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# Cleanup Plan Proposed for Soil, Underground Water

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**Former L.A. Darling Site**

**Bronson, Michigan**

**July 2008**

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## Share your opinions

EPA invites your comments on this proposed cleanup plan for the former L.A. Darling facility in Bronson, Mich. Your input is important. EPA could modify its recommendations based on new information from the public.

There are several ways for you to participate in the process. You can fill out and mail the enclosed comment sheet, or fax or e-mail comments to EPA Project Manager **Terese Van Donsel** at fax number 312-886-4071, e-mail [vandonsel.terese@epa.gov](mailto:vandonsel.terese@epa.gov), or complete the online comment form at [epa.gov/region5/sites/bronson](http://epa.gov/region5/sites/bronson)

The public comment period runs:  
**July 17 to Aug. 15**  
(midnight postmark)

A public hearing will also be held:  
**7 p.m., Thursday, Aug. 7**  
Bronson City Office  
141 S. Matteson St.

EPA invites your questions and comments at the meeting. Comments made orally there will be recorded. For more information you can contact Terese Van Donsel at 800-621-8431, Ext. 36564, 9:30 a.m. – 5:30 p.m., weekdays.

Documents containing more information about the site can be read at the local site information repository:

**Bronson Branch Library**  
207 N. Matteson St.

In order to clean up the former L.A. Darling Co. property in Bronson, Mich., U.S. Environmental Protection Agency is proposing the excavation of contaminated soil and subsurface structures along with the construction of a treatment system to clean underground water. The cleanup plans are designed to reduce pollutant levels so the site at the intersection of North Matteson and Railroad streets can once again be used for industrial or commercial purposes. The main contaminants on the property are heavy metals such as lead, cyanide and a class of chemicals known as volatile organic compounds, or VOCs. VOCs can dissolve in water and release vapors into the air. The main VOC at this site is a hazardous substance called trichloroethylene or trichloroethene, also known as TCE. TCE was used mainly as an industrial solvent to remove grease from metal parts.

The metals and VOCs contaminated hundreds of cubic yards of soil on the site. In addition, the pollutants soaked into the ground and contaminated the nearby underground water, called “ground water” in environmental terms. Contamination in ground water can make the water unusable as a drinking water supply. Levels of TCE in ground water near the former L.A. Darling area are currently above levels considered safe for drinking.

## Responsibility for cleanup

Even though the former L.A. Darling parcel is now owned by the city of Bronson, EPA considers the L.A. Darling Co. legally responsible for the cleanup. The company paid for an environmental consultant to conduct a major pollution investigation on the property, and the consultant issued two reports to summarize the work. The “remedial investigation” report details the types, quantities and hazards of the pollutants on the site while the “feasibility study” identifies and evaluates possible cleanup options for the property. Both reports are available for review at the Bronson Branch Public Library.<sup>1</sup>

The L.A. Darling consultant came up with four options for reducing the amount of contaminated soil on the site and four alternatives for cleaning up polluted underground water supplies. The alternatives are described in more detail later in this fact sheet. EPA examined the costs and effectiveness of the soil and ground-water cleanup alternatives and then announced its recommended cleanup plan.

The plan is not yet final. The public will have until Aug. 15 to comment on the proposals and EPA’s alternatives. The proposed plan could change based on input from the public. Read the adjacent box to find out how you can participate in the process. EPA will hold a public meeting on Aug. 7 to discuss the cleanup plan and hear questions and comments. Following the comment period and public meeting, EPA will release its final decision in a document called a “record of decision,” or ROD.

<sup>1</sup> Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA known as the Superfund law) and Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan require the public be given an opportunity to participate in the process of approving a proposed cleanup plan. This fact sheet summarizes technical documents about the soil and ground water cleanup that are available for viewing at the official site repository located in the Bronson Branch Public Library.

## Health risks

VOCs such as TCE found in the ground water under the L.A. Darling site are a potential health threat because the chemicals make the water unsafe to drink. The most heavily contaminated ground water can also release VOC vapors that rise through the soil where they can seep into the foundations of homes and buildings, causing hazardous indoor air pollution. This problem is called soil vapor intrusion. VOCs, metals and cyanide in the soil at the former L.A. Darling facility also pose a risk to individuals who might regularly use the property and come into contact with the soil.

If people were to be regularly exposed to the soil and ground-water contamination on the L.A. Darling site over a lifetime, health risk estimates exceed EPA's and Michigan's allowable standards.

## About the former L.A. Darling site

The former L.A. Darling property is a little more than 2 acres in size and is located on the north side of Bronson. As the current owner, the city of Bronson intends to keep the industrial zoning and hopes to redevelop the area in the future. The surface of the property is vacant except for a water tower. The L.A. Darling Co. and its predecessors manufactured display fixtures and retail shelving from 1909 to 1967. Pollutants came from manufacturing operations that included chromium and cadmium plating and degreasing using TCE. Concrete slabs from former building floors cover a large portion of the area.

The L.A. Darling Co. agreed in a 2002 administrative consent order to conduct an environmental investigation of its former property under the supervision of EPA. From 2001 to 2004, the company conducted extensive sampling of soil and ground water. The testing revealed contaminated soil at a former chemical staging area and in underground vaults, tanks, sewers and in an old buried sludge lagoon. A lead hot spot was also discovered. Contaminated ground water below the property was found to contain VOCs at levels in excess of EPA and Michigan Department of Environmental Quality safe drinking water standards.

In the fall and winter of 2007-2008, L.A. Darling performed some preliminary soil removal work at a portion of the former facility. This work was done voluntarily by the company to allow for road construction through the southern end of the property. L.A. Darling removed soil to a cleanup level that will allow for redevelopment of that particular section. An EPA contractor provided oversight of the work.

If not cleaned up, the contamination in the underground water can travel off-site and cause vapor intrusion problems. EPA has been monitoring properties near the former L.A. Darling site and the adjacent former Scott Fetzer property. EPA has also identified several homes affected by vapor intrusion. Vapor intrusion issues are not included in this cleanup plan. If EPA identifies a home with elevated levels of indoor vapors, the Agency will work with the homeowner to develop a customized cleanup plan for their property at no cost to them.

## Explanation of evaluation criteria

- 1. Overall protection of human health and the environment** addresses whether an option protects both human health and the environment. This standard can be met by reducing or removing pollution or by reducing exposure to it.
- 2. Compliance with applicable or relevant and appropriate requirements** ensures that options comply with federal, state and local 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** addresses how well the option reduces the toxicity, movement and amount of pollution.
- 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 feasible the option is and whether materials and services are available in the area.
- 7. Cost** includes not only buildings, equipment, materials and labor but also the cost of maintaining the option for the life of the cleanup.
- 8. State acceptance** determines whether the state environmental agency, in this case, MDEQ, accepts the option.
- 9. Community acceptance** judges how well nearby residents accept the cleanup options. This will be determined after the comment period and public meeting.

## Cleanup options

The cleanup goal for the former L.A. Darling property is to reduce chemical levels in the soil to concentrations acceptable for future industrial redevelopment. The goal for the underground water supply is to stop contaminated ground water from moving beyond the property boundary and ultimately clean it to a level that is safe for drinking and other uses.

The L.A. Darling Co. developed four cleanup alternatives for contaminated soil and four options for ground water. EPA evaluated each of the eight cleanup alternatives against nine criteria required by law (*see box Page 2 for an explanation of the criteria*) and then picked its recommended options. The eight alternatives are summarized below, but full details are available in the feasibility study on file in the Bronson Branch Public Library. All cost figures include operation and maintenance expenses and are given in a financial calculation called “present worth.”

### Soil cleanup options

**No Action Soil Alternative** – A no-action alternative is always included in a cleanup analysis as a point of comparison. **Cost - \$0**

**Soil Alternative 1 – Excavation and off-site disposal, continued industrial land use and short-term fencing (this is EPA’s recommended soil alternative):** Under this alternative, contaminated soil and subsurface structures would be dug up and transported to an off-site licensed hazardous waste landfill. The cleanup would extend down to the top of the underground water table. Use restrictions would be needed to control construction below the water table. About 5,100 cubic yards of soil and concrete were removed from the site during the voluntary work conducted last winter. Under this alternative, an estimated additional 2,700 cubic yards of material would need to be excavated to bring the property to a condition acceptable for commercial/industrial development. Clean fill will be brought in to bring the property back to grade. Temporary fencing would be installed during the cleanup work to protect the public. **Cost - \$630,000**

**Soil Alternative 2 – Chemical oxidation, continued industrial land use, short- and long-term fencing, capping and deed restrictions:** In this option, chemical oxidants would be added to the soil to neutralize VOCs and metals. The property would then be capped with clean material. Use restrictions would be needed (which could limit development options) because contaminants would be left in place in their altered state. A long-term fence would also be built around the area. **Cost –\$1.1 million**

**Soil Alternative 3 – Soil vapor extraction, continued industrial land use, short-term fencing and deed restrictions:** Soil vapor extraction or SVE involves installing wells in the ground and creating a vacuum that sucks up VOCs from soil above the water table. Because this approach would leave metal contamination in the soil, a cover and permanent fencing would be needed to limit access. Land use restrictions would also be needed, which would limit future development of the property. **Cost - \$809,000**

### Ground water cleanup options

**No Action Ground Water Alternative** - Again, a no action alternative is used as a comparison point. **Cost - \$0**

**Ground Water Alternative 1 – Soil vapor extraction with air sparging, ground water extraction and treatment, ground water use restriction ordinance, short-term fencing and monitoring (this is EPA’s recommended ground water alternative):** Alternative 1 uses a two-phase approach to address contaminated ground water below the facility. In the first phase of treatment, air would be pumped into contaminated ground water to speed vaporization of pollutants. This is called “air sparging.” Vapors would be recovered from extraction wells placed above the water table. This first phase of treatment would operate for about five years. When the air sparging/soil vapor extraction system no longer recovers a significant amount of VOC contamination, the ground water cleanup approach would change.

For phase two of this cleanup, ground water would be directly extracted from below the property and treated with a special stripping tower and granular activated carbon filtration to remove organic contaminants. Chemical precipitation would be used to remove metals and cyanide. Treated water would be discharged to County Drain 30 through an existing storm sewer. It is anticipated that the ground water extraction/treatment system would need to run for many years. Fencing would be required during on-site activities followed by long-term monitoring of the ground water. Ground water usage would be restricted until water is safe to use. **Cost - \$1.4 million**

**Ground Water Alternative 2 – Ground water extraction with granular activated carbon and chemical precipitation treatment, ground water use restriction ordinance, short-term fencing and monitoring:** In this option, the contaminated ground water beneath the facility would be extracted using recovery wells and treated on-site with granular activated carbon (to remove organic contaminants) and chemical precipitation (to remove metals and cyanide). Treated

water would be discharged to County Drain 30 through an existing storm sewer. It is anticipated that the ground water extraction/treatment system would need to run for many years. Fencing would be required during on-site activities followed by long-term monitoring of the ground water. Ground water usage would be restricted until water is safe to use. **Cost - \$2.1 million**

**Ground Water Alternative 3 – Ground water extraction with ozone, granular activated carbon, and chemical precipitation treatment, ground water use restriction ordinance, short-term fencing and monitoring:** Under this alternative, contaminated ground water would be extracted using recovery wells and treated on-site with oxygen and ozone to destroy the VOCs. Granular activated carbon would be used to filter out any remaining organic contaminants. Chemical precipitation would then be used to remove metals and cyanide. Treated water would be discharged to County Drain 30 through an existing storm sewer. It is anticipated the ground water extraction/treatment system would need to run for many years. Fencing would be required during on-site activities followed by long-term monitoring of the ground water. Ground water usage would be restricted. **Cost -- \$1.5 million**

### **Evaluation of alternatives**

EPA decided the “no action” alternatives for contaminated soil and ground water would not protect people or the environment, so the Agency eliminated those options from consideration. EPA evaluated the remaining six viable alternatives against the nine criteria required by the Superfund law (*see the comparison charts on Page 7*) and selected Soil Alternative 1 and Ground Water Alternative 1 as the best choices for soil and ground water cleanup. Under Soil Alternative 1, the remaining contaminated soil would be removed to the top of the water table, allowing for commercial or industrial development of the property. Ground Water Alternative 1 would provide for aggressive treatment of contaminated ground water and would restrict the movement of contaminated ground water beyond the property boundary.

EPA recommends Soil Alternative 1 because excavation of the remaining contaminated soil is cost-effective and can easily be implemented. Excavation would also continue the voluntary cleanup work performed by L.A. Darling over the winter. Both the chemical oxidation technique in Soil Alternative 2 and

the soil vapor extraction technique in Soil Alternative 3 would be ineffective in treating all types of contamination on the property. Soil Alternative 1 would leave the property open for industrial or commercial development. Soil Alternatives 2 and 3 would require more restrictions on property use, which would limit development options.

EPA recommends Ground Water Alternative 1 for treating ground water contamination. Ground Water Alternative 1 is the least expensive and uses a combination of proven technologies to deal with the various types of contamination present in the ground water at the site. MDEQ supports this alternative but anticipates that additional actions will be required to address other contaminated ground water areas in Bronson.

Air sparging and soil vapor extraction would remove a significant amount of VOCs from the ground water and the soil below the water table. The air sparge/soil vapor extraction system would need to operate for about five years. After this first phase of treatment, the remaining contaminated ground water would be extracted and treated. While treatment systems for all ground water alternatives would need to run for many years, Ground Water Alternative 1 is less expensive than Ground Water Alternatives 2 and 3 because the air sparge phase of treatment should dramatically reduce the amount of VOCs in ground water, leading to reduced treatment costs for the extraction and treatment.

### **Next steps**

EPA, in consultation with MDEQ, will evaluate public reaction to the preferred cleanup plans during the comment period and at 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 of the cleanup alternatives outlined in this fact sheet. EPA encourages you to review and comment on the cleanup alternatives. More detail on the cleanup alternatives is available in the official documents on file at the Bronson Branch Library.

EPA will respond to the comments in a responsiveness summary, which will be part of the final decision document. The ROD describes the final cleanup plan selected for the site. EPA will announce the selected cleanup plan in a local newspaper and will place a copy on file in the information repository at the Bronson Branch Library.



# L.A. Darling Site Comment Sheet

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Place  
First  
Class  
Postage  
Here

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Superfund Division (SR-6J)  
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## Evaluating choices against the nine criteria

EPA evaluated the soil and ground water alternatives against eight of the nine criteria that EPA uses in deciding which plan is best. The ninth criterion, community acceptance, will be evaluated after EPA receives public comments.

### Soil cleanup alternatives

<i>Evaluation criteria</i>	<i>No Action</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>
1. Overall Protection of Human Health and the Environment	○	●	●	●
2. Compliance with Applicable or Relevant and Appropriate Requirements	○	●	●	●
3. Long-Term Effectiveness and Permanence	○	●	●	●
4. Reduction of Toxicity, Mobility or Volume through Treatment	○	○ Not applicable since waste removed from site.	●	●
5. Short-Term Effectiveness	○	●	●	●
6. Implementability	○	●	●	●
7. Cost	\$ 0	\$630,000	\$1.1 million	\$809,000
8. State Acceptance	○	●	●	●
9. Community Acceptance	Will be evaluated following the comment period.			

### Ground water cleanup alternatives

<i>No Action</i>	<i>Alternative 1</i>	<i>Alternative 2</i>	<i>Alternative 3</i>	
1. Overall Protection of Human Health and the Environment	○	●	●	●
2. Compliance with Applicable or Relevant and Appropriate Requirements	○	●	●	●
3. Long-Term Effectiveness and Permanence	○	●	●	●
4. Reduction of Toxicity, Mobility, or Volume through Treatment	○	●	●	●
5. Short-Term Effectiveness	○	●	●	●
6. Implementability	○	●	●	●
7. Cost	\$0	\$1.4 million	\$2.1 million	\$1.5 million
8. State Acceptance	○	●	●	●
9. Community Acceptance	Will be evaluated following the comment period..			

○ Does not meet criteria

● Partially meets criteria

● Fully meets criteria

# Cleanup Plan Proposed For Contaminated Soil, Underground Water Former L.A. Darling Site

(details inside)

## More contacts

Other site team members for the former L.A. Darling site include:

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Former L.A. Darling Site: EPA Proposes Cleanup Plan

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