



United States  
Environmental Protection  
Agency

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# EPA Proposes Cleanup Plan for Lead Site

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## Jacobsville Neighborhood Soil Contamination Site

Evansville, Indiana

January 2007

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### For more information

If you are interested in the Jacobsville Neighborhood Soil Contamination site cleanup, please attend one of the upcoming public meetings on **Thursday, Feb. 8, at the Central United Methodist Church, Family Life Center, 300 Mary St., from 3 to 5 p.m. or 6:30 to 8:30 p.m.**

Comments on the proposed plan should be submitted from Jan. 12 to Feb. 28:

- Orally or in writing at the public meeting
- Electronically via the Internet at [epa.gov/region5/publiccomment/](http://epa.gov/region5/publiccomment/)
- Fax to Yolanda Bouchee at (312) 353-1155

### Contact EPA

#### Yolanda Bouchee

EPA Community Involvement  
Coordinator  
Office of Public Affairs (P-19J)  
(312) 353-3209 or (800) 621-8431  
weekdays 9 a.m. - 4:30 p.m.  
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#### Jena Sleboda

EPA Remedial Project Manager  
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[sleboda.jena@epa.gov](mailto:sleboda.jena@epa.gov)

### Site-related documents may be reviewed at:

Evansville Vanderburgh Public  
Library - Central Branch – Public  
Comment Shelf  
200 S.E. Martin Luther King Jr. Blvd.

EPA Region 5 Records Center  
77 W. Jackson Blvd., 7th Floor  
Chicago

In order to clean up contaminated residential yards in the Jacobsville Neighborhood Soil Contamination Superfund site, U.S. Environmental Protection Agency Region 5 is proposing to remove soil from properties containing lead and arsenic concentrations above established safety levels and replace it with clean soil and sod cover. The safety threshold is set at 400 parts lead per million parts soil (parts per million is abbreviated ppm), and for arsenic, the limit is 30 ppm. A part per million is a tiny amount, similar to a drop of food dye in 16 gallons of water. The purpose of the cleanup is to prevent human exposure to lead, especially in children.

The purpose of this proposed plan fact sheet is to provide background information about the Jacobsville site, describe the various cleanup options considered, and identify EPA's preferred cleanup alternative.<sup>1</sup> The public is encouraged to comment on this proposal. EPA will be accepting comments from Jan. 12 to Feb. 28, 2007. See the adjacent box for ways to provide comments to EPA. You also can attend and participate in one of two public meetings at the Central United Methodist Church, Family Life Center, 300 Mary St., on Thursday, Feb. 8. The meetings will be held at 3 p.m. and 6:30 p.m.

EPA along with its state partner Indiana Department of Environmental Management will select a final cleanup plan for the Jacobsville site. This will occur after review and consideration of information provided by the public during the comment period and public hearing. The final cleanup proposal, which will be announced in a local newspaper notice and presented in an EPA document called a record of decision or ROD, could differ from this proposed plan depending on information or comments EPA receives during the public comment period.

The public also is encouraged to review the supporting documents for the Jacobsville Neighborhood Soil Contamination site. The information includes documents called the remedial investigation and feasibility study and the site-wide human health and ecological risk assessment report, found in the remedial investigation. The remedial investigation studies the nature and extent of contamination at the site, while the feasibility study evaluates different cleanup options. The risk assessment evaluates potential health risks to people and the environment from contamination at the site. You can review these reports at the information repository near the site: Evansville Vanderburgh Public Library - Central Branch.

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<sup>1</sup> Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, known as the Superfund law) requires EPA to provide an opportunity for public input with a meeting and comment period. It also requires a newspaper ad announcing the proposed cleanup plan. This fact sheet summarizes an EPA document called a remedial investigation/feasibility study. The full study and all other official site documents can be found at the Evansville Vanderburgh Public Library.

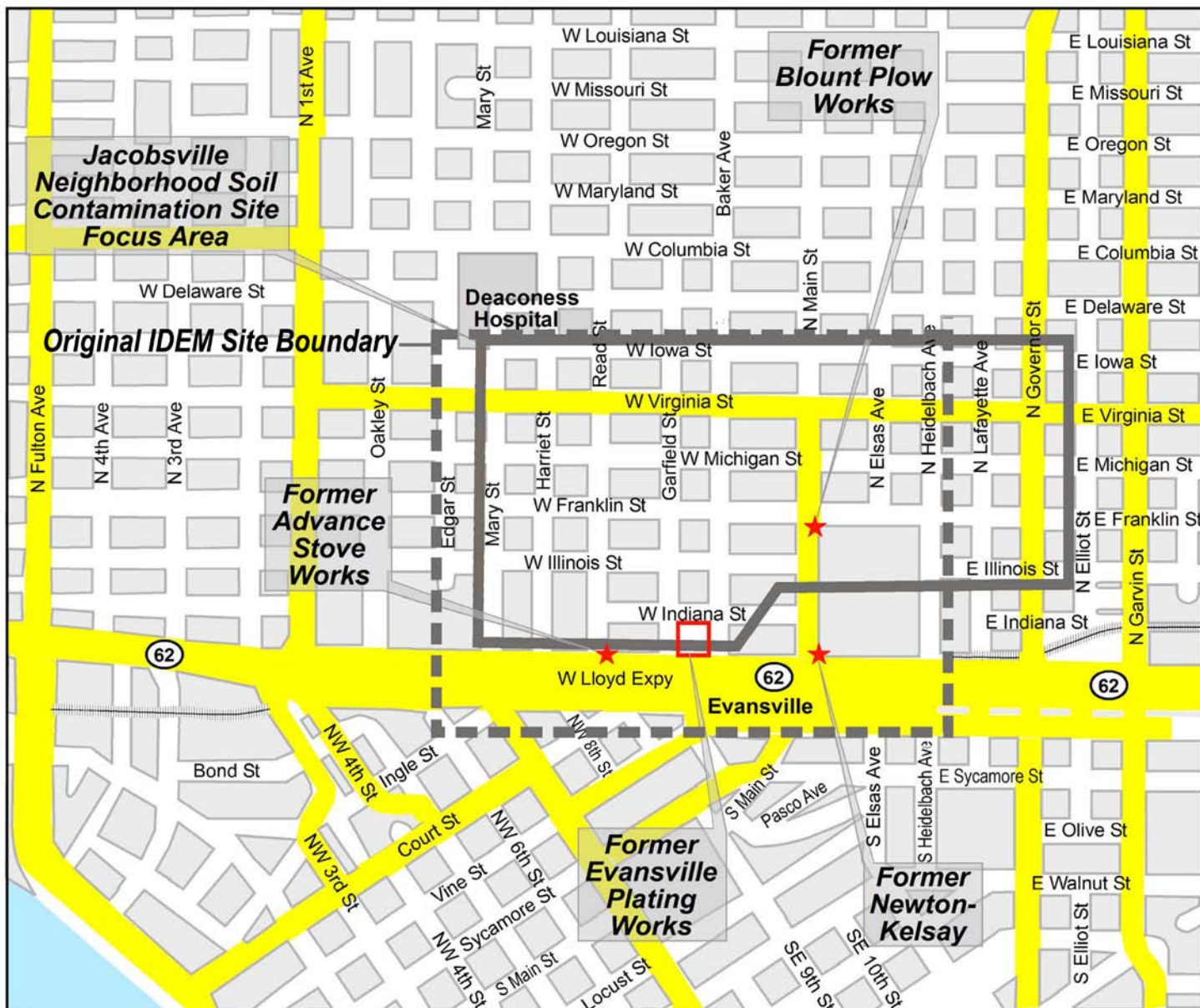


Figure 1 - Jacobsville Neighborhood Soil Contamination Site

### About the Jacobsville site

The Jacobsville Neighborhood Soil Contamination site is located in Evansville, Ind., in Vanderburgh County. The site originally consisted of around 250 acres or 45 city blocks located north of the Lloyd Expressway between Main Street and Fulton Avenue and was defined by the Indiana Department of Environmental Management as bounded by Edgar Street to the west, Lloyd Expressway to the south, Heidelberg Street to the east, and Iowa Street to the north; however, recent studies by EPA have changed the site boundaries (see site map above). The site focus area that contains the highest concentrations of lead and arsenic encompasses 141 acres and 508 residential properties. Lead and arsenic concentrations in the focus area are much higher and more prevalent than in

any other area sampled in Evansville. Because the focus area is primarily residential with some commercial and industrial properties, the available cleanup technologies for the site are limited. EPA will continue to investigate other areas in Evansville that may have been affected by this contamination and will clean up those areas that have concentrations above the cleanup goals at a later date.

In 1990, EPA conducted an emergency cleanup at the Evansville Plating Works, an abandoned electroplating and metal refinishing facility. After the cleanup and area inspection, it was concluded, based on samples collected, that no further action was needed. In 2000, however, lead contamination in the Jacobsville neighborhood was discovered when IDEM tested soil in nearby yards. Analysis of the samples showed some

lead “hot spots,” with levels as high as 6,150 ppm. The acceptable health limit is 400 ppm. IDEM began looking for facilities other than Evansville Plating Works that could have contributed to the high levels of lead in the area. Four former plants – all closed for at least 50 years – were identified as possible contributors to the lead contamination. The former factories include Blount Plow Works, Advance Stove Works, Newton-Kelsay, and Sharpes Shot Works.

- Blount Plow Works operated from the 1880s to the 1940s as a manufacturer of horse-driven plows. The facility operated a foundry where metal castings were produced. Buehler's Buy Low, 200 N. Main St., now stands where the foundry once operated.
- Advance Stove Works operated from the turn of the last century to the 1950s as a manufacturer of stoves and a foundry. Benthall Brothers now occupies that site at Read and Division streets.
- Newton-Kelsay operated from around the early 1900s to the 1950s. That site manufactured harness parts for animals. A McDonald's Restaurant, 20 N. Main St., now stands on the site.
- Sharpes Shot Works operated from 1878 to an unknown date and manufactured lead shot for guns. That site is now Deaconess Hospital.

It is believed that airborne dust, soot and smoke from plant operations deposited lead on neighborhood soil. Because these companies have long been out of business, EPA and IDEM will pay for cleaning up the site.

In June 2001, IDEM conducted an assessment and inspection at the Jacobsville site, a study area that includes residential properties, the four facilities listed above, and the Evansville Plating Works site. During this investigation, IDEM collected 189 soil samples from the top 6 inches of soil on residential properties. The samples were first tested for lead using a portable X-ray sampling instrument. The instrument helped identify 57 samples that had lead concentrations exceeding 400 ppm.

Since placing the area on the National Priorities List of Superfund sites in July 2004, EPA has done four rounds of soil testing, including the latest in October 2006. EPA wanted to determine the boundaries of the contamination. The Agency also has studied cleanup options and developed cost estimates.

To keep the public informed of activities at the site, EPA held a public “walk-in” session on April 12, 2005, made brief presentations at Jacobsville neighborhood meetings, and talked to many residents in the area while sampling yards. EPA presented the cleanup options and costs to the public during the first of three public hearings on Jan. 23. EPA will continue to use local newspapers, television stations, neighborhood meetings, and periodic mailings to keep residents informed about progress at the site.

### **Summary of site risks**

A study of potential risks to public health, wildlife and the environment was conducted for the Jacobsville site. Coming into contact with lead- and arsenic-contaminated soil in their yards was found to be the greatest health risk to people. Other types of properties where exposure may occur also were considered, including ball fields, parks, day cares, and similar properties. The risk to wildlife was found to be much less than the risk to humans.

Small children are the most sensitive to lead exposure. The cleanup goal of 400 ppm for lead was determined by predicting the concentrations that would cause blood levels in small children to be greater than the level where harmful effects from lead may start to occur.

Evansville also has background concentrations, or levels found throughout a very large area, of arsenic that are above the arsenic screening level. Because areas that are cleaned to levels below background concentrations will likely be recontaminated by surrounding soil, EPA decided to use 30 ppm as the cleanup goal for arsenic.

The risk assessment found the cleanup goals of 400 ppm and 30 ppm will protect people’s health and the environment.

### **Cleanup options**

EPA considered three options for cleaning up the Jacobsville Neighborhood Soil Contamination site, each of which was evaluated against nine criteria required by the Superfund law (*see criteria explanation in the box on Page 4*). The three options are summarized below. Full details are available in the technical documents on file in the Evansville Vanderburgh Public Library - Central Branch.

### Option 1—No further action

EPA includes a “no action” alternative as a basis for comparison with other cleanup options. Since no action would be taken, this option would increase the potential for human and animal contact with the lead- and arsenic-contaminated soil in the Jacobsville neighborhood.

**Cost—\$0**

### Option 2—Soil excavation, backfill, and site restoration (*EPA’s preferred cleanup alternative*)

This choice consists of digging up soil with lead and arsenic levels exceeding the cleanup levels of 400 ppm and 30 ppm, respectively. The contaminated soil will then be hauled by truck for off-site disposal at an approved landfill. Clean soil will then be used to backfill the yards, and the yards will be restored as closely as possible to their original condition.

**Cost—\$22.8 million**

### Option 3—In-place treatment of soil and site restoration

This alternative consists of mixing a safe chemical mixture into the soil that will change the characteristics of the lead and arsenic so they will not be absorbed by the human body. The yards will then be restored as closely as possible to their original condition.

**Cost—\$24.3 million**

### How do the options compare?

EPA evaluated the various cleanup options against seven of the nine criteria required by the Superfund law (*see the comparison chart Page 5*) and selected its preferred alternative. State and community acceptance will be evaluated after EPA receives public comments. More information about the evaluation is in the site feasibility study report contained at the Evansville Vanderburgh Public Library - Central Branch. For cleanup of the site, EPA’s proposed choice is Option 2—soil excavation, backfill and site restoration.

### Evaluating the options

EPA uses nine criteria to evaluate and compare cleanup options. See the table on Page 5 comparing the alternatives against these criteria.

**1. Overall protection of human health and the environment** addresses whether an option adequately protects human health and the environment. This criterion can be met by reducing or eliminating contaminants or by reducing people’s exposure to them.

**2. Compliance with applicable or relevant and appropriate requirements, referred to as ARARs,** ensures that each cleanup option complies with federal, state, and local laws and regulations.

**3. Long-term effectiveness and permanence** evaluates how well a cleanup option will work in the long term, including how safely remaining contaminants can be managed.

**4. Reduction of toxicity, mobility, or volume through treatment** addresses how well the cleanup option reduces the harmful effects, movement, and amount of contaminants.

**5. Short-term effectiveness compares how quickly the cleanup can be completed** and the health risks posed to cleanup workers and nearby residents while the alternative is under construction.

**6. Implementability** assesses how difficult the cleanup option will be to construct and operate, and whether technology, materials, and services are readily available.

**7. Cost** compares the expense of each option over time in a financial calculation called present worth. Cost includes capital expenditures such as buildings, machines, and wells plus operation and maintenance costs. Present worth cost is the total cost of an alternative over time in terms of today’s dollar value. A cleanup is considered cost effective if its costs are proportionate to its overall effectiveness.

**8. State acceptance** is whether the state environmental agency, in this case IDEM, agrees with EPA’s recommended option. EPA evaluates state acceptance after it receives public comments on its preferred option.

**9. Community acceptance** evaluates how well the community near the site accepts the option. EPA and IDEM will evaluate community acceptance after the public comment period.

Option 1 is not desirable because it would leave all risk of exposure to the arsenic and lead contamination in place. Options 2 and 3 would be permanent solutions that would allow residents to use their lawns freely without risk of exposure. However, Options 2 and 3 would temporarily inconvenience residents because equipment would be used on the lawns to perform the cleanup, but Option 2 would be less invasive because it would take less time. No information exists to prove that Option 3 will be protective in the long-term. Option 2 also is less costly than Option 3.

**Next steps**

EPA in consultation with IDEM will evaluate public reaction to the preferred cleanup option during the comment period (including the public meeting) before deciding on a final choice. Based on new information or public comments, EPA may modify its proposed option or select another cleanup alternative outlined in this fact sheet. EPA encourages you to review and comment on the cleanup choices. More technical detail on the proposed cleanup plan is available in the official documents on file at the Evansville Vanderburgh Public Library - Central Branch.

EPA will respond in writing to the comments in a file called a responsiveness summary, which will be part of the final decision document called the record of decision. EPA will announce the selected cleanup plan in a local newspaper advertisement and will place a copy of the ROD in the information repository.

**All about lead**

Lead is a naturally occurring heavy metal. It is commonly found at low levels in soil. Low levels of lead can be found in the air, water, food and dust in cities because of the widespread use of lead in man-made products. The federal government regulates the amount of lead in the air, water and soil. Lead is highly toxic and can cause a range of health effects, from behavioral problems and learning disabilities to seizures and death. Children 6 years old and younger are most at risk because their bodies are growing quickly and the effects of the lead can cause problems. Children often have higher levels of exposure because they play in dirt and may put dirty hands in their mouths. Also, children who lack proper nutrition may absorb more lead and suffer more harmful effects. To learn more about lead visit [www.atsdr.cdc.gov/tfacts13.html](http://www.atsdr.cdc.gov/tfacts13.html)

**Evaluation Criteria for the Jacobsville Neighborhood Soil Contamination Site**

<b>Evaluation Criteria</b>	<b>Alternative 1</b>	<b>Alternative 2*</b>	<b>Alternative 3</b>
Overall protection of human health and the environment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Compliance with ARARs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Long-term effectiveness and permanence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reduction of toxicity, mobility, or volume through treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Short-term effectiveness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementability	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cost	<input checked="" type="checkbox"/> \$0	<input checked="" type="checkbox"/> \$22,826,984	<input checked="" type="checkbox"/> \$24,261,760
State acceptance	<b>Will be evaluated after public comment period</b>		
Community acceptance	<b>Will be evaluated after public comment period</b>		

<input checked="" type="checkbox"/> Fully meets criteria	<input type="checkbox"/> Partially meets criteria	<input type="checkbox"/> Does not meet criteria
*EPA's recommended alternative		

# JACOBSVILLE NEIGHBORHOOD SOIL CONTAMINATION SITE: EPA Proposes Cleanup Plan for Lead Site

Region 5  
Office of Public Affairs (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604

United States  
Environmental Protection  
Agency



FIRST CLASS

## Upcoming Public Meetings about Jacobsville Neighborhood Soil Cleanup

Thursday, Feb. 8, 2007  
3-5 p.m. and 6:30-8:30 p.m.  
Central United Methodist Church  
Family Life Center  
300 Mary St.  
Evansville

At the meetings, EPA will give a presentation to explain the proposed plan and opportunities for those attending a chance to speak for the public record during the hearing phase. You may also submit your written comments.

If you need special accommodations for the public meeting, contact Yolanda Bouchee at the contact information on Page 1 by Feb. 5.

If you have scientific and technical questions about the lead cleanup, you may contact EPA Remedial Project Manager, Jena Sleboda at the contact information on Page 1.

When possible, site information is also posted on the Internet at [epa.gov/region5/sites/jacobsville](http://epa.gov/region5/sites/jacobsville)

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Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_

Place  
Stamp  
Here

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