EPA/540/4-90/028
September 1990

NATIONAL PRIORITIES LIST SITES: Nebraska

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Emergency & Remedial Response
Office of Program Management
Washington, D.C. 20460

If you wish to purchase copies of any additional State volumes or the National Overview volume, ***Superfund: Focusing on the Nation at Large***, contact:

National Technical Information Service (NTIS)
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4600

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INTRODUCTION: A BRIEF OVERVIEW

WHY THE SUPERFUND PROGRAM?

As the 1970s came to a close, a series of headline stories gave Americans a look at the dangers of dumping industrial and urban wastes on the land. First there was New York 's Love Canal. Hazardous waste buried there over a 25-year period contaminated streams and soil, and endangered the health of nearby residents. The result: evacuation of several hundred people. Then the leaking barrels at the Valley of the Drums in Kentucky attracted public attention, as did the dioxin tainted land and water in Times Beach, Missouri.

In all these cases, human health and the environment were threatened, lives were disrupted, property values depreciated. It became increasingly clear that there were large numbers of serious hazardous waste problems that were falling through the cracks of existing environmental laws. The magnitude of these emerging problems moved Congress to enact the Comprehensive Environmental Response, Compensation, and Liability Act in 1980. CERCLA — commonly known as the Superfund — was the first Federal law established to deal with the dangers posed by the Nation's hazardous waste sites.

After Discovery, the Problem Intensified

Few realized the size of the problem until EPA began the process of site discovery and site evaluation. Not hundreds, but thousands of potential hazardous waste sites existed, and they presented the Nation with some of the most complex pollution problems it had ever faced.

In the 10 years since the Superfund program began, hazardous waste has surfaced as a major environmental concern in every part of the United States. It wasn't just the land that was contaminated by past disposal practices. Chemicals in the soil were spreading into the groundwater (a source of drinking water for many) and into streams, lakes, bays, and wetlands. Toxic vapors contaminated the air at some sites, while at others improperly disposed or stored wastes threatened the health of the surrounding community and the environment.

EPA Identified More than 1,200 Serious Sites

EPA has identified 1,236 hazardous waste sites as the most serious in the Nation. These sites comprise the "National Priorities List": sites targeted for cleanup under the Superfund. But site discoveries continue, and EPA estimates that, while some will be deleted after lengthy cleanups, this list, commonly called the NPL, will continue to grow by approximately 100 sites per year, reaching 2,100 sites by the year 2000.

THE NATIONAL CLEANUP EFFORT IS MUCH MORE THAN THE NPL

From the beginning of the program, Congress recognized that the Federal government could not and should not address all environmental problems stemming from past disposal practices. Therefore, the EPA was directed to set priorities and establish a list of sites to target. Sites on the NPL (1,236) are thus a rela-

tively small subset of a larger inventory of potential hazardous waste sites, but they do comprise the most complex and environmentally compelling cases. EPA has logged more than 32,000 sites on its National hazardous waste inventory, and assesses each site within one year of being logged. In fact, over 90 percent of the sites on the inventory have been assessed. Of the assessed sites, 55 percent have been found to require no further Federal action because they did not pose significant human health or environmental risks. The remaining sites are undergoing further assessment to determine if long-term Federal cleanup activities are appropriate.

EPA IS MAKING PROGRESS ON SITE CLEANUP

The goal of the Superfund program is to tackle immediate dangers first, and then move through the progressive steps necessary to eliminate any long-term risks to public health and the environment.

The Superfund responds immediately to sites posing imminent threats to human health and the environment at both NPL sites and sites not on the NPL. The purpose is to stabilize, prevent, or temper the effects of a hazardous release, or the threat of one. These might include tire fires or transportation accidents involving the spill of hazardous chemicals. Because they reduce the threat a site poses to human health and the environment, immediate cleanup actions are an integral part of the Superfund program.

Immediate response to imminent threats is one of the Superfund 's most noted achievements. Where imminent threats to the public or environment were evident, EPA has completed or monitored emergency actions that attacked the most serious threats to toxic exposure in more than 1,800 cases.

The ultimate goal for a hazardous waste site on the NPL is a permanent solution to an environmental problem that presents a serious (but not an imminent) threat to the public or environment. This often requires a long-term effort. In the last four years, EPA has aggressively accelerated its efforts to perform these long-term cleanups of NPL sites. More cleanups were started in 1987, when the Superfund law was amended, than in any previous year. And in 1989 more sites than ever reached the construction stage of the Superfund cleanup process. Indeed construction starts increased by over 200 percent between late 1986 and 1989! Of the sites currently on the NPL, more than 500 — nearly half — have had construction cleanup activity. In addition, over 500 more sites are presently in the investigation stage to determine the extent of site contamination, and to identify appropriate cleanup remedies. Many other sites with cleanup remedies selected are poised for the start of cleanup construction activity. Measuring success by "progress through the cleanup pipeline," EPA is clearly gaining momentum.

EPA MAKES SURE CLEANUP WORKS

EPA has gained enough experience in cleanup construction to understand that environmental protection does not end when the remedy is in place. Many complex technologies — like those designed to clean up groundwater — must operate for many years in order to accomplish their objectives.

EPA 's hazardous waste site managers are committed to proper operation and maintenance of every remedy constructed. No matter who has been delegated responsibility for monitoring the cleanup work, the EPA will assure that the remedy is carefully followed and that it continues to do its job.

Likewise, EPA does not abandon a site even after the cleanup work is done. Every

five years the Agency reviews each site where residues from hazardous waste cleanup still remain to ensure that public and environmental health are still being safeguarded. EPA will correct any deficiencies discovered and report to the public annually on all five-year reviews conducted that year.

CITIZENS HELP SHAPE DECISIONS

Superfund activities also depend upon local citizen participation. EPA's job is to analyze the hazards and deploy the experts, but the Agency needs citizen input as it makes choices for affected communities.

Because the people in a community with a Superfund site will be those most directly affected by hazardous waste problems and cleanup processes, EPA encourages citizens to get involved in cleanup decisions. Public involvement and comment does influence EPA cleanup plans by providing valuable information about site conditions, community concerns and preferences.

This State volume and the companion National Overview volume provide general Superfund background information and descriptions of activities at each State NPL site. These volumes are intended to clearly describe what the problems are, what EPA and others participating in site cleanups are doing, and how we as a Nation can move ahead in solving these serious problems.

USING THE STATE AND NATIONAL VOLUMES IN TANDEM

To understand the big picture on hazardous waste cleanup, citizens need to hear about both environmental progress across the country and the cleanup accomplishments closer to home. The public should understand the challenges involved in hazardous waste cleanup and the decisions we must make — as a Nation — in finding the best solutions.

The National Overview volume — ***Superfund: Focusing on the Nation at Large*** — accompanies this State volume. The National Overview contains important information to help you understand the magnitude and challenges facing the Superfund program as well as an overview of the National cleanup effort. The sections describe the nature of the hazardous waste problem nationwide, threats and contaminants at NPL sites and their potential effects on human health and the environment, the Superfund program's successes in cleaning up the Nation's serious hazardous waste sites, and the vital roles of the various participants in the cleanup process.

This State volume compiles site summary fact sheets on each State site being cleaned up under the Superfund program. These sites represent the most serious hazardous waste problems in the Nation, and require the most complicated and costly site solutions yet encountered. Each State book gives a "snapshot" of the conditions and cleanup progress that has been made at each NPL site in the State through the first half of 1990. Conditions change as our cleanup efforts continue, so these site summaries will be updated periodically to include new information on progress being made.

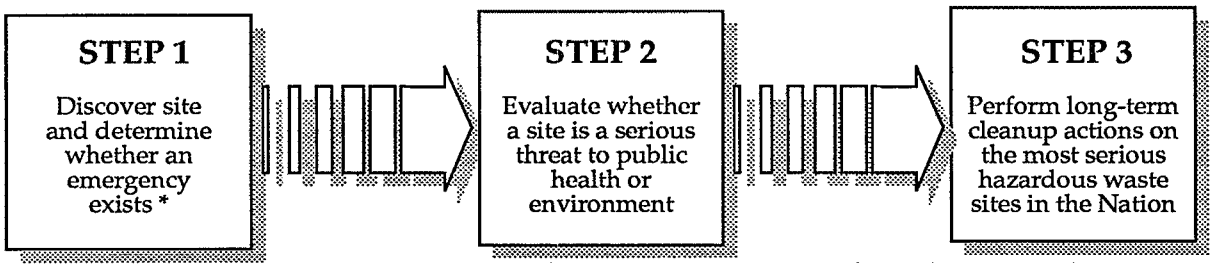
To help you understand the cleanup accomplishments made at these sites, this State volume includes a description of the process for site discovery, threat evaluation and long-term cleanup of Superfund sites. This description — ***How Does the Program Work to Clean Up Sites?*** — will serve as a good reference point from which to review the cleanup status at specific sites. A glossary also is included at the back of the book that defines key terms used in the site fact sheets as they apply to hazardous waste management.

SUPERFUND:

How Does the Program Work to Clean Up Sites?

The diverse problems posed by the Nation's hazardous waste sites have provided EPA with the challenge to establish a consistent approach for evaluating and cleaning up the Nation's most serious sites. To do this, EPA had to step beyond its traditional role as a regulatory agency to develop processes and guidelines for each step in these technically complex site cleanups. EPA has established procedures to coordinate the efforts of its Washington, D.C. Headquarters program offices and its front-line staff in 10 Regional Offices with the State governments, contractors, and private parties who are participating in site cleanup. An important part of the process is that any time during cleanup, work can be led by EPA or the State or, under their monitoring, by private parties who are potentially responsible for site contamination.

The process for discovery of the site, evaluation of threat, and long-term cleanup of Superfund sites is summarized in the following pages. The phases of each of these steps are highlighted within the description. The flow diagram below provides a summary of this three step process.



** Emergency actions are performed whenever needed in this three-step process*

FIGURE 1

Although this State book provides a current "snapshot" of site progress made only by emergency actions and long-term cleanup actions at Superfund sites, it is important to understand the discovery and evaluation process that leads up to identifying and cleaning up these most serious uncontrolled or abandoned hazardous waste sites in the Nation. This discovery and evaluation process is the starting point for this summary description.

STEP 1: SITE DISCOVERY AND EMERGENCY EVALUATION

How does EPA learn about potential hazardous waste sites?

Site discovery occurs in a number of ways. Information comes from concerned citizens — people may notice an odd taste or foul odor in their drinking water, or see half-buried leaking barrels; a hunter may come across a field where waste was dumped illegally. Or there may be an explosion or fire which alerts the State or local authorities to a problem. Routine investigations by State and local governments, and required reporting and inspection of facilities that generate, treat, store, or dispose of hazardous waste also help keep EPA informed about either actual or potential threats of hazardous substance releases. All reported sites or spills are recorded in the Superfund inventory (CERCLIS) for further investigation to determine whether they will require cleanup.

What happens if there is an imminent danger?

As soon as a potential hazardous waste site is reported, EPA determines whether there is an emergency requiring an immediate cleanup action. If there is, they act as quickly as possible to remove or stabilize the imminent threat. These short-term **emergency actions** range from building a fence around the contaminated area to keep people away or temporarily relocating residents until the danger is addressed, to providing bottled water to residents while their local drinking water supply is being cleaned up, or physically removing wastes for safe disposal.

However, emergency actions can happen at any time an imminent threat or emergency warrants them — for example, if leaking barrels are found when cleanup crews start digging in the ground or if samples of contaminated soils or air show that there may be a threat of fire or explosion, an immediate action is taken.

STEP 2: SITE THREAT EVALUATION

If there isn't an imminent danger, how does EPA determine what, if any, cleanup actions should be taken?

Even after any imminent dangers are taken care of, in most cases contamination may remain at the site. For example, residents may have been supplied with bottled water to take care of their immediate problem of contaminated well water. But now it's time to figure out what is contaminating the drinking water supply and the best way to clean it up. Or

EPA may determine that there is no imminent danger from a site, so now any long-term threats need to be evaluated. In either case, a more comprehensive investigation is needed to determine if a site poses a serious but not imminent danger, and requires a long-term cleanup action.

Once a site is discovered and any needed emergency actions are taken, EPA or the State collects all available background information not only from their own files, but also from local records and U.S. Geological Survey maps. This information is used to identify the site and to perform a **preliminary assessment** of its potential hazards. This is a quick review of readily available information to answer the questions:

- Are hazardous substances likely to be present?
- How are they contained?
- How might contaminants spread?
- How close is the nearest well, home, or natural resource area like a wetland or animal sanctuary?
- What may be harmed — the land, water, air, people, plants, or animals?

Some sites do not require further action because the preliminary assessment shows that they don't threaten public health or the environment. But even in these cases, the sites remain listed in the Superfund inventory for record keeping purposes and future reference. Currently, there are more than 32,000 sites maintained in this inventory.

If the preliminary assessment shows that a serious threat *may* exist, what's the next step?

Inspectors go to the site to collect additional information to evaluate its hazard potential. During this **site inspection**, they look for evidence of hazardous waste, such as leaking drums and dead or discolored vegetation. They may take some samples of soil, well water, river water, and air. Inspectors analyze the ways hazardous materials could be polluting the environment — such as runoff into nearby streams. They also check to see if people (especially children) have access to the site.

How does EPA use the results of the site inspection?

Information collected during the site inspection is used to identify the sites posing the most serious threats to human health and the environment. This way EPA can meet the

requirement that Congress gave them to use Superfund monies only on the worst hazardous waste sites in the Nation.

To identify the most serious sites, EPA developed the Hazard Ranking System (HRS). The HRS is the scoring system EPA uses to assess the relative threat from a release or a potential release of hazardous substances from a site to surrounding groundwater, surface water, air, and soil. A site score is based on the likelihood a hazardous substance will be released from the site, the toxicity and amount of hazardous substances at the site, and the people and sensitive environments potentially affected by contamination at the site.

Only sites with high enough health and environmental risk scores are proposed to be added to EPA's **National Priorities List (NPL)**. That's why there are 1,236 sites are on the NPL, but there are more than 32,000 sites in the Superfund inventory. Only NPL sites can have a long-term cleanup paid for from the national hazardous waste trust fund — the Superfund. But the Superfund can and does pay for emergency actions performed at any site, whether *or not it's on the NPL.*

How do people find out whether EPA considers a site a national priority for cleanup using Superfund money?

The public can find out whether a site that concerns them is on the NPL by calling their Regional EPA office at the number listed in this book.

The proposed NPL identifies sites that have been evaluated through the scoring process as the most serious problems among uncontrolled or abandoned hazardous waste sites in the U.S. In addition, a site will be added to the NPL if the Agency for Toxic Substances and Disease Registry issues a health advisory recommending that people be moved away from the site. Updated at least once a year, it's only after public comments are considered that these proposed worst sites are officially added to the NPL.

Listing on the NPL does not set the order in which sites will be cleaned up. The order is influenced by the relative priority of the site's health and environmental threats compared to other sites, and such factors as State priorities, engineering capabilities, and available technologies. Many States also have their own list of sites that require cleanup; these often contain sites not on the NPL that are scheduled to be cleaned up with State money. And it should be said again that any emergency action needed at a site can be performed by the Superfund whether or not a site is on the NPL.

STEP 3: LONG-TERM CLEANUP ACTIONS

After a site is added to the NPL, what are the steps to cleanup?

The ultimate goal for a hazardous waste site on the NPL is a permanent, long-term cleanup. Since every site presents a unique set of challenges, there is no single all-purpose solution. So a five-phase "remedial response" process is used to develop consistent and workable solutions to hazardous waste problems across the Nation:

1. Investigate in detail the extent of the site contamination: **remedial investigation,**
2. Study the range of possible cleanup remedies: **feasibility study,**
3. Decide which remedy to use: **Record of Decision or ROD,**
4. Plan the remedy: **remedial design**, and
5. Carry out the remedy: **remedial action.**

This remedial response process is a long-term effort to provide a permanent solution to an environmental problem that presents a serious, but not an imminent threat to the public or environment.

The first two phases of a long-term cleanup are a combined **remedial investigation and feasibility study** (RI/FS) that determine the nature and extent of contamination at the site, and identify and evaluate cleanup alternatives. These studies may be conducted by EPA or the State or, under their monitoring, by private parties.

Like the initial site inspection described earlier, a remedial investigation involves an examination of site data in order to better define the problem. But the remedial investigation is much more detailed and comprehensive than the initial site inspection.

A remedial investigation can best be described as a carefully designed field study. It includes extensive sampling and laboratory analyses to generate more precise data on the types and quantities of wastes present at the site, the type of soil and water drainage patterns, and specific human health and environmental risks. The result is information that allows EPA to select the cleanup strategy that is best suited to a particular site or to determine that no cleanup is needed.

Placing a site on the NPL does not necessarily mean that cleanup is needed. It is possible for a site to receive an HRS score high enough to be added to the NPL, but not ultimately require cleanup actions. Keep in mind that the purpose of the scoring process is to provide a preliminary and conservative assessment of *potential* risk. During subsequent site investigations, the EPA may find either that there is no real threat or that the site does not pose significant human health or environmental risks.

How are cleanup alternatives identified and evaluated?

EPA or the State or, under their monitoring, private parties identify and analyze specific site cleanup needs based on the extensive information collected during the remedial investigation. This analysis of cleanup alternatives is called a **feasibility study.**

Since cleanup actions must be tailored exactly to the needs of each individual site, more than one possible cleanup alternative is always considered. After making sure that all potential cleanup remedies fully protect human health and the environment and comply with Federal and State laws, the advantages and disadvantages of each cleanup alternative are carefully compared. These comparisons are made to determine their effectiveness in the short- and long-term, their use of permanent treatment solutions, and their technical feasibility and cost.

To the maximum extent practicable, the remedy must be a permanent solution and use treatment technologies to destroy principal site contaminants. But remedies such as containing the waste on site or removing the source of the problem (like leaking barrels) are often considered effective. Often special pilot studies are conducted to determine the effectiveness and feasibility of using a particular technology to clean up a site. Therefore, the combined remedial investigation and feasibility study can take between 10 and 30 months to complete, depending on the size and complexity of the problem.

Does the public have a say in the final cleanup decision?

Yes. The Superfund law requires that the public be given the opportunity to comment on the proposed cleanup plan. Their concerns are carefully considered before a final decision is made.

The results of the remedial investigation and feasibility study, which also point out the recommended cleanup choice, are published in a report for public review and comment. EPA or the State encourages the public to review the information and take an active role in the final cleanup decision. Fact sheets and announcements in local papers let the community know where they can get copies of the study and other reference documents concerning the site.

The public has a minimum of 30 days to comment on the proposed cleanup plan after it is published. These comments can either be written or given verbally at public meetings that EPA or the State are required to hold. Neither EPA nor the State can select the final cleanup remedy without evaluating and providing written answers to specific community comments and concerns. This "responsiveness summary" is part of EPA's write-up of the final remedy decision, called the Record of Decision or ROD.

The ROD is a public document that explains the cleanup remedy chosen and the reason it was selected. Since sites frequently are large and must be cleaned up in stages, a ROD may be necessary for each contaminated resource or area of the site. This may be necessary when contaminants have spread into the soil, water and air, and affect such sensitive areas as wetlands, or when the site is large and cleaned up in stages. This often means that a number of remedies using different cleanup technologies are needed to clean up a single site.

If every cleanup action needs to be tailored to a site, does the design of the remedy need to be tailored too?

Yes. Before a specific cleanup action is carried out, it must be designed in detail to meet specific site needs. This stage of the cleanup is called the **remedial design**. The design phase provides the details on how the selected remedy will be engineered and constructed.

Projects to clean up a hazardous waste site may appear to be like any other major construction project but, in fact, the likely presence of combinations of dangerous chemicals demands special construction planning and procedures. Therefore, the design of the remedy can take anywhere from 6 months to 2 years to complete. This blueprint for site cleanup includes not only the details on every aspect of the construction work, but a description of the types of hazardous wastes expected at the

site, special plans for environmental protection, worker safety, regulatory compliance, and equipment decontamination.

Once the design is complete, how long does it take to actually clean up the site and how much does it cost?

The time and cost for performing the site cleanup — called the **remedial action** — are as varied as the remedies themselves. In a few cases, the only action needed may be to remove drums of hazardous waste and decontaminate them — an action that takes limited time and money. In most cases, however, a remedial action may involve different and expensive measures that can take a long time.

For example, cleaning polluted groundwater or dredging contaminated river bottoms can take several years of complex engineering work before contamination is reduced to safe levels. Sometimes the selected cleanup remedy described in the ROD may need to be modified because of new contaminant information discovered or difficulties that were faced during the early cleanup activities. Taking into account these differences, a remedial cleanup action takes an average of 18 months to complete and costs an average of $26 million per site.

Once the cleanup action is complete, is the site automatically "deleted" from the NPL?

No. The deletion of a site from the NPL is anything but automatic. For example, cleanup of contaminated groundwater may take up to 20 years or longer. Also, in some cases the **long-term monitoring** of the remedy is required to ensure that it is effective. After construction of certain remedies, operation and maintenance (e.g., maintenance of ground cover, groundwater monitoring, etc.) or continued pumping and treating of groundwater, may be required to ensure that the remedy continues to prevent future health hazards or environmental damage, and ultimately meets the cleanup goals specified in the ROD. Sites in this final monitoring or operational stage of the cleanup process are designated as "construction completed".

It's not until a site cleanup meets all the goals and monitoring requirements of the selected remedy that EPA can officially propose the site for **"deletion"** from the NPL. And it's not until public comments are taken into consideration that a site can actually be deleted from the NPL. Deletions that have occurred are included in the "Construction Complete" category in the progress report found later in this book.

Can EPA make parties responsible for the contamination pay?

Yes. Based on the belief that "the polluters should pay," after a site is placed on the NPL, the EPA makes a thorough effort to identify and find those responsible for causing contamination problems at a site. Although EPA is willing to negotiate with these private parties and encourages voluntary cleanup, it has the authority under the Superfund law to legally force those potentially responsible for site hazards to take specific cleanup actions. All work performed by these parties is closely guided and monitored by EPA, and must meet the same standards required for actions financed through the Superfund.

Because these enforcement actions can be lengthy, EPA may decide to use Superfund monies to make sure a site is cleaned up without unnecessary delay. For example, if a site presents an imminent threat to public health and the environment, or if conditions at a site may worsen, it could be necessary to start the cleanup right away. Those responsible for causing site contamination are liable under the law for repaying the money EPA spends in cleaning up the site.

Whenever possible, EPA and the Department of Justice use their legal enforcement authorities to require responsible parties to pay for site cleanups, thereby preserving the Superfund for emergency actions and sites where no responsible parties can be identified.

HOW TO:

USING THE STATE VOLUME

The Site Fact Sheets presented in this book are comprehensive summaries that cover a broad range of information. The fact sheets describe hazardous waste sites on the National Priorities List (NPL) and their locations, as well as the conditions leading to their listing ("Site Description"). They list the types of contaminants that have been discovered and related threats to public and ecological health ("Threats and Contaminants"). "Cleanup Approach" presents an overview of the cleanup activities completed, underway, or planned. The fact sheets conclude with a brief synopsis of how much progress has been made on protecting public health and the environment. The summaries also pinpoint other actions, such as legal efforts to involve polluters responsible for site contamination and community concerns.

The following two pages show a generic fact sheet and briefly describes the information under each section. The square "icons" or symbols accompanying the text allow the reader to see at a glance which environmental resources are affected and the status of cleanup activities.

Icons in the *Threats and Contaminants* Section

Contaminated **Groundwater** resources in the vicinity or underlying the site. (Groundwater is often used as a drinking water source.)

Contaminated **Surface Water and Sediments** on or near the site. (These include lakes, ponds, streams, and rivers.)

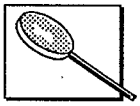
Contaminated **Air** in the vicinity of the site. (Pollution is usually periodic and involves contaminated dust particles or hazardous gas emissions.)

Contaminated **Soil and Sludges** on or near the site.

Threatened or contaminated **Environmentally Sensitive Areas** in the vicinity of the site. (Examples include wetlands and coastal areas, critical habitats.)

Icons in the *Response Action Status* Section

Initial Actions have been taken or are underway to eliminate immediate threats at the site.



Site Studies at the site are planned or underway.

Remedy Selected indicates that site investigations have been concluded and EPA has selected a final cleanup remedy for the site or part of the site.

Remedy Design means that engineers are preparing specifications and drawings for the selected cleanup technologies.

Cleanup Ongoing indicates that the selected cleanup remedies for the contaminated site — or part of the site — are currently underway.

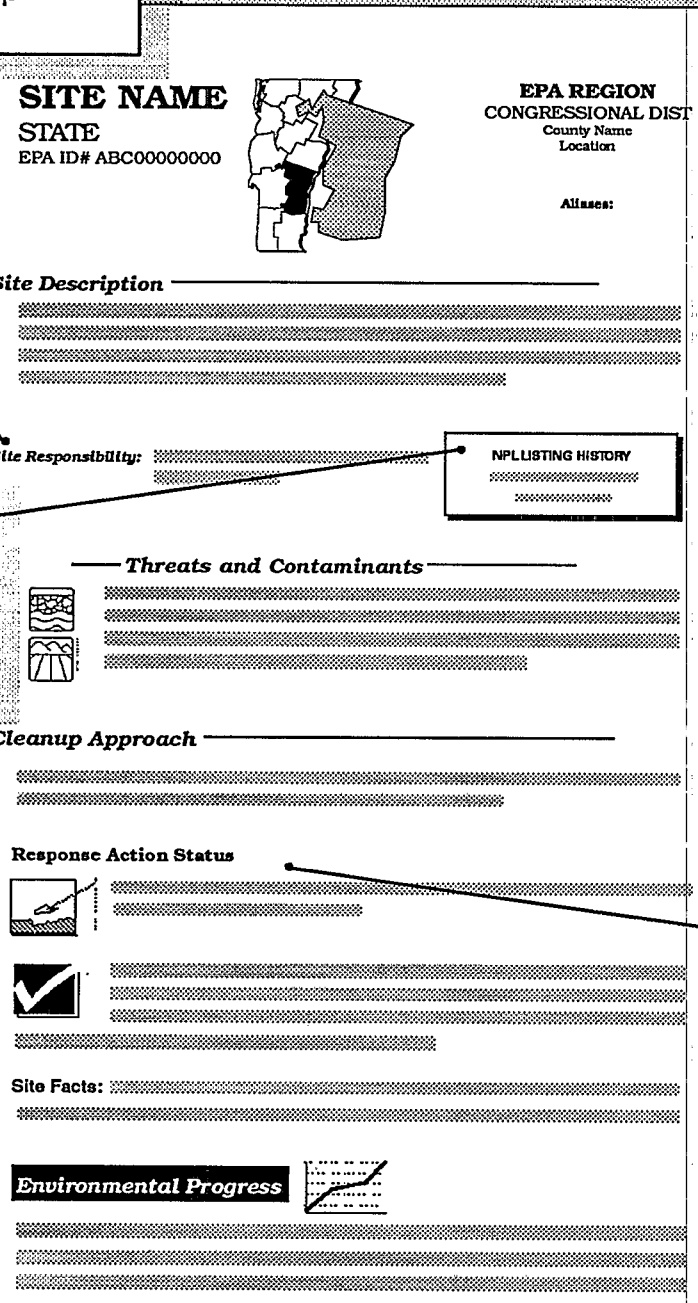
Cleanup Complete shows that all cleanup goals have been achieved for the contaminated site or part of the site.

Site Responsibility

Identifies the Federal, State, and/or potentially responsible parties that are taking responsibility for cleanup actions at the site.

NPL Listing History

Dates when the site was Proposed, made Final, and Deleted from the NPL



Environmental Progress

A summary of the actions to reduce the threats to nearby residents and the surrounding environment; progress towards cleaning up the site and goals of the cleanup plan are given here.

WHAT THE FACT SHEETS CONTAIN

Site Description

This section describes the location and history of the site. It includes descriptions of the most recent activities and past actions at the site that have contributed to the contamination. Population estimates, land usages, and nearby resources give readers background on the local setting surrounding the site. Throughout the site description and other sections of the site summary, technical or unfamiliar terms that are *italicized* are presented in the glossary at the end of the book. Please refer to the glossary for more detailed explanation or definition of the terms.

Threats and Contaminants

The major chemical categories of site contamination are noted as well as which environmental resources are affected. Icons representing each of the affected resources (may include air, groundwater, surface water, soil and contamination to environmentally sensitive areas) are included in the margins of this section. Potential threats to residents and the surrounding environments arising from the site contamination are also described. Specific contaminants and contaminant groupings are italicized and explained in more detail in the glossary.

Cleanup Approach

This section contains a brief overview of how the site is being cleaned up.

Response Action Status

Specific actions that have been accomplished or will be undertaken to clean up the site are described here. Cleanup activities at NPL sites are divided into separate phases depending on the complexity and required actions at the site. Two major types of cleanup activities are often described: initial, immediate or emergency actions to quickly remove or reduce imminent threats to the community and surrounding areas; and long-term remedial phases directed at final cleanup at the site. Each stage of the cleanup strategy is presented in this section of the summary. Icons representing the stage of the cleanup process (initial actions, site investigations, EPA selection of the cleanup remedy, engineering design phase, cleanup activities underway and completed cleanup) are located in the margin next to each activity description.

Site Facts

Additional information on activities and events at the site are included in this section. Often details on legal or administrative actions taken by EPA to achieve site cleanup or other facts pertaining to community involvement with the site cleanup process are reported here.

How To

The fact sheets are arranged in alphabetical order by site name. Because site cleanup is a dynamic and gradual process, all site information is accurate as of the date shown on the bottom of each page. Progress is always being made at NPL sites, and EPA will periodically update the Site Fact Sheets to reflect recent actions and publish updated State volumes.

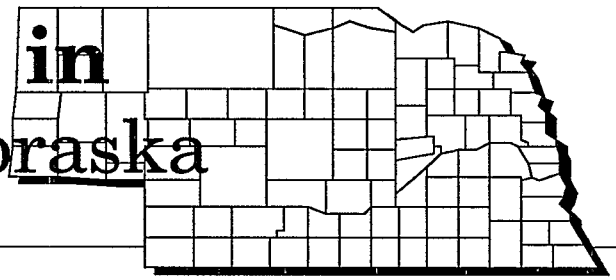
HOW CAN *YOU* USE THIS STATE BOOK?

You can use this book to keep informed about the sites that concern you, particularly ones close to home. EPA is committed to involving the public in the decisionmaking process associated with hazardous waste cleanup. The Agency solicits input from area residents in communities affected by Superfund sites. Citizens are likely to be affected not only by hazardous site conditions, but also by the remedies that combat them. Site cleanups take many forms and can affect communities in different ways. Local traffic may be rerouted, residents may be relocated, temporary water supplies may be necessary.

Definitive information on a site can help citizens sift through alternatives and make decisions. To make good choices, you must know what the threats are and how EPA intends to clean up the site. You must understand the cleanup alternatives being proposed for site cleanup and how residents may be affected by each one. You also need to have some idea of how your community intends to use the site in the future and to know what the community can realistically expect once the cleanup is complete.

EPA wants to develop cleanup methods that meet community needs, but the Agency can only take local concerns into account if it understands what they are. Information must travel both ways in order for cleanups to be effective and satisfactory. Please take this opportunity to learn more, become involved, and assure that hazardous waste cleanup at "your" site considers your community's concerns.

NPL Sites in State of Nebraska



Nebraska is located in the north central United States bordered by South Dakota to the north, Wyoming and Colorado to the west, Kansas to the south, and Missouri River and Iowa to the east. The State covers 77,355 square miles consisting of the till plains of the central lowland rising to the Great Plains and hill country of the north central and northwest. Nebraska experienced a 2.1 percent increase in population through the 1980s and currently has approximately 1,602,000 residents, ranking 36th in U.S. populations. Principal State industries are manufacturing, agriculture, and food processing. Nebraska manufactures transportation equipment, foods, electronic/ electrical equipment, instruments and related products, primary and fabricated metal products, and machinery.

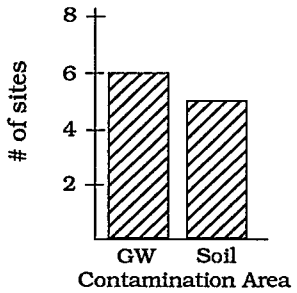
How Many Nebraska Sites Are on the NPL?

Proposed	2
Final	4
Deleted	0
	6

Where Are the NPL Sites Located?

Cong. District 01	2 sites
Cong. District 03	4 sites

How are Sites Contaminated and What are the Principal* Chemicals ?



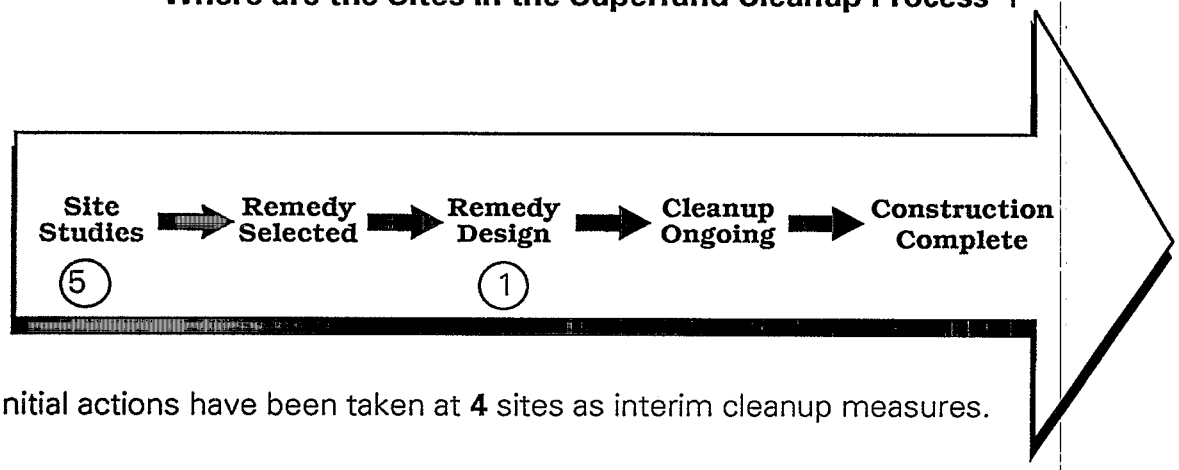
Groundwater: Volatile organic compounds (VOCs) and heavy metals (inorganics).

Soil: Volatile organic compounds (VOCs), heavy metals (inorganics), and polychlorinated biphenyls (PCBs).

*Appear at 20% or more sites

continued

Where are the Sites in the Superfund Cleanup Process*?



Initial actions have been taken at **4** sites as interim cleanup measures.

Who Do I Call with Questions?

The following pages describe each NPL site in Nebraska, providing specific information on threats and contaminants, cleanup activities, and environmental progress. Should you have questions, please call one of the offices listed below:

Nebraska Superfund Office	(402) 471-4217
EPA Region VII Superfund Office	(913) 551-7052
EPA Public Information Office	(202) 477-7751
EPA Superfund Hotline	(800) 424-9346
EPA Region VII Superfund Public Relations Office	(913) 551-7003

*Cleanup status reflects phase of site activities rather than administrative accomplishments.

The NPL Progress Report

The following Progress Report lists the State sites currently on or deleted from the NPL, and briefly summarizes the status of activities for each site at the time this report was prepared. The steps in the Superfund cleanup process are arrayed across the top of the chart, and each site's progress through these steps is represented by an arrow (➡) which indicates the current stage of cleanup at the site.

Large and complex sites are often organized into several cleanup stages. For example, separate cleanup efforts may be required to address the source of the contamination, hazardous substances in the groundwater, and surface water pollution, or to clean up different areas of a large site. In such cases, the chart portrays cleanup progress at the site's *most advanced stage,* reflecting the status of site activities rather than administrative accomplishments.

- ➡ An arrow in the "Initial Response" category indicates that an emergency cleanup or initial action has been completed or is currently underway. Emergency or initial actions are taken as an interim measure to provide immediete relief from exposure to hazardous site conditions or to stabilize a site to prevent further contamination.
- ➡ An arrow in the "Site Studies" category indicates that an investigation to determine the nature and extent of the contamination at the site is currently ongoing or planned to begin in 1991.
- ➡ An arrow in the "Remedy Selection" category means that the EPA has selected the final cleanup strategy for the site. At the few sites where the EPA has determined that initial response actions have eliminated site contamination, or that any remaining contamination will be naturally dispersed without further cleanup activities, a "No Action" remedy is selected. In these cases, the arrows in the Progress Report are discontinued at the "Remedy Selection" step and resume in the final "Construction Complete" category.
- ➡ An arrow at the "Remedial Design" stage indicates that engineers are currently designing the technical specifications for the selected cleanup remedies and technologies.
- ➡ An arrow marking the "Cleanup Ongoing" category means that final cleanup actions have been started at the site and are currently underway.
- ➡ A arrow in the "Construction Complete" category is used *only* when *all phases* of the site cleanup plan have been performed and the EPA has determined that no additional construction actions are required at the site. Some sites in this category may currently be undergoing long-term pumping and treating of groundwater, operation and maintenance or monitoring to ensure that the completed cleanup actions continue to protect human health and the environment.

The sites are listed in alphabetical order. Further information on the activities and progress at each site is given in the site "Fact Sheets" published in this volume.

Progress Toward Cleanup at NPL Sites in the State of Nebraska

Page	Site Name	County	NPL	Date	Initial Response	Site Studies	Remedy Selected	Remedy Design	Cleanup Ongoing	Construction Complete
1	CORNHUSKER ARMY AMMUNITION	HALL	Final	07/22/87	➡	➡				
3	HASTINGS GW CONTAMINATION	ADAMS	Final	06/10/86		➡	➡	➡		
7	LINDSAY MANUFACTURING CO.	PLATTE	Final	10/04/89	➡	➡				
9	NEBRASKA ARMY ORDNANCE PLANT	SAUNDERS	Prop	10/26/89	➡	➡				
11	WAVERLY GW CONTAMINATION	LANCASTER	Final	06/10/86	➡	➡				
13	10TH STREET SITE	PLATTE	Prop	10/26/89		➡				

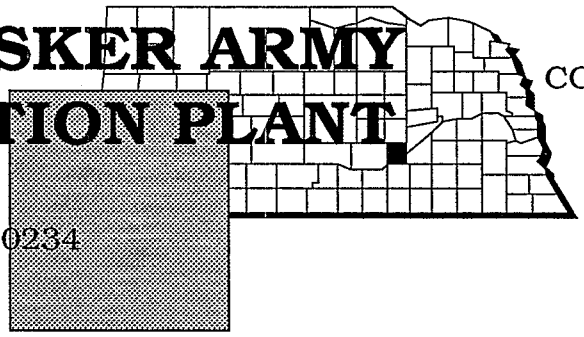
NPL:

Site Fact Sheets

CORNHUSKER ARMY AMMUNITION PLANT

NEBRASKA

EPA ID# NE2213820234



REGION 7

CONGRESSIONAL DIST. 03

Hall County

6 miles west of Grand Island

Site Description

The 19-acre Cornhusker Army Ammunition Plant is a U.S. Army Armament, Munitions, and Chemical Command facility. On standby status since 1973, the operation leases 16 square miles of land for agriculture, grazing, and wildlife management activities. The plant was built in 1942 to produce munitions and to provide support functions during World War II and has gone in and out of production over the years. It consists of five major components: (1) five major production areas where munitions were loaded, assembled, and packed; (2) a fertilizer manufactory; (3) two major storage facilities; (4) a sanitary *landfill*; and (5) a burn ground where materials contaminated with explosives were ignited. Activities at the site are currently limited to maintenance and leasing operations. Once the environmental studies required for real estate transactions are complete, the Army plans to sell the property. When the plant was active, staff disposed of wastewater contaminated with explosives into 56 earthen surface *impoundments*, which were located near the five production areas. Dried solids from the bottom of the pits were periodically scraped and ignited at the burning ground. Releases from the surface impoundments have contaminated about 250 private wells. Polluted groundwater has *migrated* off the site and has been detected as far as 3 1/2 miles beyond the plant's border. The area affected by groundwater contamination is mostly suburban, and residents rely on public and private wells for drinking water. Approximately 3,000 people live within 1 mile and 27,000 live within 3 miles of the site. Groundwater is also used for farmland irrigation and for watering livestock.

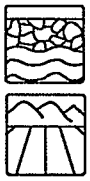
Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 10/15/84

Final Date: 07/22/87

Threats and Contaminants



Groundwater both on and off the site and soil in the surface impoundments are contaminated with various explosives. Human and livestock health can be adversely affected by drinking the contaminated groundwater or touching contaminated soil.

Cleanup Approach

This site is being addressed in two stages: immediate actions and a *long-term remedial phase* focusing on cleanup of the entire site.

Response Action Status

Immediate Actions: The Army provided bottled water to the 250 homes with contaminated wells until residences could be hooked up to the city's water system in 1985. In 1987, the Army started an incineration program to treat the contaminated soil in the 56 surface impoundments. Workers excavated the soil and then incinerated it to destroy the contaminants. The excavated pits were *backfilled* with sand and gravel from off the site, and the ash from the incinerator was landfilled on the site. The Army had burned 40,000 tons of soil by 1988, when the State-monitored operation ended.

Entire Site: Field work by the Army for an intensive study of groundwater contamination at and around the site began in 1990. The Department of Defense will investigate the *plume* of groundwater that has moved off the site to determine its shape, the types and levels of contaminants present, the extent of its threat to human health and the environment, and the appropriate cleanup standards to be sought. The study is scheduled for completion in 1992.

Site Facts: Cornhusker Army Ammunition Plant is participating in the *Installation Restoration Program* (IRP), which was established in 1978. Under this program, the Department of Defense seeks to identify, investigate, and clean up contamination at military installations. An *Interagency Agreement* between the EPA and the Department of Defense was signed in 1990. Under this agreement, the Army will investigate and clean up the site.

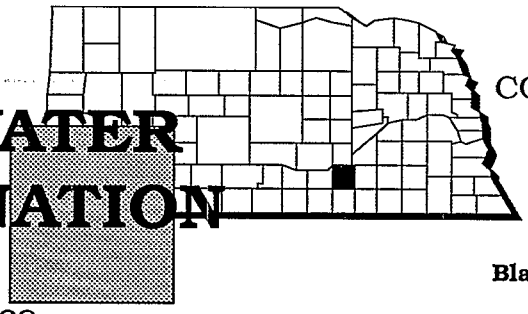
Environmental Progress

The provision of bottled water eliminated the potential of exposure to hazardous substances in the drinking water, and the incineration of contaminated soil greatly reduced other pathways of contamination at the Cornhusker Army Ammunition Plant. These actions will protect the public health and the environment while further studies and cleanup activities are conducted.

HASTINGS GROUNDWATER CONTAMINATION

NEBRASKA

EPA ID# NED980862668



REGION 7

CONGRESSIONAL DIST. 03

Adams County

City of Hastings

Aliases:

Blayney Ammunition Depot

Blayney ExNaval Ammunition Base

Hastings Plume

Naval Ammunition Depot (NAD)

Site Description

Concerns regarding *volatile organic compounds* (VOCs) and other *halogenated* compounds in the Hastings City water supply were investigated by the State in 1983. As a result, Hastings took two municipal wells out of service and placed other contaminated wells on a standby basis. Community Municipal Services, Inc. (CMS), a private water supply system serving the areas east of Hastings, also took two of their three wells off-line due to pollution. Recent EPA testing shows that the water supplied to users by these two utilities is safe to drink. Due to the size and complexity of the Hastings site, the following site description is organized into its four geographical areas.

Hastings East Industrial Park/Former Naval Ammunition Depot (NAD). The former NAD, located about 2 miles east of Hastings, straddles two counties: Clay and Adams. The 48,000-acre NAD was used for loading armaments until the the early 1950s, and later for the demilling of armaments until it was decommissioned in the early 1960s. The U.S. Army Corps of Engineers is conducting studies at the site under the authorization of the Department of Defense. The Corps has discovered that explosives, heavy metals, and VOCs are the major contaminants. The Adams County portion of the NAD subsite became the Hastings East Industrial Park in 1967 and is occupied by a variety of small private industries. The EPA and the Corps of Engineers are investigating this portion of the subsite. Although contaminants that have been detected are generally consistent with the chemicals used by the Navy operations, the industries established in the industrial park since the 1960s may have generated some of the VOCs being detected.

The Commercial Area. This area, east of the Hastings city limits, contains the FAR-MAR-CO, TCA Contamination Area, and North Landfill subsites. FAR-MAR-CO has stored and handled agricultural products, mostly grains, for more than 30 years. VOCs, including toxic grain fumigants, have *seeped* into the soils and groundwater. Grain dust explosions and spills on the subsite have contributed to the problem. While investigating soils at the FAR-MAR-CO subsite, EPA analysts discovered contamination on a portion now owned by a different company. The new owner was dumping a metal cleaning solvent on the ground at the back of the property. This area became the TCA Contamination Area subsite. The North Landfill was originally a local brickmaker's clay pit. Hastings operated it as a *landfill* in the 1960s, to dispose of various municipal and industrial wastes. Studies have revealed that the North Landfill is polluting *downgradient* wells with *trichloroethylene* (TCE) and other VOCs.

The Central Industrial Area. This area encompasses commercial and industrial properties situated in the heart of Hastings along the Burlington-Northern railroad right-of-way. The three subsites that make up this area are Colorado Avenue, Second Street, and Well #3. Three different industrial solvents have been detected in soils around Colorado Avenue. The source is suspected to be industrial discharges into the storm or sanitary sewers along this street. The Second Street subsite was discovered during the 1987 to 1988 investigation of Colorado Avenue. Pollution from an old coal gas plant operation was detected in the soil at this subsite and in the downgradient groundwater. Contaminants include VOCs, *polycyclic aromatic hydrocarbons* (PAHs), and *phenols.* Well #3 is one of the city wells taken out of service because of contamination. The EPA tested in the surrounding area in 1987 and 1988, found carbon tetrachloride and chloroform in the soil and groundwater, and tentatively traced the contamination to an accidental spill of grain fumigant.

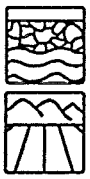
South Landfill. This landfill in southeast Hastings was operated by the City and accepted industrial waste during the 1960s and 1970s. Contamination at this subsite consists primarily of several VOCs.

Approximately 23,000 people live in the City of Hastings. Farm and pasture surround the urban area, and 20 private and public wells lie within a 3-mile radius of the site. All residents live within that 3-mile radius. A nearby stream and lake are used for recreation. Groundwater irrigates crops, waters stock, and provides water for home and business use.

Site Responsibility: This site is being addressed through a combination of Federal, State, and *potentially responsible parties'* actions.

NPL LISTING HISTORY
Proposed Date: 10/15/84
Final Date: 06/10/86

Threats and Contaminants



Groundwater and soils at the various subsites are contaminated with a wide range of VOCs and other halogenated organic compounds. The NAD site is contaminated with heavy metals and explosives in addition to VOCs. The city water supply is safe for drinking, but people and livestock may experience adverse health effects from drinking contaminated groundwater around the subsites.

Cleanup Approach

Because of the size and complexity of the site, a number of *long-term remedial phases* are planned to address general control of contamination (source control), groundwater contamination, and soil contamination. The status of each of the long-term remedial phases that will address the four geographic areas discussed earlier is described below.

continued

Response Action Status

Colorado Avenue: In 1988, the EPA selected a remedy for this subsite, part of the central industrial area in Hastings. The remedy focuses on cleaning up the source of groundwater contamination: 42,700 cubic yards of overlying soil polluted with VOCs. These are the soils associated with the contaminated sewers along Colorado Avenue. The remedy features: (1)"vacuuming" volatile chemicals from the soil without digging it up and treating the removed vapor with activated carbon, if necessary, and (2) monitoring soil, air, and groundwater at the site. The parties potentially responsible for the contamination at this subsite began designing the cleanup remedy in 1988, based on a pilot study of the proposed cleanup technology. The design is expected to be completed in late 1990.

North Landfill Groundwater: The EPA began an intensive study of groundwater contamination at this subsite in 1985. Workers installed three groundwater monitoring wells at the landfill and tested wells east of the site. Data revealed contamination by a variety of VOCs. In 1989, the parties potentially responsible for contamination at the landfill agreed to take over this study. This effort includes recommending to the EPA the best strategies for final cleanup. It is slated for completion at the end of 1990.

FAR-MAR-CO Soil: The EPA selected a remedy for soil cleanup at this subsite in 1988. A fumigant spill resulted in contamination of about 33,800 cubic yards of soil, and groundwater beneath it is also highly polluted. Features of the remedy are: (1)"vacuuming" volatile chemicals from the soil without digging it up and treating the removed vapor with activated carbon, if necessary; (2) temporarily covering the contaminated soils to restrict contact; and (3) monitoring soil, air, and groundwater at the site. The engineering design for the source control remedy is scheduled to begin late in 1990.

Hastings East Industrial Park: The U.S. Army Corps of Engineers began an intensive study of groundwater contamination at this subsite in 1986. The subsite is in the former Navy Ammunition Depot/Hastings East Industrial Park Area. In 1988, the Corps released the results of the first part of the study, which determined the extent and source of groundwater contamination. The report confirmed that explosives are the major contaminants at the site, along with heavy metals and VOCs. The second part of the Corps' study will focus on recommending cleanup strategies. A remedy is scheduled to be selected to control the source of groundwater contamination in 1990. Design of the remedy is scheduled to begin in 1991.

South Landfill: The field investigations needed to characterize the nature and extent of contamination at this subsite have been discussed with the City of Hastings and the other parties potentially responsible for its contamination. Work is scheduled to begin in 1991.

continued

FAR-MAR-CO Groundwater: The results of the groundwater monitoring activities that are part of the source control phase at this subsite (see "FAR-MAR-CO Soil," above) will be used to develop a technical approach for restricting the flow of contaminated water beneath the site and to evaluate the need for groundwater treatment once the source of contamination is cleaned up.

Well #3 Soil: The EPA selected a remedy for the Well #3 subsite in 1989. It focuses on cleaning up the source of groundwater contamination. The remedy features "vacuuming" volatile contaminants from the soils, and treating the vapors with activated carbon to remove the contaminants. The EPA plans to work with the State in conducting the soil cleanup at the Well #3 subsite. The design of the remedy is slated for completion in 1991.

North Landfill Source Control: (see above) Studies are under way to determine sources of groundwater contamination (see "North Landfill Groundwater," above) and cleanup alternatives. The studies are scheduled to be completed in late 1990.

TCA Contamination Area: The parties potentially responsible for the contamination at this subsite removed the polluted soil and transported it to a licensed hazardous waste disposal facility in 1989. The same parties signed a *Consent Order* with the EPA and are currently studying the need for any further cleanup activities. The study is scheduled to be completed by the end of 1990.

Second Street: Additional work is needed to define the extent of groundwater contamination at this subsite. A report on the results of field investigations to date is being prepared, which will lead to recommendations on the best strategies for cleanup.

Well #3 Groundwater: Studies into the nature and extent of groundwater contamination at this subsite and possible cleanup techniques are scheduled to begin in 1990. Cleanup activities will begin after cleanup of the source of contamination is completed (see "Well #3 Soil," above).

Site Facts: The EPA and the City of Hastings entered an *Administrative Order on Consent* in 1989 for conducting an investigation at the North Landfill subsite. Hastings Irrigation Pipe Company and the EPA signed an Administrative Order on Consent in 1989 for a study at the TCA Contamination Area.

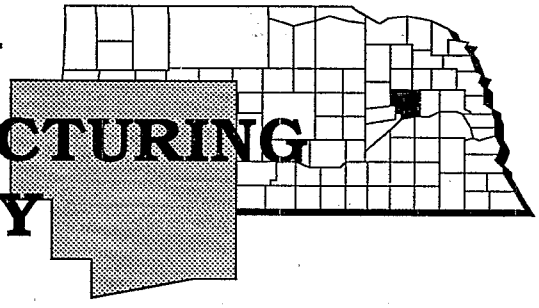
Environmental Progress

Due to the numerous long-term remedial phases and locations of contaminated areas at the Hastings Groundwater Contamination site, the status of cleanup activities varies at the different subsites. In general, however, the potential for exposure to hazardous substances in the groundwater and soil has been greatly reduced by closing down contaminated wells and removing *hot spots* of contaminated soil, while further studies and cleanup activities take place.

LINDSAY MANUFACTURING COMPANY

NEBRASKA

EPA ID# NED068645696



REGION 7

CONGRESSIONAL DIST. 03

Platte County

Lindsay

Site Description

Lindsay Manufacturing Company generates sulfuric acid waste from a galvanizing process at its plant. The wastes were discharged into an unlined pond for at least 15 years. The pit was closed in 1983 when three monitoring wells showed contamination. The site is surrounded by agricultural land. Approximately 3,000 people live within a 3-mile radius of the site, with the nearest residence being 300 feet away.

Site Responsibility: This site is being addressed through a combination of Federal, State, and *potentially responsible parties'* actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 10/04/89

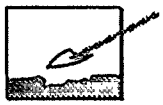
Threats and Contaminants

On-site groundwater contains heavy metals including zinc, iron, cadmium, chromium, and lead from former process wastes. Off-site groundwater contains heavy metals including cadmium, zinc, and *volatile organic compounds* (VOCs). VOCs have also been identified in the *perched* sand channel in the north half of the site, in clay soils in the area around the northern quarter of the main plant, and between the main plant and the south end of the galvanizing building. People could be exposed to contaminants by drinking water from contaminated private wells, by direct contact with contaminated water, or by eating food in which contaminants have *bioaccumulated.*

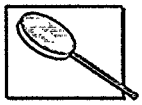
Cleanup Approach

This site is being addressed in two stages: initial actions and a single *long-term remedial phase* focusing on cleanup of the entire site.

Response Action Status

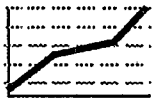


Initial Actions: In 1984, Lindsay began operating an interim pump and treat system whereby the groundwater is treated by neutralizing and removing contaminants. The State is monitoring this groundwater restoration project. Off-site monitoring wells show that the project is controlling the *migration* of contaminants from the site.



Entire Site: Lindsay currently is studying the nature and extent of contamination remaining at the site, as well as the alternative technologies for cleanup. The study is scheduled to be completed in 1990.

Environmental Progress

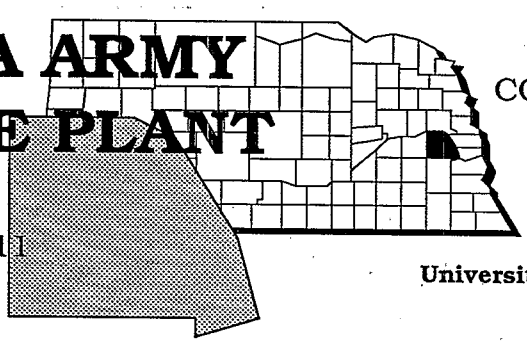


The groundwater restoration project described above has greatly reduced the potential for exposure to hazardous materials at the Lindsay Manufacturing site while further studies and cleanup activities are taking place.

NEBRASKA ARMY ORDNANCE PLANT

NEBRASKA

EPA ID# NE6211890011



REGION 7

CONGRESSIONAL DIST. 01

Saunders County

1/2 mile east of Mead

Aliases:

Mead Ordnance Plant

University of Nebraska, Mead Field Laboratory

Site Description

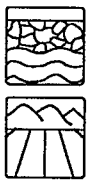
The 17,000-acre Nebraska Army Ordnance Plant site operated from 1942 to 1956 as a munition production plant for four bomb loading lines during World War II and the Korean War. The plant also was used for munitions storage and ammonium nitrate production. Some of the processes used organic solvents. Beginning in 1962, portions of the plant were sold to various entities. Today, the major production area of the former plant, approximately 9,000 acres, belongs to the University of Nebraska, which uses it as an agricultural research station. The remaining acreage is owned by the Nebraska National Guard and numerous individuals and corporations. Approximately 400 people obtain drinking water from wells within 3 miles of the site. Groundwater also is used for crop irrigation and livestock watering.

Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 10/26/89

Threats and Contaminants



The groundwater is contaminated with *volatile organic compounds* (VOCs) and munition wastes. The soil is also contaminated with munitions wastes as well as *polychlorinated biphenyls* (PCBs). People who touch or ingest contaminated groundwater or soil may be at risk. In addition, if contaminated groundwater is used for irrigating or watering livestock, the contaminants may accumulate in vegetables or animals and pose a health threat to those who eat them.

Cleanup Approach

This site is being addressed in two stages: an emergency action and a *long-term remedial phase* focusing on cleanup of the entire site.

continued

Response Action Status

Emergency Action: In 1989, the U.S. Army determined that a private well was contaminated. The EPA immediately responded by providing the owners with bottled water, which is now provided by the Army.

Entire Site: The Army will conduct an investigation in 1990 to determine the extent of contamination at the site. Once the investigation is completed, the results will be evaluated to select the proper technology to clean up the site.

Site Facts: The site is being investigated as part of the *Installation Restoration Program* (IRP). Under this program, the Defense Department is studying its current and former installations to determine the extent of contamination of these sites and appropriate cleanup activities.

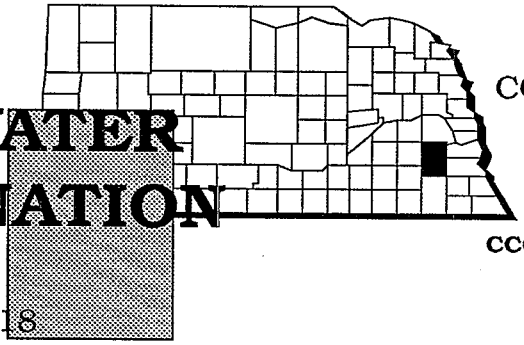
Environmental Progress

Providing bottled water has eliminated the potential of exposure to hazardous substances in the drinking water while cleanup actions are taken at the Nebraska Army Ordnance Plant site.

WAVERLY GROUNDWATER CONTAMINATION

NEBRASKA

EPA ID# NED980862718



REGION 7

CONGRESSIONAL DIST. 01

Lancaster County

Waverly

Aliases:

CCC Commodity Credit Corporation

Hedrick Site

Site Description

The Waverly Groundwater Contamination site extends over an 11-acre area underlying the City of Waverly. The U.S. Department of Agriculture operated a federal grain facility in Waverly from 1952 to 1974. A grain fumigant consisting of carbon tetrachloride and carbon disulfide was used at the facility from 1955 to 1965. Since 1975, the property has been owned by Lancaster County, which operated a district office and maintenance facility on the premises. The EPA and the State of Nebraska sampled the municipal wells in 1982 and found them to be contaminated. One well was taken out of service, two wells were placed on standby status, and the city drilled a new well to replace them. The area surrounding the site is predominantly agricultural. The population of Waverly is approximately 1,700 people. There is a residential area adjacent to the former grain facility. Several private wells near the site are used for livestock and crop irrigation. *Runoff* from the site drains into Salt Creek.

Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 10/15/84

Final Date: 06/10/86

Threats and Contaminants

Samples taken from the municipal wells contained concentrations of heavy metals, *volatile organic compounds* (VOCs), nitrates, and sulfates. The soil is contaminated with VOCs including carbon tetrachloride and chloroform. Contaminants from the soil have *seeped* into the *aquifer*, the source of water for the municipal water supply. The polluted wells were taken out of service and new wells drilled; therefore, the municipal water supply is safe to use. The new wells are *upgradient* of the site and are not likely to be threatened. If contaminated water is used for irrigation or for watering livestock, pollutants may accumulate in the crops or animals, which, if eaten, may pose a health threat to people. Because groundwater discharges into Salt Creek, fish in the creek may be contaminated and cause adverse health effects in people who eat them.

continued

Cleanup Approach

This site is being addressed in two stages: immediate actions and a *long-term remedial phase* focusing on cleanup of the entire site.

Response Action Status

Immediate Actions: In 1988, as an immediate response to the groundwater contamination, the EPA installed groundwater monitoring wells, a system of pipes and wells in the ground connected to a pump to remove vapors contaminating soil (soil gas extraction system), and a groundwater treatment system using *air stripping.* The groundwater treatment involves forcing a stream of air through the contaminated water to evaporate the chemicals, which are then released into the atmosphere. Air monitoring was conducted to ensure that emissions are within acceptable limits. Treated groundwater is discharged to a ditch near the site. The U.S. Department of Agriculture (USDA) is performing the operation and maintenance on the groundwater extraction and soil gas treatment system.

Entire Site: The USDA will conduct a study beginning in 1990 to determine how effective the immediate actions have been and, if necessary, propose additional actions.

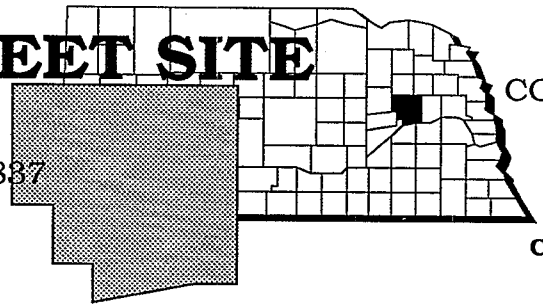
Environmental Progress

With the immediate actions described above, the potential for accidental contact with contaminated groundwater or soil has been greatly reduced. Although there is no present danger to the drinking water, the EPA and the USDA will continue to ensure that a safe water supply is provided to area residents by maintaining its groundwater monitoring program while further studies take place.

10TH STREET SITE

NEBRASKA

EPA ID# NED981713837



REGION 7

CONGRESSIONAL DIST. 03

Platte County

Columbus

Alias:

Columbus Public Water Supply

Site Description

The 10th Street site consists of nine municipal wells located in and around the city of Columbus. The EPA conducted a soil and gas survey in 1988 and found that four of the wells are contaminated with *volatile organic compounds* (VOCs). The highest contaminant level was detected under a city parking lot that was formerly used as a scrap metal yard. Among potential sources of soil contamination are a dry cleaning facility behind the lot and a laundromat. The municipal wells within 3 miles of the site provide drinking water to approximately 18,600 people. All the wells use the shallow *aquifer* as their water source, which is known to have been contaminated.

Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 10/26/89

Threats and Contaminants

The groundwater serving municipal wells is contaminated with VOCs. The hazardous materials on site could contaminate the nearby Loup River; however, there are no known toxic effects from consuming the drinking water.

Cleanup Approach

This site is being addressed in a single *long-term remedial phase* focusing on cleanup of the entire site.

continued

Response Action Status

Entire Site: The EPA plans to start an investigation of the site to evaluate the nature and extent of contamination. After the work is completed, scheduled for 1992, the EPA will be able to determine the best methods for the site cleanup.

Environmental Progress

At the time that this summary was written, this site had just obtained NPL status, and it was too early to discuss environmental progress. The EPA will be performing a study to assess the need for any intermediate actions to make the site safer while waiting for long-term cleanup actions to begin. Results of this assessment will be described in our next edition.

GLOSSARY:

TERMS USED IN THE FACT SHEETS

This glossary defines the italicized terms used in the site fact sheets for the State of Nebraska. The terms and abbreviations contained in this glossary are often defined in the context of hazardous waste management as described in the site fact sheets, and apply specifically to work performed under the Superfund program. Therefore, these terms may have other meanings when used in a different context.

Administrative Order On Consent: A legal and enforceable agreement between EPA and the parties potentially responsible for site contamination. Under the terms of the Order, the potentially responsible parties agree to perform or pay for site studies or cleanups. It also describes the oversight rules, responsibilities and enforcement options that the government may exercise in the event of non-compliance by potentially responsible parties. This Order is signed by PRPs and the government; it does not require approval by a judge.

Air Stripping: A process whereby volatile organic chemicals (VOCs) are removed from contaminated material by forcing a stream of air through it in a pressurized vessel. The contaminants are evaporated into the air stream. The air may be further treated before it is released into the atmosphere.

Aquifer: An underground layer of rock, sand, or gravel capable of storing water within cracks and pore spaces, or between grains. When water contained within an aquifer is of sufficient quantity and quality, it can be tapped and used for drinking or other purposes. The water contained in the aquifer is called groundwater.

Backfill: To refill an excavated area with removed earth; or the material itself that is used to refill an excavated area.

Bioaccumulate: The process by which some contaminants or toxic chemicals gradually collect and increase in concentration in living tissue, such as in plants, fish, or people as they breathe contaminated air, drink contaminated water, or eat contaminated food.

Consent Order: [see Administrative Order on Consent].

Downgradient: A downward hydrologic slope that causes groundwater to move toward lower elevations. Therefore, wells *downgradient* of a contaminated groundwater source are prone to receiving pollutants.

Halogens: Reactive non-metals, such as chlorine and bromine. Halogens are very good oxidizing agents and, therefore, have many industrial uses. They are rarely found by themselves; however, many chemicals such as polychlorinated biphenyls (PCBs), some volatile organic compounds (VOCs), and dioxin are reactive because of the presence of halogens.

Hot Spot: An area or vicinity of a site containing exceptionally high levels of contamination.

Impoundment: A body of water or sludge confined by a dam, dike, floodgate, or other barrier.

Installation Restoration Program: The specially funded program established in 1978 under which the Department of Defense has been identifying and evaluating its hazardous waste sites and controlling the migration of hazardous contaminants from those sites.

Interagency Agreement: A written agreement between EPA and a Federal agency that has the lead for site cleanup activities (e.g. the Department of Defense), that sets forth the roles and responsibilities of the agencies for performing and overseeing the activities. States are often parties to interagency agreements.

Landfill: A disposal facility where waste is placed in or on land.

Long-term Remedial Phase: Distinct, often incremental, steps that are taken to solve site pollution problems. Depending on the complexity, site cleanup activities can be separated into a number of these phases.

Migration: The movement of oil, gas, contaminants, water, or other liquids through porous and permeable rock.

Perched (groundwater): Groundwater separated from another underlying body of groundwater by a confining layer, often clay or rock.

Phenols: Organic compounds that are used in plastics manufacturing and are by-products of petroleum refining, tanning, textile, dye, and resin manufacturing. Phenols are highly poisonous and can make water taste and smell bad.

Plume: A body of contaminated groundwater flowing from a specific source. The movement of the groundwater is influenced by such factors as local groundwater flow patterns, the character of the aquifer in which groundwater is contained, and the density of contaminants.

Polycyclic Aromatic Hydrocarbons or Polyaromatic Hydrocarbons (PAHs): PAHs, such as pyrene, are a group of highly reactive organic compounds found in motor oil. They are a common component of creosotes and can cause cancer.

Polychlorinated Biphenyls (PCBs): A group of toxic chemicals used for a variety of purposes including electrical applications, carbonless copy paper, adhesives, hydraulic fluids, microscope emersion oils, and caulking compounds. PCBs are also produced in certain combustion processes. PCBs are extremely persistent in the environment because they are very stable, non-reactive, and highly heat resistant. Burning them produces even more toxins. Chronic exposure to PCBs is believed to cause liver damage. It is also known to bioaccumulate in fatty tissues. PCB use and sale was banned in 1979 with the passage of the Toxic Substances Control Act.

Potentially Responsible Parties (PRPs): Parties, including owners, who may have contributed to the contamination at a Superfund site and may be liable for costs of response actions. Parties are considered PRPs until they admit liability or a court makes a determination of liability. This means that PRPs may sign a consent decree or administrative order on consent [see Administrative Order on Consent] to participate in site cleanup activity without admitting liability.

Runoff: The discharge of water over land into surface water. It can carry pollutants from the air and land into receiving waters.

Seeps: Specific points where releases of liquid (usually leachate) form from waste disposal areas, particularly along the lower edges of landfills.

Trichloroethylene (TCE): A stable, colorless liquid with a low boiling point. TCE has many industrial applications, including use as a solvent and as a metal degreasing agent. TCE may be toxic to people when inhaled, ingested, or through skin contact and can damage vital organs, especially the liver [see also Volatile Organic Compounds].

Upgradient: An upward slope; demarks areas that are higher than contaminated areas and, therefore, are not prone to contamination by the movement of polluted groundwater.

Volatile Organic Compounds (VOCs): VOCs are made as secondary petrochemicals. They include light alcohols, acetone, trichloroethylene, perchloroethylene, dichloroethylene, benzene, vinyl chloride, toluene, and methylene chloride. These potentially toxic chemicals are used as solvents, degreasers, paints, thinners, and fuels. Because of their volatile nature, they readily evaporate into the air, increasing the potential exposure to humans. Due to their low water solubility, environmental persistence, and widespread industrial use, they are commonly found in soil and groundwater.