



SITE ASSESSMENT: Evaluating Risks at Superfund Sites

Office of Emergency and Remedial Response
Hazardous Site Evaluation Division 5204G

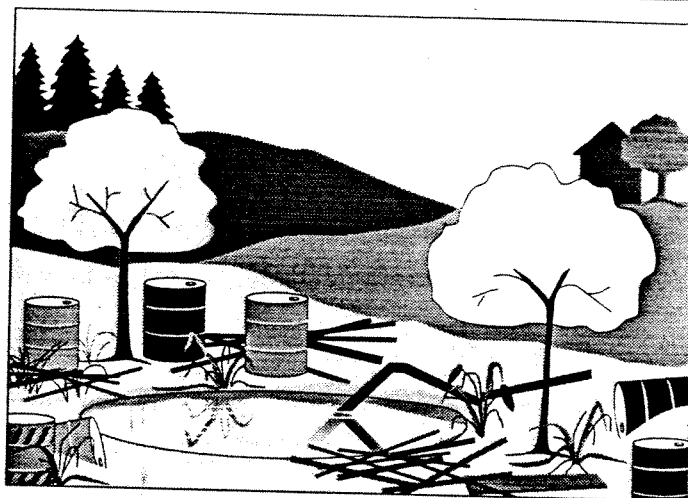
Quick Reference Fact Sheet

The Challenge of the Superfund Program

A series of headline-grabbing stories in the late 1970s, such as Love Canal, gave Americans a crash course in the perils of ignoring hazardous waste. At that time, there were no Federal regulations to protect the country against the dangers posed by hazardous substances (mainly industrial chemicals, accumulated pesticides, cleaning solvents, and other chemical products) abandoned at sites throughout the nation. And so, in 1980 Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, to address these problems.

The major goal of the Superfund program is to protect human health and the environment by cleaning up areas, known as "sites," where hazardous waste contamination exists. The U.S. Environmental Protection Agency (EPA) is responsible for implementing the Superfund program.

At the time it passed the Superfund law, Congress believed that the problems associated with uncontrolled releases of hazardous waste could be



handled in five years with \$1.6 billion dollars. However, as more and more sites were identified, it became apparent that the problems were larger than anyone had originally believed. Thus, Congress passed the Superfund Amendments and Reauthorization Act (SARA) in 1986. SARA expanded and strengthened the authorities given to EPA in the original legislation and provided a budget of \$8.5 billion over five years. Superfund was extended for another three years in 1991.

What is EPA's Job at Superfund Sites?

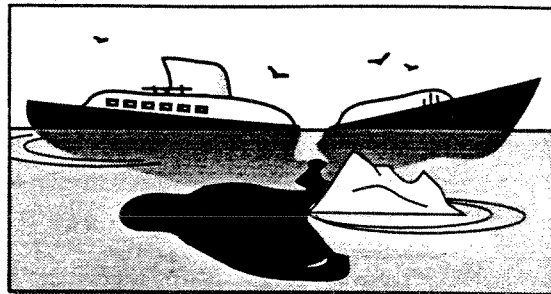
For more than 10 years, EPA has been implementing the Superfund law by:

- Evaluating potential hazardous waste sites to determine if a problem exists;
- Finding the parties who caused the hazardous waste problems and directing them to address these problems under EPA oversight or requiring them to repay EPA for addressing these problems; and
- Reducing immediate risks and tackling complex hazardous waste problems.

The Superfund site assessment process generally begins with the discovery of contamination at a site and ends with the completion of remediation (i.e., cleaning up the waste at a site) activities. This fact sheet explains the early part of the process, called the *site assessment* phase.

The National Response Center

The National Response Center (NRC), staffed by Coast Guard personnel, is the primary agency to contact for reporting all oil, chemical, and biological discharges into the environment anywhere in the U.S. and its territories. It is responsible for:



- Maintaining a telephone hotline 365 days a year, 24 hours a day;
- Providing emergency response support in specific incidents; and
- Notifying other Federal agencies of reports of pollution incidents.

To report a pollution incident, such as an oil spill, a pipeline system failure, or a transportation accident involving hazardous material, call the NRC hotline at **800-424-8802**.

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Site Discovery

Hazardous waste sites are discovered in various ways. Sometimes concerned residents find drums filled with unknown substances surrounded by dead vegetation and call the NRC, EPA, or the State environmental agency; or an anonymous caller to the NRC or EPA reports suspicious dumping activities. Many sites come to EPA's attention through routine inspections conducted by other Federal, State, or local government officials. Other sites have resulted from a hazardous waste spill or an explosion. EPA enters these sites into a computer system that tracks any future Superfund activities.

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Preliminary Assessment

After learning about a site, the next step in the site assessment process is to gather existing information about the site. EPA calls this the *preliminary assessment*. Anyone can request that a preliminary assessment be performed at a site by petitioning EPA, the State environmental agency, local representatives, or health officials.

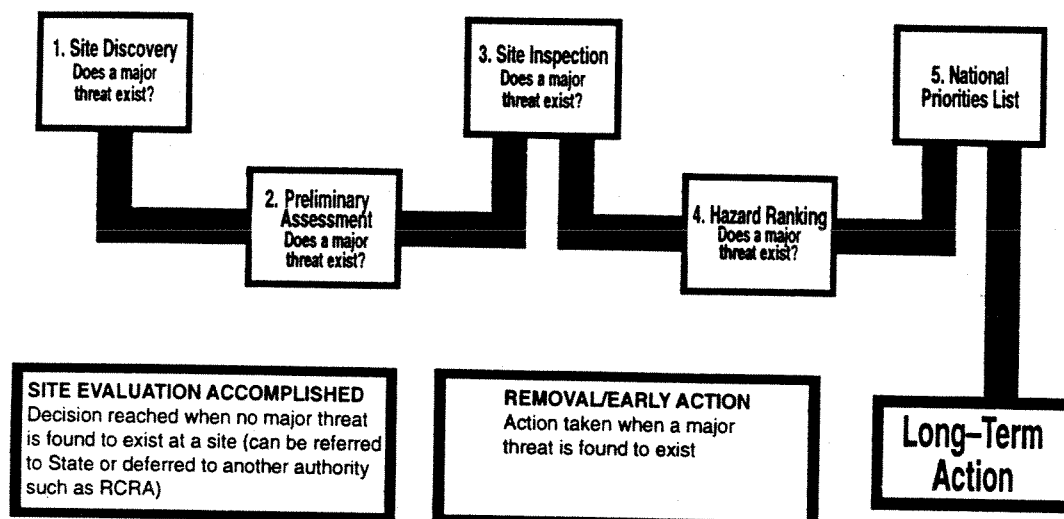
During the preliminary assessment, EPA or the State environmental agency:

- ◆ Reviews available background records;
- ◆ Determines the size of the site and the area around it;

- ◆ Tries to determine whether hazardous substances are involved;
- ◆ Identifies actual or potential pollution victims, such as the nearby population and sensitive environments;
- ◆ Makes phone calls or interviews people who may be familiar with the site; and
- ◆ Evaluates the need for early action using EPA's removal authority.

By gathering information and possibly visiting the site, EPA or the State environmental agency is able to determine if major threats exist and if cleanup is needed. Many times, the preliminary assessment indicates that no major threats exist.

The Site Assessment Process



However, if hazardous substances do pose an immediate threat, EPA quickly acts to address the threat. When a site presents an immediate danger to human health or the environment—for example, there is the potential for a fire or an explosion or the drinking water is contaminated as a result of hazardous substances leaking out of drums—EPA can move quickly to address site contamination. This action is called a *removal* or an *early action*. Additional information on early actions can be found on page 4.

EPA or the State environmental agency then decides if further Federal actions are required. Of the more than 35,000 sites discovered since 1980, only a small percentage have needed further remedial action under the Federal program.

A report is prepared at the completion of the preliminary assessment. The report includes a description of any hazardous substance release, the possible source of the release, whether the contamination could endanger people or the environment, and the pathways of the release. The information outlined in this report is formed into hypotheses that are tested if further investigation takes place. You can request a copy of this report once it becomes final—just send your name and address to your EPA regional Superfund office. See page 8 for further information on these contacts.

Sometimes it is difficult to tell if there is contamination at the site based on the initial information gathering. When this happens, EPA moves on to the next step of the site assessment, called the *site inspection*.

Making Polluters Pay

One of the major goals of the Superfund program is to have the responsible parties pay for or conduct remedial activities at hazardous waste sites. To accomplish this goal, EPA:

- ◆ Researches and determines who is responsible for contaminating the site;
- ◆ Issues an order requiring the private parties to perform cleanup actions with EPA oversight; and
- ◆ Recovers costs that EPA spends on site activities from the private parties.

Removals/Early Actions

EPA can take action quickly if hazardous substances pose an immediate threat to human health or the environment. These actions are called *removals* or *early actions* because EPA rapidly eliminates or reduces the risks at the site. EPA can take a number of actions to reduce risks, including:

- ◆ Fencing the site and posting warning signs to secure the site against trespassers;
- ◆ Removing, containing, or treating the source of the contamination;
- ◆ Providing homes and businesses with safe drinking water; and, as a last resort,
- ◆ Temporarily relocating residents away from site contamination.

"EPA can take action quickly if hazardous substances pose an immediate threat to human health or the environment."

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Site Inspection

If the preliminary assessment shows that hazardous substances at the site may threaten residents or the environment, EPA performs a site inspection. During the site inspection, EPA or the State collects samples of the suspected hazardous substances in nearby soil and water. EPA may initiate a concurrent SI/remedial investigation at those sites that are most serious and determined early as requiring long-term action. Sometimes, wells have to be drilled to sample the ground water. Site inspectors may wear protective gear, including coveralls and respirators, to protect themselves against any hazardous substances present at the site. Samples collected during the site inspection are sent to a laboratory for analysis to help EPA answer many questions, such as:

- ◆ Are hazardous substances present at the site? If so, what are they, and approximately

how much of each substance is at the site?

- ◆ Have these hazardous substances been released into the environment? If so, when did the releases occur, and where did they originate?
- ◆ Have people been exposed to the hazardous substances? If so, how many people?
- ◆ Do these hazardous substances occur naturally in the immediate area of the site? At what concentrations?
- ◆ Have conditions at the site gotten worse since the preliminary assessment? If so, is an early action or removal needed? (See box above.)

Often, the site inspection indicates that there is no release of major contamination at the site, or that the hazardous substances are safely contained and have no possibility of being released into the environment. In these situations, EPA decides that no further Federal inspections or remedial actions are needed. This decision is referred to as *site evaluation accomplished*. (See page 5 for more details on the *site evaluation accomplished* decision.)

At the completion of the site inspection, a report is prepared. This report is available to the public—call your EPA regional Superfund office for a copy. See page 8 for the phone numbers of these offices.

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At sites with particularly complex conditions, EPA may need to perform a second SI to obtain legally defensible documentation of the releases.

Because EPA has limited resources, a method has been developed to rank the sites and set priorities throughout the nation. That method, known as the *Hazard Ranking System*, is the next step in the site assessment process.

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Hazard Ranking System

EPA uses the information collected during the preliminary assessment and site inspection to evaluate the conditions at the site and determine the need for long-term remedial actions. When evaluating the seriousness of contamination at a site, EPA asks the following questions:

- ◆ Are people or sensitive environments, such as wetlands or endangered species, on or near the site?
- ◆ What is the toxic nature and volume of waste at the site?
- ◆ What is the possibility that a hazardous substance is in or will escape into ground water, surface water, air, or soil?

Based on answers to these questions, each site is given a score between zero and 100. Sites that score 28.5 or above move to the next step in the process: listing on the *National Priorities List*. Sites that score below 28.5 are referred to the State for further action.

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National Priorities List

Sites that are listed on the *National Priorities List* present a potential threat to human health and the environment, and require further study to determine what, if any, remediation is necessary. EPA can pay for and conduct

Site Evaluation Accomplished

In many instances, site investigators find that potential sites do not warrant Federal action under the Superfund program. This conclusion can be attributed to one of two reasons:

- ◆ The contaminants present at the site do not pose a major threat to the local population or environment; or
- ◆ The site should be addressed by another Federal authority, such as EPA's Resource Conservation and Recovery Act (RCRA) hazardous waste management program.

When investigators reach this conclusion, the site evaluation is considered accomplished. A site can reach this point at several places during the site assessment process, namely at the conclusion of the preliminary assessment or the site inspection, or once the site is scored under the Hazard Ranking System.

remedial actions at NPL sites if the responsible parties are unable or unwilling to take action themselves. There are three ways a site can be listed on the National Priorities List:

- ◆ It scores 28.5 or above on the Hazard Ranking System;
- ◆ If the State where the site is located gives it top priority, the site is listed on the National Priorities List regardless of the HRS score; or
- ◆ EPA lists the site, regardless of its score, because all of the following are true about the site:
 - ▼ The Agency for Toxic Substances and Disease Registry (ATSDR), a group within the U.S. Public Health Service, issues a health advisory recommending that the local population be *dissociated* from the site (i.e., that the people be temporarily relocated or the immediate public health threat be removed);
 - ▼ EPA determines that the site poses a significant threat to human health; and
 - ▼ Conducting long-term remediation activities will be more effective than

addressing site contamination through early actions.

The list of proposed sites is published in the *Federal Register*, a publication of legal notices issued by Federal agencies. The community typically has 60 days to comment on the list. After considering all comments, EPA publishes a list of those sites that are officially on the National Priorities List. When a site is added to the National Priorities List, the site assessment is completed. Long-term actions take place during the next phase. See page 6 for more details on long-term actions.

As a Concerned Citizen, How Can I Help ?

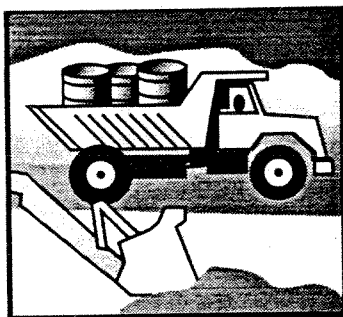
- ☛ Read this fact sheet.
- ☛ Call EPA with any potential sites in your area.
- ☛ Provide EPA with site information.
- ☛ Comment on proposed listing of sites on the National Priorities List.
- ☛ If the site is listed on the NPL, work with your citizens' group to apply for a technical assistance grant.



Addressing Sites in the Long Term

Once a site is placed on the National Priorities List, it enters the long-term or remedial phase. The stages of this phase include:

- ✓ Investigating to fully determine the nature and extent of contamination at the site, which can include a public health assessment done by the ATSDR;
- ✓ Exploring possible technologies to address site contamination;
- ✓ Selecting the appropriate technologies—also called remedies;
- ✓ Documenting the selected remedies in a record of decision (ROD);
- ✓ Designing and constructing the technologies associated with the selected remedies;
- ✓ If necessary, operating and maintaining the technologies for several years (e.g., long-term treatment of ground water) to ensure safety levels are reached; and
- ✓ Deleting the site from the National Priorities List, completing Superfund's process and mission.



Some Commonly Asked Questions

Q: What exactly is a site?

A: EPA designates the area in which contamination exists as the "site." Samples are taken to define the area of contamination. At any time during the cleanup process the site may be expanded if contamination is discovered to have spread further.

Q: How long will it take to find out if a threat exists?

A: Within one year of discovering the site, EPA must perform a preliminary assessment. The preliminary assessment allows EPA to determine if there is an immediate danger at the site; if so, EPA takes the proper precautions. You will be notified if you are in danger. EPA may also contact you to determine what you know about the site.

Q: What is the State's role in all these investigations?

A: The State can take the lead in investigating and addressing contamination. It also provides EPA with background information on (1) immediate threats to the population or environment, and (2) any parties that might be responsible for site contamination. The State shares in the cost of any long-term actions conducted by the Superfund program, comments on the proposal of sites to the National Priorities List, and concurs on the selected remedies and final deletion of sites from the National Priorities List.

Q: Why are private contractors used to assess sites?

A: EPA has a limited workforce. By using private contractors, EPA is able to investigate more sites. Also, EPA is able to draw on the expertise of private contracting companies.

Q: Why are there so many steps in the evaluation process? Why can't you just take away all the contaminated materials right now, just to be safe?

A: When EPA assesses a site, it first determines if contamination poses any threats to the health of the local population and the integrity of the environment. Dealing with worst sites first is one of Superfund's national goals. By evaluating contamination in a phased approach, EPA can quickly identify sites that pose the greatest threats and move them through the site assessment process. Once EPA understands the conditions present at a site, it searches for the remedy that will best protect public health and the environment. Cost is only one factor in weighing equally protective remedies. Many sites do not warrant actions because no major threat exists. However, if a significant threat does exist, EPA will take action.

about Superfund Sites

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Q: If a site is added to the National Priorities List, how will we know when EPA has completed the cleanup efforts?

A: EPA notifies the public and requests their comments on the actions proposed to treat site contaminants. In addition, the community is notified when a site will be deleted from the National Priorities List. The entire process can take as long as 7 years; at sites where ground water is contaminated, it can take even longer.

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Q: I live next door to a site and I see EPA and contractor personnel wearing "moon suits." Am I safe?

A: EPA and contractor personnel wear protective gear because they might actually be handling hazardous materials. Also, these people are regularly exposed to contaminants at different sites and do not always know what contaminants they are handling. EPA takes steps to protect the public from coming in contact with the site contamination. If a dangerous situation arises, you will be notified immediately.

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Q: If a site is added to the National Priorities List, who pays for the activities?

A: EPA issues legal orders requiring the responsible parties to conduct site cleanup activities under EPA oversight. If the parties do not cooperate, Superfund pays and files suit for reimbursement from responsible parties. The sources of this fund are taxes on the chemical and oil industries; only a small fraction of the fund is generated by income tax dollars.

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Q: How can I get more information on any health-related concerns?

A: Contact your EPA regional Superfund office for more information. The ATSDR also provides information to the public on the health effects of hazardous substances. Ask your EPA regional Superfund office for the phone number of the ATSDR office in your region.

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Q: How can I verify your findings? What if I disagree with your conclusions?

A: You can request copies of the results of the site assessment by writing to your EPA regional Superfund office. The public is given the opportunity to comment on the proposal of a site to the National Priorities List and the actions EPA recommends be taken at the site. If a site in your community is listed on the National Priorities List, a local community group may receive grant funds from EPA to hire a technical advisor. Call your EPA regional Superfund office (see page 8) for the location of an information repository and for information on applying for a **technical assistance grant**.

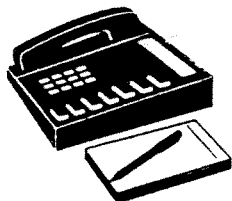
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Q: How can I get further information? How can I get a list of the sites EPA has investigated?

A: Contact your EPA regional Superfund office (see page 8) for more information and a list of sites in your area.

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Important Phone Numbers

For information on the Superfund program or to report a hazardous waste emergency, call the national numbers below.

U.S. EPA Headquarters Hazardous Site Evaluation Division

- ☐ Site Assessment Branch
703-603-8860

Federal Superfund Program Information

- ☐ EPA Superfund Hotline
800-424-9346

Emergency Numbers:

Hazardous Waste Emergencies

- ☐ National Response Center
800-424-8802

ATSDR Emergency Response Assistance

- ☐ Emergency Response Line
404-639-0615

For answers to site-specific questions and information on opportunities for public involvement, contact your region's Superfund community relations office.

EPA Region 1: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

- ☐ Superfund Community
Relations Section
617-565-2713

EPA Region 2: New Jersey, New York, Puerto Rico, Virgin Islands

- ☐ Superfund Community
Relations Branch
212-264-1407

EPA Region 3: Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia

- ☐ Superfund Community
Relations Branch
800-438-2474

EPA Region 4: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

- ☐ Superfund Site Assessment
Section
404-347-5065

EPA Region 5: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

- ☐ Office of Superfund
312-353-9773

EPA Region 6: Arkansas, Louisiana, New Mexico, Oklahoma, Texas

- ☐ Superfund Management
Branch, Information
Management Section
214-655-6718

EPA Region 7: Iowa, Kansas, Missouri, Nebraska

- ☐ Public Affairs Office
913-551-7003

EPA Region 8: Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

- ☐ Superfund Community
Involvement Branch
303-294-1124

EPA Region 9: Arizona, California, Hawaii, Nevada, American Samoa, Guam

- ☐ Superfund Office of
Community Relations
800-231-3075

EPA Region 10: Alaska, Idaho, Oregon, Washington

- ☐ Superfund Community
Relations
206-553-2711