



Incineration Questions and Answers Fact Sheet



8066

Crab Orchard National Wildlife Refuge Superfund Site

Williamson County, Illinois

November 1989

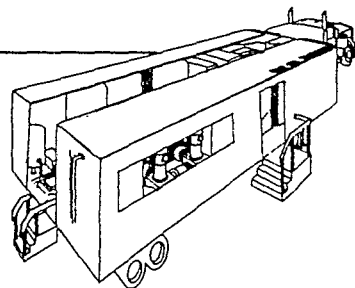
Introduction

Contamination has existed at the Crab Orchard National Wildlife Refuge since the 1940s, when industrial tenants of the U.S. Department of Defense manufactured munitions and explosives. After World War II, manufacturing of PCB transformers and capacitors, plated metal parts, fiber glass boats, explosives, and other products continued on the Refuge.

In 1984, potential contamination problems at Crab Orchard were brought to the U.S. Environmental Protection Agency's (U.S. EPA) attention, which resulted in the site's placement on the National Priorities List in 1987. Since that time, U.S. EPA, in conjunction with the

U.S. Department of Interior, has been investigating Crab Orchard to determine the types and amounts of contaminants, as well as the extent of risks to public health and the environment. The investigation determined, among other things, that four areas of the Refuge contain an estimated 30,000 cubic yards of soil and sediment contaminated with an estimated 70,000 pounds of PCB. Long-term exposure to PCB can cause liver damage, and is a suspected cause of cancer.

On August 18, 1989, following a study of technologies to address the PCB-contaminated soil, U.S. EPA released a proposed plan for cleaning up the site.



How does U.S. EPA propose to clean up the PCB-contaminated soil and sediment?

The 30,000 cubic yards of PCB-contaminated soil and sediment would be excavated, then burned in a mobile incinerator at the Crab Orchard site. The incinerator would destroy or remove 99.9999 percent of the PCBs, breaking it down into non-toxic elements like hydrogen and carbon. The ash resulting from incineration would then be tested to determine if it is contaminated with hazardous metals. If contamination is found, then the ash would be encased in a cement-like material and placed in a landfill which would be constructed at the Refuge.

Would the incineration of PCBs pose a health risk to the public?

No, the incinerator would pose no significant health risk to the public. No incinerator or presently known technology can destroy 100 percent of the hazardous waste. For PCBs, U.S. EPA requires that 99.9999 percent must be destroyed or removed. Further, emissions from the incinerator at the smoke stack may not exceed levels which might result in the risk of one person in a million contracting cancer. Since the incinerator would be operated in an area with restricted public access, health risks from emissions would be at much lower level. Tests of operating state-of-the-art incinerators have found them capable of meeting or exceeding performance and emissions standards.

As it stands now, the PCB-contaminated soil poses a one-in-a-thousand cancer risk from periodic contact by humans. In contrast, a person breathing emissions right next to the incinerator during the entire period of operation would have more than a 10,000 times lower risk of contracting cancer than from conditions presently existing at the site.



00000724

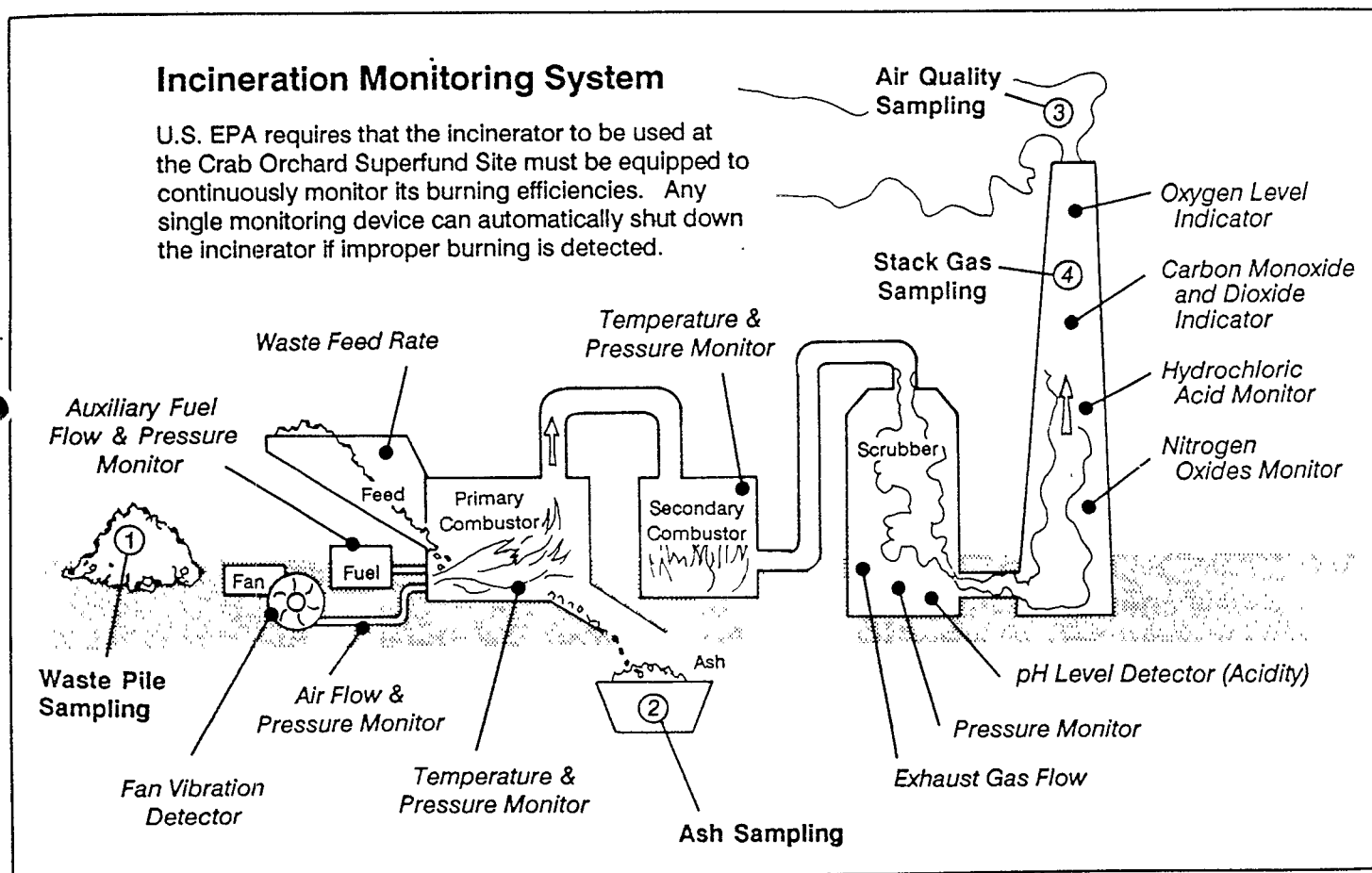
Does incineration result in air pollution and related health risks?

One potential problem with incineration is the formation of toxic chemicals called dioxins and furans. These can result from improperly operated incinerators that do not completely burn material. The chemicals can be formed in the incinerator and released through the smoke stack. In order to ensure that these materials are not formed, the incinerator would be equipped to automatically shut down if the incinerator temperature drops below the level needed to completely burn the material. The incinerator would stop well before the temperature inside drops to the point where dioxins and furans may be formed. A second safety feature of the incinerator would be sampling equipment, which would monitor emissions to ensure complete burning.

Because metals can't be destroyed by incineration, the metals which contaminate some of the soil could be emitted during incineration. However,

the incinerator would include air pollution control equipment designed to capture those metals so that they would not be released into the air. The most significant metal present at Crab Orchard is lead. U.S. EPA has developed air quality standards which are designed to protect the public from health threats caused by the inhalation of lead. The incinerator must meet or exceed these standards at all times during operations.

Finally, concern has been expressed that small particles emitted from the incinerator may pose a health risk. U.S. EPA has established standards for the emission of small particulates, which limit releases to below levels which may pose a health risk. The incinerator must meet or exceed these standards at all times during operation. Small particulate emissions would be controlled with air pollution control equipment and monitored to ensure compliance.



In addition to the continuous monitors, there would be sampling of: ① Stockpiled soil and sediment for PCB and metal content; ② Ash for PCB and metal content; and ③ & ④ Air and Stack Gas for PCB, metals, dioxins, furans, and other contaminants.

PUBLIC COMMENT PERIOD

Your input on the proposed cleanup of the Crab Orchard PCB-contaminated sites is encouraged by U.S. EPA. Comments provided by the public are valuable in helping U.S. EPA select a final remedy for the site.

U.S. EPA began the public comment period for the PCBs Operable Unit on August 18, 1989. **The 105-day public comment period will end on December 1, 1989.** You may send written comments to:

MaryAnn Croce LaFaire
Community Relations Coordinator
Office of Public Affairs
U.S. EPA
230 S. Dearborn Street
Chicago, IL 60604

You may also use the space below to write your comments, then fold the insert and mail it. Comments must be postmarked by December 1, 1989. If you have questions about the comment period, please contact MaryAnn Croce LaFaire at U.S. EPA's toll free number at: 1-800-572-2515.

U.S. EPA held public hearings on August 30 and October 3, 1989 to accept oral comments on the PCBs Operable Unit. Transcripts of these hearings are available at the information repositories listed on the next page.

After the public comment period is concluded, U.S. EPA will review and consider the submitted comments when making its final decision on the site. The final actions chosen for the Crab Orchard site may, therefore, be different than the preferred alternative in the Proposed Plan.

U.S. EPA will respond to all significant comments in a document called a Responsiveness Summary. The Responsiveness Summary will be available to the public as part of the **Record of Decision (ROD)** for the site. You are encouraged to review the Proposed Plan, Feasibility Study, and other documents related to the site, which are available in the site information repositories.

USE THIS SPACE TO WRITE YOUR COMMENTS

Name _____

Address _____

City _____ State _____

Zip _____

MAILING LIST

If you did not receive this fact sheet in the mail, you are not on our mailing list. If you wish to be placed on the Crab Orchard site mailing list, please fill out this form, detach, and mail to:

MaryAnn Croce LaFaire
Office of Public Affairs
U.S. EPA Region 5
230 South Dearborn Street
Chicago, Illinois 60604

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
PHONE _____
AFFILIATION _____

INFORMATION REPOSITORY

Information repositories are notebooks maintained by U.S. EPA in your community. The repositories contain information about the Superfund program and the Crab Orchard National Wildlife Refuge site. The remedial investigation (RI) report, feasibility study (FS) report, all Crab Orchard site fact sheets, and the proposed plans are among the documents available for review in the repository. You are encouraged to consult these documents for more detailed information about the activities described in this fact sheet.

U.S. EPA maintains several repositories for the Crab Orchard site:

Marion Carnegie Public Library
206 South Market Street
Marion, Illinois 62959
Contact: Mr. Ronald Reed
(618) 993-5935

Carbondale Public Library
405 W. Main
Carbondale, Illinois 62901
Contact: Jim Guneter
(618) 457-0354

Crab Orchard National Wildlife Refuge
Refuge Headquarters
P.O. Box J
Carterville, Illinois 62918
Contact: Mr. Glen Smart
(618) 997-3344

**Southern Illinois University
Morris Library**
Carbondale, Illinois 62901
Contact: Reference Librarian
(618) 453-2683

Fold On Dashed Lines, Staple, Stamp, and Mail

MaryAnn Croce LaFaire
Community Relations Coordinator
U.S. Environmental Protection Agency
Region 5
Office of Public Affairs (5PA-14)
230 South Dearborn Street
Chicago, IL 60604

Place
Stamp
Here

Name _____
Address _____
City _____ State _____
Zip _____

Why was incineration selected as the proposed plan?

One key factor in preferring incineration over other alternatives was that by destroying the PCBs the public health and environmental threat would be eliminated to the maximum extent possible. U.S. EPA prefers alternatives that permanently address contamination problems and that use treatment to decrease the toxicity, mobility, or volume of hazardous material present. U.S. EPA's preferred alternative would allow the Refuge to fulfill its mission to the public and wildlife.

Who would be responsible for the safe operation of the mobile incinerator?

U.S. EPA would be responsible for the safe operation of the incinerator. U.S. EPA would ensure that the incinerator selected for the site, and the contractor selected to run it, are able to meet safety and performance standards. To further ensure that the incinerator is operated safely, U.S. EPA would hire an independent contractor which would continuously monitor the operation of the incinerator. Additionally, U.S. EPA and Illinois EPA would periodically inspect the operation and would review all quality control equipment and procedures and all performance, sampling, and other data produced by monitoring the incinerator. Finally, information concerning the incinerator, its operator and operations would be placed in the Crab Orchard information repositories.

How long would the mobile incinerator be present at Crab Orchard?

U.S. EPA estimates that the total cleanup of the PCB-contaminated areas would take between two and a half to five years. The mobile incinerator would actually be burning material for slightly less than one year. The remaining time needed for the cleanup project would be used for developing the incinerator specifications, selecting a contractor, excavating the soil and sediment, bringing the incinerator to the site, a complex series of tests to make sure the incinerator would operate correctly, constructing a landfill for ash, incinerating the material, landfilling ash, and moving the incinerator off-site when the burning is complete.

Would the incinerator be used to burn materials from other sites?

No. While at the Refuge, the incinerator would only accept PCB-contaminated soils and sediments from Crab Orchard. It would be illegal to accept waste from other sites.

How would the Crab Orchard mobile incinerator be different than commercial waste incinerators?

There are several important differences. First, the Crab Orchard mobile incinerator would not be a commercial incinerator. It would be specifically designed for burning the PCB-contaminated soil and sediment at the site. This feature makes it far easier to control the operation and ensure proper burning. Commercial incinerators which burn liquid and/or solid wastes are more likely to improperly or incompletely burn contaminants due to the variety of contaminants being burned or because of inappropriate design for the wastes being burned. Second, the Crab Orchard incinerator would be operated under much more stringent regulations than are most commercial incinerators. The incinerator at Crab Orchard would be designed and operated under both the Toxic Substances Control Act and the Resource Conservation and Recovery Act. Finally, many commercial incinerators now in operation use older technology which may not include present state-of-the-art levels of air pollution control, automatic shut off devices, and/or monitoring equipment.

Why can't the PCB-contaminated soil and sediment be sent to an existing incinerator?

The major reason that an on-site mobile incinerator is proposed is because existing commercial incinerators don't have the available capacity to handle 30,000 cubic yards of contaminated soil. They are booked solid and so the Crab Orchard material would have to be stock piled for quite awhile before it could be transported off site for incineration. Furthermore, transporting the material would pose potential health risks to residents in communities along the route.

Why can't U.S. EPA store the PCB-contaminated soil and sediment until a new technology is available?

Congress requires a cleanup remedy be selected when U.S. EPA identifies a contamination problem which potentially threatens public health or the environment. The Agency is mandated to select among available technologies and it must provide effective long-term remedies. Legally, U.S. EPA cannot wait until a better technology emerges. It may be many years before a preferable alternative technology is developed and proven to be as effective as existing technology. Even then, there is no guarantee that the resources would be available to use the new technology at Crab Orchard.

Why wait until after the public comment period before selecting the type of incineration and its operator, identifying the location of the landfill, and determining the other aspects of the cleanup plan?

U.S. EPA waits until after the comment period in order to get feedback from the public on the proposed cleanup plan. Public comments help U.S. EPA select a final remedy for the site. Since the final remedy may be different from the proposed cleanup plan, time and money could be wasted in developing proposals which may never be used. Development of blueprints, workplans and technical studies typically require years of work and hundreds of thousands of dollars.

Before announcing a proposed cleanup plan, U.S. EPA thoroughly investigates available cleanup technologies and from those selects a preferred cleanup proposal which is technically feasible, has a proven track record, and is suitable for the types of contaminants and the site conditions. Moreover, the preferred alternative is evaluated to determine if it will comply with environmental laws and regulations, provide long-term protection, effectively address the contamination problem, and reduce, eliminate, or control any health and

environmental risks. Of the available cleanup alternatives, U.S. EPA's preferred plan to incinerate the PCB-contaminated soil and sediment best meets the objectives and requirements of the Superfund law.

Public input does not stop after the comment period. All design plans and specifications will be available for review and input.

What are the standards for construction and location of the landfill which would contain the ash produced by the incinerator?

U.S. EPA and Illinois EPA have established stringent regulations for landfill siting, design, construction, and operations and maintenance. The landfill proposed for Crab Orchard must meet or exceed these regulations. The site selected for the landfill would be dependant on the depth of the ground water, characteristics of the soil, and the location of wetlands and surface water bodies. Landfills must contain at least one liner, a leachate collection system, and a cap designed to prevent infiltration of water into the waste. Based on the characteristics of the ash, additional control measures may be included. The landfill would be regularly monitored and maintained.

U.S. EPA OFFICIALS

If you would like to speak to a U.S. EPA official about this fact sheet or anything related to the Crab Orchard site, please contact:

MaryAnn Croce LaFaire
Community Relations
Coordinator
Office of Public Affairs
(312) 886-1728

Mary Logan
Remedial Project
Manager
Office of Superfund
(312) 353-9288

U.S. EPA
Region 5
230 South Dearborn
Chicago, Illinois 60604
Toll Free: (800) 572-2515
9 a.m. to 4 p.m.

U.S. EPA
Region 5
Office of Public Affairs (5PA-14)
230 South Dearborn
Chicago, Illinois 60604



Printed on Recycled Paper