



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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Fact Sheet #17

June 2016

Illinois EPA Proposes Cleanup Plan Off-site Soils (Operable Unit 4) New Jersey Zinc/Mobil Chemical Superfund Site DePue, Bureau County, Illinois

Community Involvement Opportunities

Read the Proposed Plan

You may review the full Proposed Plan at the information repository at

The Selby Township Library, 101 Depot Street, DePue, IL 61322, 815-447-2660

or at:

<http://www.epa.illinois.gov/topics/community-relations/sites/new-jersey-zinc/index>

Attend the Public Availability Session*

On **June 22 from 3:00-5:00 p.m. and 6:00-8:00 p.m.**, Illinois EPA will hold an availability session at the **DePue School Gymnasium** for the public to ask questions of the Illinois EPA about the Proposed Plan. No formal presentation will be provided.

Participate in the Public Meeting*

On **June 29 from 6:00-8:00 p.m.**, Illinois EPA will hold a public meeting at the **DePue School Gymnasium** to accept oral and written comments on the Proposed Plan. A formal presentation will be provided.

Submit Public Comments

Illinois EPA will accept written comments from **June 14 to July 14, 2016**. Submit written comments on the enclosed Comment Form by **July 14, 2016** to:

Jay Timm, Illinois EPA, Office of Community Relations, 1021 North Grand Avenue East, PO Box 19276 Springfield, IL 62794

Or, send to:

Epa.publichearingcom@illinois.gov

*A Spanish interpreter will be available

The Proposed Plan recommends how soil at residences, parks, alleys, and the school within Operable Unit (“OU”) 4 of the New Jersey Zinc/Mobil Chemical Superfund Site in DePue will be cleaned up. This fact sheet provides background information about the Superfund Site and describes and compares the options Illinois EPA has evaluated for cleanup of soil in OU4 in accordance with nine criteria established by federal law. Before making a final decision, Illinois EPA will consider comments from the public. See box at left for community involvement opportunities.



Illinois EPA encourages the public to review the Proposed Plan, as well as other documents in the Administrative Record. The Administrative Record contains the information upon which the selection of the cleanup action will be based. This information can be found in the Administrative Record at The Selby Township Library District in DePue. The Illinois EPA presents the Proposed

Plan to the public for review and comment as part of the public participation requirements pursuant to the Comprehensive Environmental, Response, Compensation and Liability Act (42 United States Code §9601 et seq. (1980)), as amended (“CERCLA”) and the *National Oil and Hazardous Substances Pollution Contingency Plan* (40 Code of Federal Regulations 300.430(f)(2), “NCP”). The final cleanup plan will be part of a document called the “Record of Decision” (“ROD”).

About The Site

The New Jersey Zinc/Mobil Chemical Site (“the Site”) is located north of Lake DePue in the Village of DePue in Bureau County. The Site was a primary and secondary zinc smelter. It operated from 1905 through 1989, producing slab zinc and zinc dust. Operations also included sulfuric acid, fertilizer production and lithopone pigment production.

An Interim Consent Order between the State of Illinois and Horsehead Industries, Inc., Mobil Oil Corporation, and Viacom International Inc. requires these Potentially Responsible Parties to determine the nature and extent of hazardous substances released from the Site, to identify and evaluate alternatives for remedial action, and to conduct specific interim measures and response actions. The successor to Viacom is CBS Operations, Inc. and the successor to Mobil Oil is ExxonMobil Oil Corporation (the “DePue Group”). Due to the Site’s complexity, it is being investigated in five Operable Units (OU1 through OU5).

How The Site is Organized

OU4 is the focus of this Proposed Plan.

OU1: The **South Ditch** received historic groundwater and surface water discharge from the plant area and conveyed this water to Lake DePue. Sediments in the South Ditch are contaminated with metals associated with historic plant operations. The DePue Group performed an interim remedial action in the South Ditch in 2005, including dredging of contaminated sediment, stabilizing the sediment, and placement of the stabilized sediment on the plant site in an engineered corrective action management unit.

OU2: The **Phosphogypsum Stack** is a disposal area for a byproduct of the fertilizer production process and is located in a 140-acre area on the north side of Highway 29.

OU3: The **Former Plant Site Area (“plant site”)** includes a 136-acre area enclosed by a fence where the former plant operations were conducted. OU3 also includes a Bluff Area north of the plant, and a 25-acre area that includes a former dump located between Marquette Street and Lake DePue. The DePue Group vegetated the former plant facility to control dust, installed a storm water management system throughout the plant and Bluff Area to intercept surface water and storm water and constructed and currently operates an interim water treatment plant that collects and treats storm water and contaminated groundwater from the slag pile and eastern portion of the plant site.

OU4: This area, *which is the focus of this Proposed Plan*, includes **off-site soils** impacted from plant operations beyond the plant’s boundaries within the Village of DePue, including residential areas, public property, parks, alleys, the school and other miscellaneous properties. The remaining portions of OU4, such as agricultural property and natural areas, will be addressed at a later date.

OU5: This area is **Lake DePue** and its associated floodplain. The South Ditch and another outfall discharged to Lake DePue, resulting in contaminated sediments concentrated in certain areas of the lake.

About Operable Unit 4

OU4 is generally defined as the area between County Road 1300 North (State Route 29) to the north (but including Oakbrook Subdivision to the northwest), Negro Creek to the east, Lake DePue to the south, and Oakbrook Drive to the west. The boundaries are based on the corporate boundaries of the Village of DePue. Approximately 814 residential lots (including vacant lots) are included within the Village boundaries and approximately 1,300 acres are included within the scope of the residential portion of OU4. Beyond the residential areas are agricultural properties, woodlands, and surface water bodies that will be addressed at a later time and are not part of this Proposed Plan.

Contaminated particulate matter and emissions from former plant operations are the likely sources of the contaminants in soil. Slag material from the Site was used as fill material throughout the Village and on some private properties, also contributing to soil contamination in these areas.

In 2013, the DePue Group conducted a Pilot Study that analyzed soil samples collected from 41 residential properties within the Village to learn what contaminants were present in soil and at what concentrations. The study revealed that arsenic and lead were found in soil throughout the Village at levels above criteria that are generally based on potential health risks. Cadmium, cobalt, and manganese were also found in soil at concentrations above their comparison criteria, but were limited to a few properties. Other metals— antimony, barium, chromium, copper, mercury, thallium, and zinc— were not detected in soil at concentrations greater than the OU4 criteria.

Human Health Risks

Based on the results of the Pilot Study, Illinois EPA determined that cleanup of soils contaminated by metals is necessary to protect human health in and around the residential properties. The greatest potential risk to people comes from ingestion of metals-contaminated soil in their yards and consumption of produce grown in contaminated soil. To a lesser degree, people also could be exposed by breathing in contaminated dust particles, or getting contaminated soil on their skin.

The recommended cleanup alternatives discussed in the Proposed Plan are designed to protect residents from potential health threats associated with site contaminants. The cleanup goals take into account risks to children and adults who are exposed to soils in the residential areas and who also may be exposed to site contamination associated with Lake DePue, and risks to construction workers. The primary cleanup goals are listed in the table below; other levels for other chemicals are discussed in the Proposed Plan.

Contaminant	Cleanup Goal (mg/kg)
Arsenic	21
Cadmium	70 (yards) and 24 (gardens)
Cobalt	23
Lead	400
Manganese	1,800

The term “mg/kg” means milligram per kilogram, also known as “parts per million.” This describes the concentration of a chemical in soil. One ppm is one milligram of a chemical in one kilogram of soil.

Lead

Lead is a naturally occurring element found in air, soil, water, and inside our homes. Much of our exposure comes from human activities including past use of leaded gasoline, some types of industrial facilities, and past use of lead-based paint. Lead has been used in a variety of products found in and around our homes, including paint, ceramics, pipes and plumbing materials, solders, gasoline, batteries, ammunition, and cosmetics. Lead may enter the environment from these uses and can also come from industrial sources and contaminated sites, such as former smelters.

Lead can be toxic to humans and animals. Lead exposure is particularly dangerous for pregnant women and children under six years old. In young children, lead can cause behavior and learning problems, lower IQ, hyperactivity, slowed growth, hearing problems, and anemia. (USEPA, Learn About Lead, <https://www.epa.gov/lead/learn-about-lead>)

Arsenic

Arsenic is a naturally occurring element found in soils, sediments, and groundwater. Arsenic may occur naturally or as a result of mining, ore smelting, and industrial uses. In the past, inorganic forms of arsenic were used in pesticides and paint pigment, as wood preservatives and as a treatment for a variety of ailments. Today, usage of arsenic-containing pesticides and wood preservatives is restricted. People are most likely to be exposed to inorganic arsenic through drinking water and food.

Unusually large doses of arsenic can cause symptoms ranging from nausea, vomiting, and diarrhea to dehydration and shock. Long-term exposure to high levels of arsenic in drinking water has been associated with skin disorders and increased risks for diabetes, high blood pressure, and several types of cancer. Arsenic and arsenic compounds are considered to be cancer-causing chemicals. (Centers for Disease Control and Prevention: National Biomonitoring Program Factsheet, http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html)

Cleanup Options

Illinois EPA considered three options to address soil contamination in the residential area. A summary of each option is presented below. More detailed information may be found in the Proposed Plan.

Option 1: No Action

Illinois EPA must evaluate the “No Action” option as required by the Superfund law. Under this option, no action would be taken at OU4 to prevent human exposure to the soil contamination. This option leaves affected soils in place at OU4.

Estimated Total Present Value of Option: \$0

Option 2: Excavation and Management of Soils on the Former Plant Site Area

Option 2 is Illinois EPA’s recommended option. Under Option 2, contaminated soil and fill material from residences, parks, alleys, and the school in OU4 would be excavated, backfilled with clean soil, and revegetated or restored. This option consists of digging up and removing soil with concentrations greater than the cleanup goals, generally to a maximum depth of 18 inches in yards, 24 inches in gardens, and 12 inches in parks and alleys. Excavated soils would be stockpiled on the plant site and excavated fill material would be stockpiled north of the slag pile. The stockpiles would be safely managed until a final remedy for the plant site is determined. Based on the Pilot Study data, it is estimated that approximately 55,000 cubic yards of soil and fill material from throughout the Village will exceed one or more cleanup standards and will require removal.

Estimated Total Present Value of Option: \$13.1 million

Estimated Remedial Action Construction Timeframe: 2.5 years

Option 3: Excavation and Off-site Disposal of Soils

Under Option 3, contaminated soil and fill materials from residences, parks, alleys, and the school in OU4 would be excavated, backfilled with clean soil, and revegetated or restored in the same manner as for Option 2. All contaminated soils and fill material would be disposed off-site at a landfill. Even though the excavated soil is likely non-hazardous, these soils would require additional testing before being accepted for disposal at a landfill. Exact disposal volume estimates for hazardous and nonhazardous wastes cannot be made at this time; therefore, two scenarios are associated with this option.

*A **cubic yard** is a cube of material that is one yard (3') wide, long and high. The average commercial dump truck can haul anywhere from 10 to 14 cubic yards of soil. For comparison, 55,000 cubic yards of soil is equivalent to 3,298 truckloads.

For Option 3A, all of the excavated soil and fill is assumed to be non-hazardous and would be transported to an off-site municipal solid waste landfill. For Option 3B, all of the excavated soil and fill is assumed to be hazardous and would require treatment and disposal at an off-site hazardous waste landfill. One waste pile area would be established at the plant site to temporarily stockpile soils for approximately one week until the soils are removed and transported to an off-site hazardous waste landfill.

Option 3A

Estimated Total Present Value of Option: \$21.1 million

Estimated Remedial Action Construction Timeframe: 2.5 years

Option 3B

Estimated Total Present Value of Option: \$30.5 million

Estimated Remedial Action Construction Timeframe: 2.5 years

Common Elements of Options 2 and 3

Options 2 and 3 are equally protective for general residential use; however, if soil with contaminant concentrations greater than the cleanup standards are left in place below the maximum required excavation depth, then a permanent, permeable barrier (for example, orange snow fence) would be installed to visually mark the maximum depth of the excavation and distinguish the impacted soil below from the clean backfill soil.

This would occur under both options. Where a marker is required, environmental covenants and/or institutional controls would be placed on the remediated properties and a Construction Support Program would be implemented. Environmental covenants and institutional controls can help prevent exposure in areas where not all of the contamination has been or can be removed. These controls, such as marker barriers and administrative covenants, help alert someone that contamination may be present and appropriate management is needed. Should property owners encounter the marker barrier during future excavation work at a property, assistance would be provided to facilitate proper handling of the soil for placement into a soil repository to be constructed on the plant site. Illinois EPA would conduct a review every five years to ensure that the remedy remains protective.

No property will be sampled or excavated unless the property owner gives his or her written consent. Property owners will be asked to sign an agreement granting access and permission to sample and if necessary, perform the cleanup. The signed access agreement will allow field technicians to obtain samples from the property and perform soil remediation activities as needed.

Comparison of Options

Based on the Superfund law, possible cleanup options or alternatives must be evaluated against nine criteria. These criteria are described below. The chart on the next page shows how each of the options compares to the criteria.

Evaluation Criteria

1. **Overall protection of human health and the environment** examines whether an option protects both human health and the environment by reducing or removing pollution or by reducing exposure to it.
2. **Compliance with Applicable or Relevant and Appropriate Requirements (“ARARs”)** ensures options comply with federal and state laws.
3. **Long-term effectiveness and permanence** evaluates how well an option will work over the long term, including how safely remaining contamination can be managed.
4. **Reduction of toxicity, mobility or volume through treatment** determines how well the treatment option reduces the amount and movement of contamination.
5. **Short-term effectiveness** compares how quickly an option can help the situation and how much risk exists while the option is under construction.
6. **Implementability** evaluates how practical the option is, and whether materials and services are available.
7. **Cost** includes not only buildings, equipment, materials and labor, but also the cost of operating and maintaining the cleanup for the life of the project. The NCP and CERCLA require remedies to be “cost effective.”
8. **Support agency acceptance** determines whether, based on its review of the Proposed Plan, the supporting agency (in this case, U.S. EPA) accepts the option.
9. **Community acceptance** is considered by evaluating the oral and written public comments on the Proposed Plan and options.

The “No Action” option does not protect human health and the environment and would not meet Applicable or Relevant and Appropriate Requirements (“ARARs”). Options 2 and 3 provide equal protection of human health and the environment within OU4. These options would prevent exposure by removing soil containing metals at concentrations above cleanup standards. Options 2 and 3 are proven and effective remedial options for sites that have soils contaminated with metals.

Short-term risks with Option 3 are higher because of the additional handling of soil stockpiles and more extensive truck traffic within the Village due to hauling contaminated soil to off-site facilities. The risk of exposure to the environment and communities outside of the Village of DePue is greater with Option 3.

Illinois EPA recommends Option 2: Excavation and Management of Soils on the Former Plant Site Area.

Evaluation Criteria	Options		
	1	2	3
	No Action	Excavation and Management of Soils on Plant Site*	Excavation and Off-Site Disposal
Overall Protection of Human Health and the Environment	—	✓	✓
Compliance with ARARs	—	✓	✓
Long-Term Effectiveness and Permanence	—	✓	✓
Reduction of Toxicity, Mobility, or Volume Through Treatment	—	—	— (3A) ✓ (3B)
Short-Term Effectiveness	—	✓	✓
Implementability	✓	✓	✓
Cost (Net Present Worth)**	\$0	\$13.1 million	\$21.1 million – 30.5 million
Support Agency Acceptance	U.S. EPA will determine its support of the preferred alternative, Alternative 2, after the public comment period ends.		
Community Acceptance	Community acceptance of the recommended option will be evaluated after the public comment period ends.		

*Illinois EPA's recommended option

**Costs are estimates.

✓ Option meets the criteria

___ Option does not meet the criteria

The Community's Role In The Selection Process

Community Acceptance is one of the nine Evaluation Criteria established in the Superfund law. Before making a final decision, Illinois EPA will review public comments submitted at the public meeting and within the public comment period. Illinois EPA may change its recommendations based on public comment or based on consultations with U.S. EPA. Illinois EPA will organize the oral and written comments it receives and respond to those comments in the Responsiveness Summary section of the Record of Decision (ROD).

Illinois EPA will inform the public about its final decision through a public notice and through other means. Copies of the ROD, the final plan, will be available in the Selby Township Library and at the Illinois EPA Springfield office.

The complete Proposed Plan and other technical information that the Illinois EPA used in the selection of the preferred final remedy can be found in the Administrative Record at the Selby Township Library District. The Administrative Record is contained on disc at the library and is also available for viewing at the Illinois EPA's Springfield office.

Availability Session

Illinois EPA will hold an informal availability session for residents to learn more about the Proposed Plan. No formal presentation will be provided. The public is encouraged to read the Proposed Plan beforehand and ask questions of the Illinois EPA about the Proposed Plan for the off-site soils. This public availability session will be held on **June 22, 2016, from 3:00 to 5:00 p.m. and at 6:00 to 8:00 p.m.** at the DePue School Gymnasium, DePue, IL.

Public Meeting

As required by the NCP, Illinois EPA has scheduled a formal Public Meeting for people to ask additional questions and submit oral and written comments on the Proposed Plan. The Public Meeting will be held on **June 29, 2016 from 6:00 to 8:00 p.m.** at the DePue School Gymnasium, DePue, IL. Illinois EPA will accept written comments during the public comment period which begins on **June 14, 2016 and ends July 14, 2016.**

Public Comment

Written comments should be submitted to the contact person listed on the first page of this factsheet. *All comments must be post marked by July 14, 2016.* A court reporter will be present at the Public Meeting and will provide Illinois EPA with a transcript of the meeting, including all comments made. This transcript will be used to ensure all oral comments at the meeting will be introduced into the Administrative Record.

The full Proposed Plan is available at the Selby Township Library, 101 Depot Street, in DePue or at <http://www.epa.illinois.gov/topics/community-relations/sites/new-jersey-zinc/index>

For further information on the New Jersey Zinc/Mobil Chemical Superfund Site, please contact:

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