



EPA Answers Questions Most Often Asked by Residents

Lindsay Light II/RV3 North Columbus Drive Site

Chicago, Illinois

May 2000

INTRODUCTION

The purpose of this fact sheet is to provide community residents and other interested individuals with responses to questions frequently asked about the Lindsay Light II /RV3 North Columbus Drive Site cleanup.

What is Thorium?

Thorium is a metallic element. It is part of the Thorium Decay Series, which is a series of radioactively decaying elements. Both thorium and the Thorium Decay Series are found naturally.

Where did the Thorium come from?

Thorium used on this site probably came from India, Brazil, South Africa, Florida, the Carolinas and Idaho in an ore called Monazite. Monazite is found in beach and river deposits of minerals that eroded from larger deposits and washed downstream. These were mined, shipped to Chicago, and chemically purified to obtain the thorium and other elements necessary to produce gas mantles. Unused ore and chemical wastes are the site contaminants.

How was the radiation at the site discovered?

U.S. EPA had removed thorium contaminated soil from an adjacent property over several past years. When the ground was broken on the North Columbus property, U.S. EPA obtained access on the potential that it might also contain thorium contaminants. Surveys showed there was also contamination on this property.

How did U.S. EPA get involved?

U.S. EPA used its authority under the Comprehensive Environmental Response, and Compensation, Liability Act (CERCLA). CERCLA, also known as "Superfund," is a law designed to

help cleanup abandoned waste facilities. Under CERCLA, potentially responsible parties include the owner and operator of a facility, any person who at the time of the disposal owned or operated the facility. In 1996, U.S. EPA ordered companies to conduct the cleanup activities at 316 East Illinois. In March 2000, U.S. EPA amended the Order to include the North Columbus Drive site and the owner of that property.

What is U.S. EPA's cleanup level and how was it determined?

U.S. EPA relied upon a soil radium standard for uranium and thorium sites found in Part 40, Title 192 of the Code of Federal Regulations (40 CFR 192). This standard is 5 picocuries per gram (pCi/g) of total radium (radium-226 plus radium-228) over background in each 6-inch layer below ground. 5 pCi/g is 11 radioactive decays per minute per gram of soil. The background total radium level near North Columbus Drive is 2.1 pCi/g. Therefore, the clean-up level for this site is 5 + 2.1 or 7.1 pCi/g.

What is involved in the cleanup?

Contaminated soils are first located using hand-held gamma-ray detectors. These sites are excavated with construction equipment until the gamma ray detectors indicate the cleanup criterion had been met. Soil samples are taken to confirm this. U.S. EPA is then called to perform a verification survey, which includes independently performing a gamma ray survey and taking soil samples. Each 100 square meter (about 120 square yard) area must meet the cleanup criterion of 5 pCi/g of total radium (radium-226 plus radium-228) over background (altogether 7.1 pCi/g). If the cleanup criterion is met, the area is released for unrestricted use. If the cleanup criterion is not met, excavation continues until the criterion is met.

What is the nature and extent of contamination?

The primary contaminant is believed to be radioactive thorium, but uranium and radium have also been measured in these soils. All of these are believed to have been present in Monazite ore processed for thorium.

The original survey showed contamination in an area about 125 feet by 125 feet in southwest part of the site and contamination in scattered pockets throughout the rest of the site. Excavations in the eastern and southern parts of the site have shown more contamination, which is now known to extend under the sidewalks on Columbus Drive, Illinois Street, and Grand Avenue.

What is being done to remedy the situation?

Contaminated soils are being excavated, put in metal boxes on flatbed semis and shipped via railroad to the licensed disposal site in Utah. The developer and potentially responsible parties are cooperating with U.S. EPA in surveying the site, providing health and safety surveillance, and disposing of the contaminated soils.

Is the contamination contained?

Contaminated soils on site are being removed. Materials have been found at the perimeter of the site, and under sidewalks. These will be handled under surveillance agreements and removed when sidewalks, streets or utilities must be worked on. So long as they remain covered by concrete and asphalt they do not present a health and safety concern. U.S. EPA hopes to survey perimeter properties in the near future.

Some contaminated material was sent to an offsite landfill. U.S. EPA will require a site survey to determine the extent of contamination and will require a remediation plan.

The City of Chicago has agreed to restrict access to anyone exposing or working in the soils covered by the sidewalks and streets. The City will give U.S. EPA notice of anyone proposing to work there and require anyone who must expose or work in the soils beneath the sidewalks and street to implement a health and safety plan, conduct radiation surveillance and dispose of any excavated contaminated materials.

How long do you estimate it will take to complete the remediation?

The remediation program will continue as long as necessary to remove the contamination. Originally, this was projected to take eight weeks, starting from early April. Potentially, the project may take longer, therefore, an exact estimated time frame can not given at this time.

What is the probability that adjacent lots are also contaminated?

U.S. EPA knows that there is contamination under some adjacent streets and in one nearby building. A surveillance project is contemplated for other perimeter properties to determine if additional contamination is present beyond the known sites.

What are the potential health risks to the environment?

U.S. EPA has required a health and safety plan that should allow site cleanup to proceed without danger to site workers, the general public and the environment. Potential health risks include exposure to gamma rays, inhalation of radioactive dusts, ingestion of contaminated soil, skin contamination and spreading of the contaminants beyond where they are now. Controls for these potential risks include maintaining levels As Low As Reasonably Achievable so that doses to workers are minimal and doses to the general public are kept to background levels. There must be no visible dust onsite, air concentrations to workers and at the fence of the property must be kept below regulatory levels, workers onsite must not pick up contaminated soil on their skin or clothes, and vehicles or equipment leaving the site must not contain radioactivity above regulatory levels. Other measures to control dust include the "watering down" of the site during working hours.

What, if any, are the human health hazards?

The contaminants of concern are radioactive and can raise the risk of cancer in specific organs and can raise the risk for the body as a whole. This

may occur by exposure of the body to gamma rays, by ingestion and inhalation of radioactive materials, and by skin exposure to contaminants. Since radiation exposure is a statistical risk there will not be a certainty of cancer from exposure and there will be no immediate, observable reactions.

Is there a danger to the water supply (ground and surface)?

Groundwater under the site is not used for drinking. Additionally, the thorium materials are very insoluble and past measurements have not shown groundwater contamination. To be prudent, U.S. EPA plans additional groundwater measurements on this site. No water, whether surface water or ground water, will be allowed to leave the site without meeting release standards.

Is there the threat of runoff?

U.S. EPA's oversight has not shown runoff to be an issue. If runoff was evident, U.S. EPA would require that it be contained and dealt with in a safe and healthful way.

If I walk by the site will I be in danger.

Using radiation meters, it has been determined, that gamma rays on the surrounding sidewalks are at background levels. Required air monitoring has shown that concentrations are well below regulatory levels for the general public. Fences assure that a person passing by does not get close enough to the contaminants to ingest them or get them on their skin. U.S. EPA feels that the public is well protected, but would take corrective measures, if perimeter conditions showed significant changes.

WEB SITES

This and additional updates can be found at the following web sites:

www.epa.gov/region5/sites/

Scroll down through the list to find the Lindsay Light II/RV3 North Columbus Drive site.

FOR ADDITIONAL INFORMATION

If you have questions about the information in this fact sheet or would like additional information about the Lindsay Light Sites, please contact the individuals listed below:

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24-hour response number (312) 353-2318

Lindsay Light site-related information is available at the following location:

Harold Washington Public Library
400 South State
Chicago, Illinois

Monday: 9:00 a.m. to 7:00 p.m.
Tues. and Thurs.: 11:00 a.m. to 7:00 p.m.
Wed., Fri., and Sat.: 9:00 a.m. to 5:00 p.m.
Sunday: 1:00 p.m. to 5:00 p.m.