above the residential EPA RML of 400 mg/kg. Lead was detected at a maximum concentration of 3,700 mg/kg in a residential yard. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors, or house dust; inhalation of fugitive dust; and ingestion of vegetables grown in contaminated soil. Potential human receptors include residents (including children under seven years of age and pregnant or nursing women), construction and utility workers. These soils are unsecured and part of the environment.

Lead is a hazardous substance, as defined by Section 101(14) of CERCLA; *see also* 40 C.F.R. § 302.4. The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production. See AR #9.

300.415(b)(2)(iv) - High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.

EPA identified average lead concentrations in the top two feet of soil above the residential EPA RML of 400 mg/kg. Lead-contaminated soil may migrate as airborne particulate matter, surface runoff, percolation into groundwater, through construction activities, by children transporting soil/dust into their homes after playing in contaminated soil, and by tracking in homes via foot traffic into residences.

300.415(b)(2)(v) - Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

Cook County, Illinois receives a substantial amount of precipitation, and temperatures are normally below freezing during the winter, with regular snowfall. In the winter, the average temperature is 25.1° F and the average daily minimum temperature is 17.3° F. In the summer, the average temperature is 71.7° F, and the average daily maximum temperature is 81.7° F. The average total annual precipitation is 38.65 inches and the average seasonal snowfall is 32.6 inches. The average wind speed is about 10.7 miles per hour (according to the National Weather Service). These weather conditions may cause water, wind, and freeze-thaw erosion of the Site's

surface soil. Lead contaminated surface soil may migrate via wind and runoff off-site to other areas in the residential neighborhood.

In addition, the Chicago area historical tornado activity is slightly below the Illinois state average, and is 46% greater than the overall U.S. average (Source: <http://www.city-data.com/city/Chicago-Illinois.html>). Severe weather may impact the Site. Normal weather conditions, such as snow, rain and wind, will continue to be the main factors of hazardous substance release and migration at the Site. Migration will pose a real threat to nearby populations. The Site is located in a mixed residential neighborhood, and many of the homes in that neighborhood are in close proximity to each other, making them very susceptible to impacts from off-site migration.

300.415(b)(2)(vii) - The availability of other appropriate federal or state response mechanisms to respond to the release.

Based on information in the March 9, 2017 letter from Illinois EPA, the State does not have the funds or resources at this time to respond to a time-critical removal action of this magnitude required by conditions at the Site. See AR #8.

IV. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the known and suspected lead contamination on Site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The response actions described in this memorandum directly address actual or potential releases of hazardous substances on Site, which may pose an imminent and substantial endangerment to public health, welfare, or the environment. The response actions generally include the excavation and removal of lead-contaminated soil, backfilling excavated areas to original grade with clean topsoil, and restoring landscaping. Removal and proper disposal of contaminated soil that exceeds the action level is necessary due to elevated levels of lead in surface soil that present an imminent and substantial endangerment to public health. This approach is consistent with the Office of Solid Waste and Emergency Response (OSWER) Publication 9285.7-50 Superfund Lead-Contaminated Residential Sites Handbook (Lead Handbook) (2003) (AR #10).

Removal activities on Site will include:

- 1) Develop and implement a Site Health and Safety Plan to include a Perimeter Air Monitoring and Sampling Plan and develop measures to control dust during the

removal of contaminated soil. In addition, develop a Site-specific Work Plan, Quality Assurance Project Plan (QAPP), and Emergency Contingency Plan;

- 2) Develop and implement a Site-specific sampling plan to conduct additional assessment, confirmation, and disposal characterization sampling of soil at the Site, as needed, including bioavailability of lead;
- 3) Conduct individual property evaluations prior to removal activities. These evaluations will document the conditions of the property prior to undertaking the removal action to ensure that the properties are properly restored once the removal action is completed;
- 4) Excavation of soil at residential parcels where lead in the top twenty-four inches is equal to or exceeds 400 mg/kg., as determined by EPA's removal evaluation sampling. Soil will be excavated to a depth of approximately two feet bgs, to eliminate any direct contact and inhalation threats. Excavated material that fails toxicity characteristic leaching procedure (TCLP) for lead may be treated with a fixation agent prior to disposal. Excavation will cease if lead concentrations are less than 400 mg/kg;
- 5) Collection and analysis of confirmation samples from the bottom of each excavation. If lead levels below 400 mg/kg cannot be achieved at an excavation depth of approximately two feet bgs, excavation will cease and a visible barrier will be placed at the bottom of the excavation to alert the property owner of the existence of high levels of lead;
- 6) Replacement of excavated soil with clean soil, including approximately 6 inches of top soil to maintain the original grade. Each yard will be restored as close as practicable to its pre-removal condition. Once the parcels are sodded or seeded, removal site control of the sod or seed, including, watering, fertilizing, and cutting, will be conducted for 30 days. After the initial 30-day period, property owners will be responsible for the maintenance of their own yards. The aforementioned work shall be documented in a Work Plan;
- 7) Transportation and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 CFR § 300.440); and
- 8) Performance of any other response actions to address any release or threatened release of a hazardous substance, pollutant or contaminant that the EPA On-Scene Coordinator (OSC) determines may pose an imminent and substantial endangerment to the public health or the environment.

The removal action will be conducted in a manner not inconsistent with the NCP and consistent with the Lead Handbook. The OSC has initiated planning for provision of post-removal Site control consistent with the provisions of Section 300.415(l) of the NCP (40 C.F.R. § 300.415(l)).

The OSC has reviewed the *Lead Laws of the City of Chicago Summary: Municipal Code of Chicago*, Chapter 7-4 and *Rules and Regulations Promulgated by the Chicago Commissioner of Public Health* updated August 2008 (AR # 11), which holds property owners responsible for maintaining cover on soils with lead higher than 400 mg/kg.

The threats posed by the lead contaminated surface soils meet the criteria listed in Section 300.415(b) of the NCP (40 C.F.R. § 300.415(b)), and the response actions proposed herein are consistent with any long-term remedial actions which may be required. However, removal of hazardous substances, pollutants and contaminants that pose a substantial threat of release are expected to greatly minimize requirements for post-removal Site controls.

Off-Site Rule

All hazardous substances, pollutants, or contaminants removed off-site pursuant to this removal action for treatment, storage, or disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule at 40 C.F.R. § 300.440.

2. Contribution to remedial performance:

The proposed action will not impede future actions based on available information. No long-term remedial actions have been identified for the Site at this time.

3. Engineering Evaluation/Cost Analysis (EE/CA)

Not Applicable.

4. Applicable or relevant and appropriate requirements (ARARs)

On February 28, 2017 EPA Region 5 sent a letter to Bruce Everetts with Illinois EPA requesting the State to identify ARARs for this time-critical removal action (AR #12). Mr. Everetts responded in a letter dated March 9, 2017 that identified potential State ARARs (AR #8).

All Federal and State ARARs will be complied with to the extent practicable considering the exigencies of the circumstances.

5. Project Schedule

The removal activities are expected to take approximately 45 on-site working days to complete.

B. Estimated Costs

The Independent Government Cost Estimate is presented in Attachment 3 and the detailed cleanup contractor cost is presented in Attachment 2. The estimated project costs are summarized below:

REMOVAL ACTION PROJECT CEILING ESTIMATE	
<u>Extramural Costs:</u>	
<u>Regional Removal Allowance Costs:</u>	
Total Cleanup Contractor Costs (This cost category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies. Include a 20% contingency)	\$ 735,922
<u>Other Extramural Costs Not Funded from the Regional Allowance:</u>	
Total START, including multiplier costs	\$ 163,320
Total Decontamination, Analytical & Tech. Services (DATS)	\$ 0
Total CLP	\$ 0
Subtotal	\$ 163,320
Subtotal Extramural Costs	\$ 899,242
Extramural Costs Contingency (15% of Subtotal, Extramural Costs)	\$ 134,886
TOTAL REMOVAL ACTION PROJECT CEILING	\$ 1,034,128

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants, or contaminants at the Site which may pose an imminent and substantial endangerment to public health and safety, and the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented on Site, and the potential exposure pathways to nearby populations described in Sections II, III and IV, above, and actual or threatened release of hazardous substances and pollutants or contaminants from the Site, failing to take or delaying action may present an imminent and substantial endangerment to public health, welfare, or the environment, increasing the potential that hazardous substances will be released, thereby threatening the adjacent population and the environment.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Confidential Enforcement Addendum.

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be \$1,998,794.¹


$$(\$1,034,128 + \$200,000) + (61.96\% \times \$1,234,128) = \$1,998,794$$

IX. RECOMMENDATION

This decision document represents the selected removal action for the Heart of Chicago Area Soils Site, Chicago, Cook County, Illinois, developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision is based on the administrative record for the Site (Attachment 4). Conditions at the Site meet the NCP criteria at 40 C.F.R. § 300.415(b) for a time-critical removal. I recommend your approval of the removal action proposed in this Action Memorandum.

The total project ceiling if approved will be \$1,034,128, of which an estimated \$870,808 may be used for cleanup contractor costs. You may indicate your approval by signing below.

Approve:


for Acting Director, Superfund Division

4/27/2019
Date

Disapprove:

Acting Director, Superfund Division

Date

Enforcement Addendum

Attachments:

1. Environmental Justice Analysis
2. Detailed Cleanup Contractor Cost Estimate
3. Independent Government Cost Estimate
4. List of Affected Residential Sample Numbers
5. Administrative Record Index

¹ Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

cc: B. Schlieger, U.S. EPA 5104A (email: schlieger.brian@epa.gov)
L. Nelson, U.S. Department of Interior, **w/o Enf. Attachment**
(email: Lindy_Nelson@ios.doi.gov)
B. Everetts, Illinois EPA, **w/o Enf. Addendum**
(email: bruce.everetts@illinois.gov)

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**NOT RELEVANT TO SELECTION
OF REMOVAL ACTION**

ENFORCEMENT ADDENDUM

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ENFORCEMENT CONFIDENTIAL

NOT SUBJECT TO DISCOVERY

FOIA EXEMPT

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

Figure 1 Site Location Map

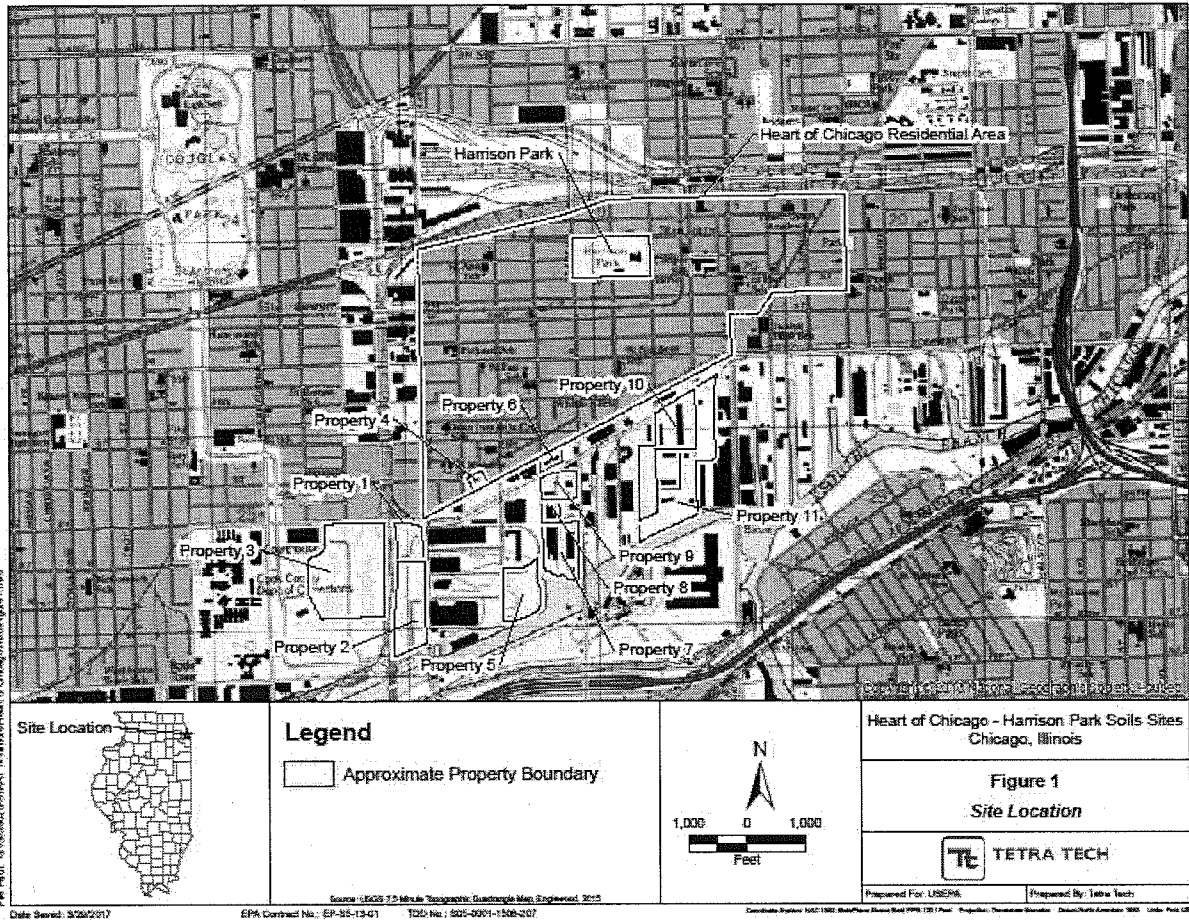


Figure 2
Site Layout Map



Figure 3 Residential Sample Results

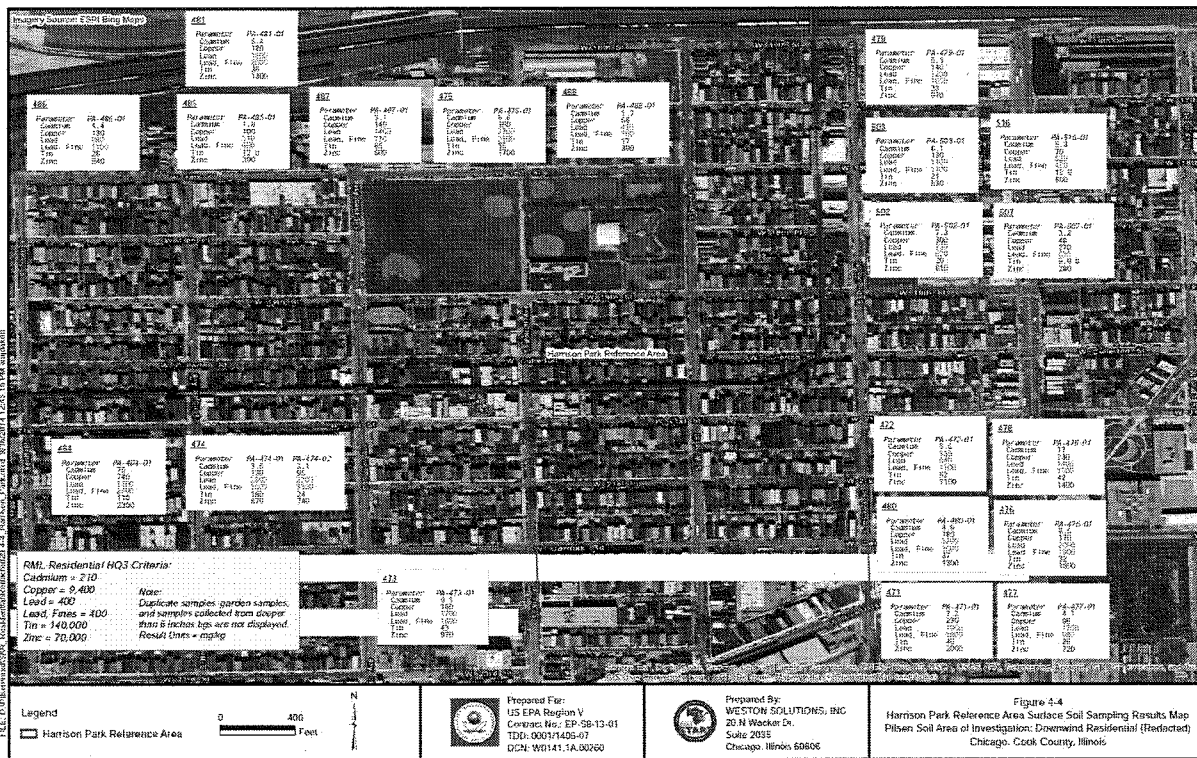


Figure 4
Harrison Park Sample Results



ATTACHMENT 1

**Environmental Justice Analysis
Heart of Chicago Site
Chicago, Illinois
February, 2017**



1 mile Ring around the Area, ILLINOIS, EPA Region 5

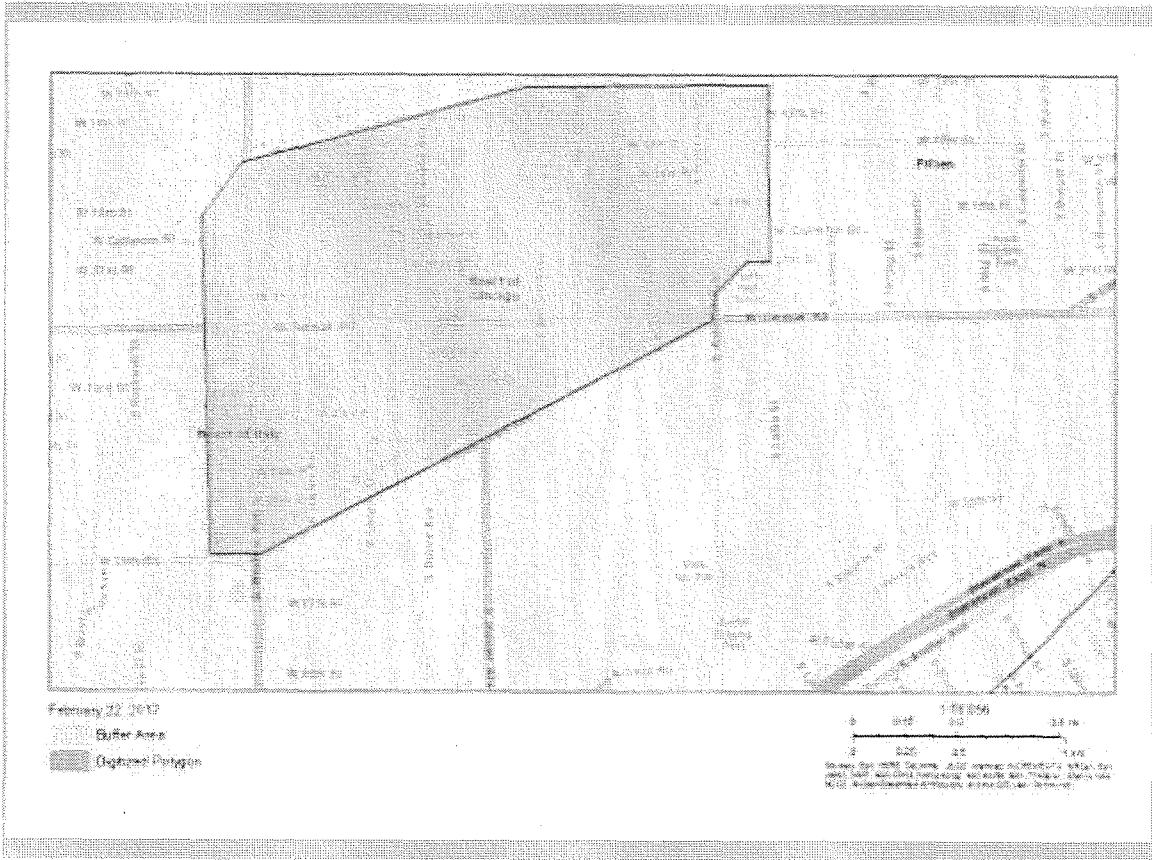
Approximate Population: 94,780

Input Area (sq. miles): 7.80

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EI Indexes			
EI Index for PM2.5	97	98	96
EI Index for Ozone	96	98	95
EI Index for NATA Diesel PM	98	99	98
EI Index for NATA Air Toxics Cancer Risk	97	98	92
EI Index for NATA Respiratory Hazard Index	97	98	94
EI Index for Traffic Proximity and Volume	95	96	92
EI Index for Lead Paint Indicator	93	97	97
EI Index for Superfund Proximity	99	92	94
EI Index for RMP Proximity	98	99	99
EI Index for Hazardous Waste Proximity*	97	98	96
EI Index for Water Discharger Proximity	99	93	98



This report shows the values for environmental and demographic indicators and EISCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile such raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EISCREEN documentation for discussion of these issues before using reports.



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0



EJSCREEN Report (Version 2016)



1 mile Ring around the Area, ILLINOIS, EPA Region 5

Approximate Population: 94,780

Input Area (sq. miles): 7.80

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	12.1	11.2	93	10.6	98	9.32	97
Ozone (ppb)	49.3	50.8	18	50.3	27	47.4	56
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	2.33	1.28	93	0.931	95-100th	0.937	95-100th
NATA* Cancer Risk (lifetime risk per million)	43	36	87	34	90-90th	40	60-70th
NATA* Respiratory Hazard Index	2.4	1.9	79	1.7	90-90th	1.8	70-80th
Traffic Proximity and Volume (daily traffic count/distance to road)	1100	500	90	370	92	590	98
Lead Paint Indicator (% Pre-1960 Housing)	0.73	0.42	78	0.39	82	0.3	88
Superfund Proximity (site count/km distance)	0.045	0.095	42	0.12	39	0.13	39
RMP Proximity (facility count/km distance)	2.2	0.89	93	0.51	96	0.43	97
Hazardous Waste Proximity [†] (facility count/km distance)	0.23	0.12	90	0.11	91	0.11	90
Water Discharger Proximity (facility count/km distance)	0.12	0.38	26	0.31	35	0.31	39
Demographic Indicators							
Demographic Index	73%	35%	89	29%	93	36%	90
Minority Population	85%	37%	85	24%	93	37%	87
Low Income Population	61%	32%	87	33%	87	35%	86
Linguistically Isolated Population	20%	5%	92	2%	97	5%	93
Population With Less Than High School Education	35%	12%	93	11%	96	14%	92
Population Under 5 years of age	7%	6%	57	6%	59	6%	58
Population over 64 years of age	7%	13%	24	14%	19	14%	22

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risk over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

† The hazardous waste environmental indicator and the corresponding EJ index will appear as N/A if there are no hazardous waste facilities within 50 km of a selected location.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see

ATTACHMENT 2

DETAILED CLEANUP CONTRACTOR ESTIMATE

HAS BEEN REDACTED – ONE PAGE

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT 3

INDEPENDENT GOVERNMENT COST ESTIMATE

HAS BEEN REDACTED – TWO PAGES

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ATTACHMENT 4

LIST OF AFFECTED RESIDENTIAL SAMPLE NUMBERS

Heart of Chicago Site

Chicago, Illinois

March 2017

1. PA-001
2. PA-002
3. PA-471
4. PA-472
5. PA-473
6. PA-474
7. PA-475
8. PA-476
9. PA-477
10. PA-478
11. PA-479
12. PA-480
13. PA-481
14. PA-484
15. PA-485
16. PA-486
17. PA-487
18. PA-488
19. PA-502
20. PA-503
21. PA-507
22. PA-516

ATTACHMENT 5

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION**

**ADMINISTRATIVE RECORD
FOR THE
HEART OF CHICAGO AREA SOILS SITE
CHICAGO, COOK COUNTY, ILLINOIS**

**ORIGINAL
MARCH, 2017**

<u>NO.</u>	<u>SEMS ID</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	933044	2/1/15	Machemer, S.D. & Hosick, T. J. EPA NEIC and Pribil, M.J., USGS	U.S. EPA	Technical Report - Characterization of Lead in Soils - Pilsen Neighborhood	117
2	933043	9/13/16	MicroVision Labs	Tetra Tech	Heart of Chicago/Harrison Park Soils Site Sample Analysis Report	333
3	933038	12/19/16	Roth, C., and Canar, J., U.S. EPA FIELDS Group	Thomas, C. Ruesch, P., U.S. EPA and Kondreck, R., TetraTech, Inc.	Analysis of Metal Levels by Area	2
4	933037	2/17/17	Thomas, C. and Ruesch, P., U.S. EPA	File	Memo re: Orozco Community Academy	5
5	933036	2/17/17	Thomas, C. and Ruesch, P., U.S. EPA	File	Memo re: Cristo Rey Jesuit High School	5
6	933042	2/17/17	Villicana, M., Tetra Tech	Thomas, C., U.S. EPA	Final Site Assessment Report - Harrison Park Area Assessment-RS	300

7	933040	1/1/03	Kay, R.T., Arnold, T.L., Cannon, W.F., Graham, D., Morton, E., and Bienert, R. USGS and Chicago DOE	Public	Water-Resources Investigations Report 03- 4105: Concentrations of Polynuclear Aromatic Hydrocarbons and Inorganic Constituents in Ambient Surface Soils, Chicago, Illinois: 2001-02	90
8	933046	3/9/17	Everetts, B., IEPA	Thomas, C., U.S. EPA	Letter re: ARARs for the Heart of Chicago Site	3
9	918770	8/1/07	ATSDR	Public	ToxFAQs Fact Sheet - Lead - CAS #7439-92-1	2
10	933039	8/1/03	U.S. EPA	File	Superfund Lead- Contaminated Residential Sites Handbook	124
11	933041	8/1/08	City of Chicago	Public	Lead Laws of the City of Chicago - Municipal Code Chapter 7-4	24
12	933035	2/28/17	Thomas, C., U.S. EPA	Everetts, B., IEPA	Letter re: Request for State ARARs	7
13	-	-	Thomas, C., U.S. EPA	Guerriero, M., U.S. EPA	Action Memorandum re: Request for Approval and Funding for a Time-Critical Removal Action at the Heart of Chicago Area Soils Site (<i>PENDING</i>)	-