Public Health Assessment

Final Release

INTERSTATE POLLUTION CONTROL
ROCKFORD, WINNEBAGO COUNTY, ILLINOIS

EPA FACILITY ID: ILT180011975

Prepared by the
Illinois Department of Public Health

JUNE 10, 2009

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

THE ATSDR PUBLIC HEALTH ASSESSMENT: A NOTE OF EXPLANATION

This Public Health Assessment was prepared by ATSDR's Cooperative Agreement Partner pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) section 104 (i)(6) (42 U.S.C. 9604 (i)(6)), and in accordance with our implementing regulations (42 C.F.R. Part 90). In preparing this document, ATSDR's Cooperative Agreement Partner has collected relevant health data, environmental data, and community health concerns from the Environmental Protection Agency (EPA), state and local health and environmental agencies, the community, and potentially responsible parties, where appropriate.

In addition, this document has previously been provided to EPA and the affected states in an initial release, as required by CERCLA section 104 (i)(6)(H) for their information and review. The revised document was released for a 30-day public comment period. Subsequent to the public comment period, ATSDR's Cooperative Agreement Partner addressed all public comments and revised or appended the document as appropriate. The public health assessment has now been reissued. This concludes the public health assessment process for this site, unless additional information is obtained by ATSDR's Cooperative Agreement Partner which, in the agency's opinion, indicates a need to revise or append the conclusions previously issued.

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TABLE OF CONTENTS

Summary

The Interstate Pollution Control (IPC) site is an abandoned hazardous waste storage facility that occupies about 2.8 acres within a heavily industrialized area of Rockford, Winnebago County, Illinois. IPC operated from 1971 to 1982 and handled hazardous wastes from many local industries. Activities at IPC included the storage of waste oils, solvents, paint sludge, and cyanide-containing plating waste. An incinerator at the site was capable of burning 3,500 gallons of waste materials per week.

The site was placed on the National Priorities List (NPL) in March 1989. Since that time, evaluation and cleanup of the site has occurred. Presently, no current completed exposure pathway is known to exist. The site cleanup and establishment of clean fill and cover over the site eliminated potential exposures to trespassers. The cleanup also served to reduce any migration of contaminants off the site via surface water runoff. No one uses groundwater for drinking purposes in this area.

No health outcome data have been generated for this site because of the very small population surrounding the site. Larger study populations are required to provide significant health outcome statistics. According to other state and local agencies, no community health concerns have been mentioned by area residents.

The Illinois Department of Public Health (IDPH) concludes that the site poses no public health hazard. Currently, no one is being exposed to chemicals at levels that would be expected to cause adverse health effects.

IDPH recommends that the Illinois Environmental Protection Agency and the U. S. Environmental Protection Agency continue to monitor the natural breakdown of contaminants remaining in groundwater at and near the site.

Purpose

The Winnebago County Health Department (WCHD) and the Agency for Toxic Substances and Disease Registry (ATSDR) requested that the Illinois Department of Public Health (IDPH) complete a public health assessment for the Interstate Pollution Control (IPC) site in Rockford, Illinois that provides a current assessment of the site. In May 1990, ATSDR issued a draft preliminary public health assessment prepared by IDPH that concluded the site posed a potential public health hazard due to groundwater contamination [1]. Although IDPH, WCHD, and regulatory agencies have been active at the site since that time, no final public health assessment was issued for this National Priorities List (NPL) site. The purpose of this public health assessment is to update the status of the site and to evaluate any public health hazards related to the site based on information currently available.

Background and Statement of Issues

Site Location

The IPC site (a.k.a. Rockford Roto Rooter site) is an abandoned hazardous waste storage facility that occupies about 2.8 acres within a heavily industrialized area of Rockford, Winnebago County, Illinois. The site is irregularly shaped (Attachment 1) and is bordered on the east by Seminary-Magnolia Street and on the south by Quaker Road-Peoples Avenue. Railroad tracks border the site on the south and west. The Rock River is about 0.3 miles west of the site and groundwater flow at and near the site is to the south-southwest toward the river.

Directly south of Quaker Road-Peoples Avenue and IPC is the Peoples Avenue Landfill, an old rock quarry used as a landfill by the city of Rockford from 1947 to 1972. The nearest home is about 650 feet north of the site. All area residents use Rockford public water, which is unaffected by the site.

Site History

The area surrounding the site has been heavily industrialized since the early twentieth century. According to the U.S. Environmental Protection Agency (USEPA), a 1918 map indicates a quarry existed beneath much of the IPC site, but this area was filled by 1943 [1].

IPC operated from 1971 to 1982 and handled hazardous wastes from many local industries. Activities at IPC included the storage of waste oils, solvents, paint sludge, and cyanide-containing plating waste. An incinerator at the site was capable of burning 3,500 gallons of waste materials per week. The Illinois Environmental Protection Agency (Illinois EPA) records suggest a history of poor operating practices. The incinerator was removed in the late 1970s. In 1979, IPC removed drums and some contaminated soil from the facility and transported this material to a USEPA-regulated disposal facility [2].

In 1982, Illinois EPA inspected the facility and estimated that about 5,000 cubic yards of waste sludge was contained within an unlined lagoon on the site. Sludge samples from the lagoon

showed the presence of hydrocarbons, chlorinated solvents, and polychlorinated biphenyls (PCBs). A storage tank on the site was leaking waste containing cyanide, cadmium, chromium, and lead [1].

In 1983, Illinois EPA began a groundwater investigation of the site and the surrounding area and learned that the groundwater is primarily contaminated with various chlorinated solvents. No private water wells have been found in the area of contamination or in the potential path of contamination [1].

The IPC site was proposed to the NPL in June 1988 and was listed on the NPL in March 1989 [3]. Further site characterization determined that on-site soil was contaminated with volatile organic chemicals (VOCs), semi-volatile organic chemicals (SVOCs), pesticides, PCBs, metals, and cyanide [4]. On-site groundwater was contaminated with VOCs, SVOCs, metals, and cyanide [4].

In 1991, an agreement was reached between the responsible parties, Illinois EPA, and the Illinois Attorney General to undertake a remedial investigation and feasibility study (RI/FS) of the site. In 1992, the site was fenced and more than 1,400 tons of solid and hazardous waste were removed [3]. All aboveground structures and tanks were demolished and underground tanks were removed. Following these removal actions, a clay cover was installed over much of the site. The RI/FS final report was submitted in 1997 [5].

A record of decision for the site required the installation of an impermeable barrier over the site and monitored natural attenuation of groundwater contamination at and near the site. USEPA classified the site as “construction complete” in September 2006 [5].

Southeast Rockford Site

The Southeast Rockford Groundwater Contamination (SRGC) site also was added to the NPL in March 1989. Beneath the SRGC site is a large plume of groundwater contaminated with chlorinated VOCs. Groundwater testing first began in 1981, when the Rockford Water Utility discovered low levels of VOCs in four municipal wells. In 1982, additional contamination was discovered and remedied by removing the wells from service. From 1984 through 1989, IDPH sampled private wells throughout the site area and discovered that more than 300 private wells were contaminated. Some wells had total VOC levels exceeding 1,000 micrograms per liter. [6]

In 1994, the site boundary of the SRGC site was expanded to extend to the Rock River and therefore included the IPC site. The IPC site was not considered a part of the SRGC site for investigation or remediation purposes, though both sites had groundwater contaminated with chlorinated solvents. The focus of the SRGC site was contaminated private drinking water wells, which were not affected by the IPC site. [6]

Site Visits

IDPH staff visited the site in December 2001. The site was surrounded with a 5-foot tall chained link fence topped with three strands of barbed wire. No evidence was observed to indicate recent

human access to the site. The site was covered with a dense growth of weeds and small scrub trees. Several used tires, old hoses, scrap metal, metal drums, and plastic tanks were on the site. Several groundwater monitoring wells were observed on and off the site.

The most recent site visit was conducted in December 2007. The site was completely covered with a layer of material that resembles compacted asphalt. The former vegetation on the site was no longer present and all debris and containers seen previously had been removed. The site was fenced and the entry gate locked. Signs posted on the perimeter fence in several locations stated "No Trespassing" and "Warning: Excavation Within Property Boundary is Prohibited." There was no evidence of human activity on the site. Several groundwater monitoring wells remain on the site and protrude above the surface of the asphalt. Other groundwater monitoring wells were observed downgradient of the site.

Demographics

Rockford has a population of more than 150,000 people. From 2000 census data, 73% of Rockford residents are white, 17% are black, and 10% have Hispanic ethnicity.

Natural Resource Use

The Rock River is west of the site, and the river is used for recreation only. Rockford obtains its water from 40 municipal wells throughout the city. Under the Safe Drinking Water Act, the city of Rockford is required to sample the municipal water quarterly and to report those results to Illinois EPA.

Discussion

Previous surface soil sampling data was not evaluated for this public health assessment since contaminated soil has been removed and the surface of the site has been covered with clean fill and a clay cover. The contaminants in the groundwater at and near the site were evaluated.

Chemicals of Interest

IDPH compared the maximum level of each contaminant detected during environmental sampling with appropriate screening comparison values, when available, to select contaminants for further evaluation of both carcinogenic and noncarcinogenic health effects. The groundwater at and near the site is contaminated with several chemicals, including VOCs, SVOCs, metals, and cyanide. The chemicals of interest in groundwater include chloroethane, 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethene, methylene chloride, tetrachloroethene, and trichloroethene (Table 1).

Comparison values are used only to screen for contaminants that should be evaluated further and do not represent thresholds of toxicity. Although some chemicals may exist at levels greater than comparison values, they can only affect a person who comes in contact with them and receives a high enough dose for adverse effects to occur.

Exposure Assessment

An exposure pathway consists of a source of contamination, environmental media and transport mechanisms, a point of exposure, and a receptor population. Exposure to a chemical may have occurred in the past, may be occurring now, or may occur in the future. When all these elements linking the chemical source to an exposed population are known, a completed exposure pathway exists. When one of the elements is missing, a potential exposure pathway can exist if conditions would change.

Presently, no current completed exposure pathway is known to exist. No private water wells have been found in the area of contamination or in the potential path of contamination. No homes are in the path of contamination, so vapor intrusion is not a route of exposure. Since the completion of site cleanup and the establishment of clean fill and cover over the site, potential exposures to trespassers have been eliminated. In the past, before the site was secured, trespassers may have been exposed to on-site surface contamination; however, IDPH has no evidence of this and is not aware of any reports of past adverse health effects.

The cleanup also served to reduce any migration of contaminants off the site via surface water runoff. No one uses groundwater for drinking purposes in this area, and the future use of groundwater beneath the site for domestic purposes is unlikely.

Health Outcome Data

No health outcome data have been generated for this site because of the very small population surrounding the site. Larger study populations are required to provide significant health outcome statistics. In addition, no current exposure to site-related chemicals exists.

Community Health Concerns

IDPH contacted Illinois EPA and WCHD to determine any community health concerns. According to these agencies, no community health concerns have been mentioned by area residents. The site has been fenced for several years and no one in the area of the site uses the area groundwater as a source of drinking water.

A copy of the draft Public Health Assessment for the site was available for public review and comment from February 10, 2009, to March 10, 2009. No public comments were received.

Child Health Considerations

IDPH recognizes that children are especially sensitive to some contaminants. For this reason, IDPH included children when evaluating exposures to contaminants related to the IPC site. Children are the most sensitive population considered in this health assessment. Children are not

currently exposed to site-related contamination. Additionally, site remediation and restricted site access currently prevents children being exposed to any chemical contaminants on the site.

Conclusions

Based on the information reviewed and current site conditions, IDPH concludes that the IPC site poses no public health hazard. Presently, no current completed exposure pathway is known to exist. In the past, before the site was secured, trespassers may have been exposed to on-site surface contamination; however, IDPH has no evidence such exposure actually occurred.

The record of decision for the site required the installation of an impermeable barrier over the site and monitored natural attenuation of groundwater contamination at and near the site.

The site cleanup and establishment of clean fill and cover over the site eliminated potential exposures to trespassers. The cleanup also served to reduce the potential for any migration of contaminants off the site via surface water runoff. Although site-related chemicals have been detected in on-site and off-site groundwater, no one uses groundwater for drinking purposes in this area, and the future use of groundwater beneath the site is unlikely.

Recommendations

IDPH recommends that Illinois EPA and USEPA continue to monitor the natural attenuation of contaminants remaining in groundwater at and near the site.

Public Health Action Plan

IDPH will review any additional data as it is generated to determine any potential health implications.

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1. Golder Associates. Remedial Investigation Report, Interstate Pollution Control, Inc. Site; December 1997.

2. Agency for Toxic Substances and Disease Registry. Draft Preliminary Health Assessment for Interstate Pollution Control Site. Atlanta, GA: US Department of Health and Human Services; May 1990.

3. Illinois Environmental Protection Agency. Superfund Fact Sheet, Interstate Pollution Control Fact Sheet #1. Springfield, IL: Office of Community Relations; February 1993.

4. Illinois Environmental Protection Agency. Baseline Risk Assessment Report, Interstate Pollution Control. Springfield, IL: Bureau of Land, Division of Land Pollution Control; 1995.

5. U.S. Environmental Protection Agency. Superfund Site Progress Profile Interstate Pollution Control, Inc. Available from: URL: http://cfpub.epa.gov/supercpad/cursites/csitinfo.cfm?id=0501164

6. Agency for Toxic Substances and Disease Registry. Public Health Assessment for Southeast Rockford Groundwater Contamination Site. Atlanta, GA: US Department of Health and Human Services; December 31, 2001.

Certification

This Interstate Pollution Control public health assessment was prepared by the Illinois Department of Public Health under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR). It was completed in accordance with approved methodologies and procedures existing at the time the health consultation was initiated. Editorial review was completed by the Cooperative Agreement partner.

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The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.

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Tables

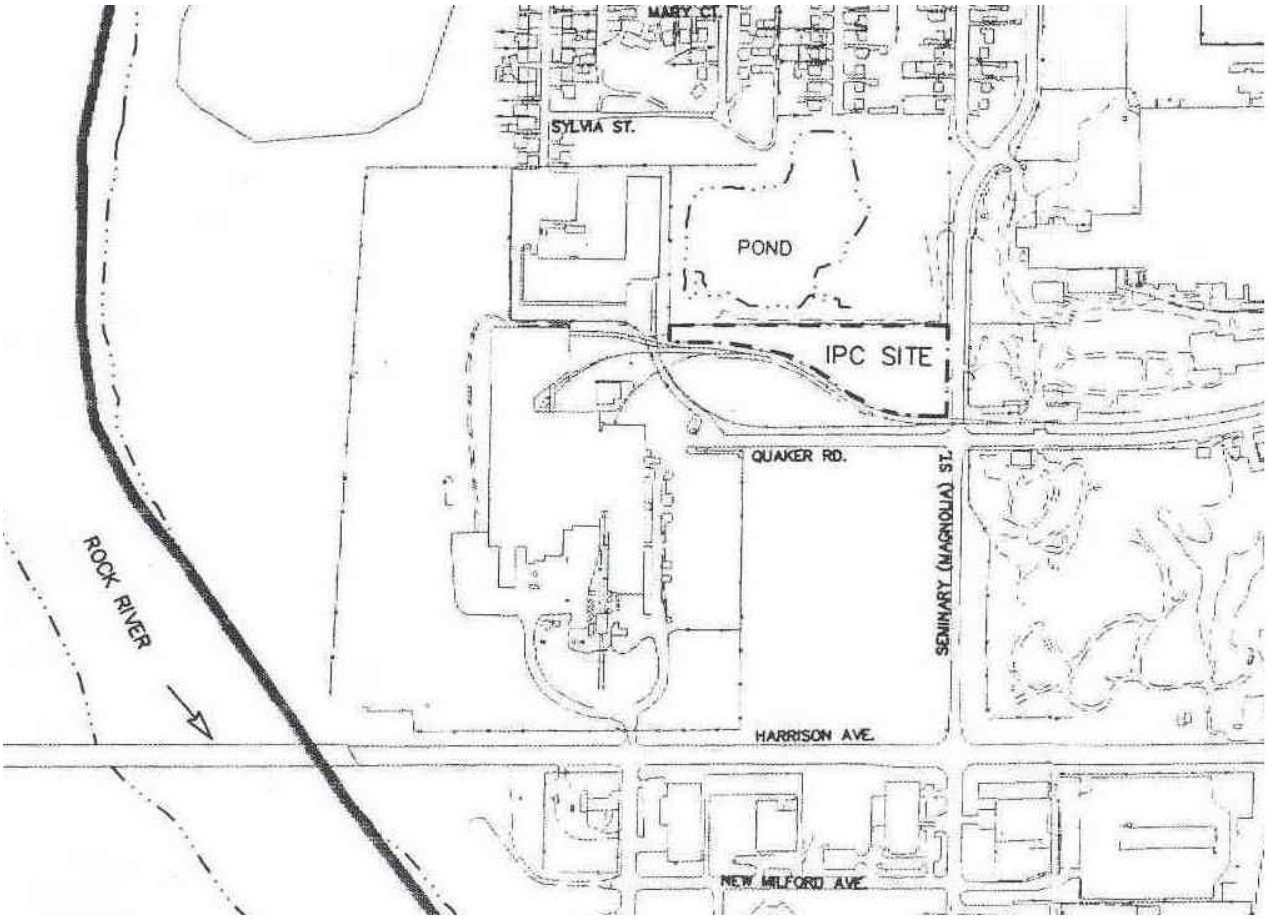
Table 1. Maximum Levels of Chemicals of Interest Detected in Groundwater On and Downgradient of the Interstate Pollution Control Site 1983 to 1997 in parts per billion (ppb). [1]

Contaminant	Maximum Level Detected (ppb)	Comparison Value (ppb)	Source of Comparison Value
Chloroethane	1,300	NA	
1,1-Dichloroethane	1,300	NA	
1,1-Dichloroethene	28	7	MCL
1,2-Dichloroethene (total)	340	70	MCL
Methylene Chloride	18	5	MCL
Tetrachloroethene	17	5	MCL
Trichloroethene	77	5	MCL

ppb – parts per billion
NA – no comparison value available
MCL – maximum contaminant level

Attachments

Attachment 1



Source: Golder Associates

Attachment 2

Comparison Values Used In Screening Contaminants for Further Evaluation

Environmental media evaluation guides (EMEGs) are developed for chemicals on the basis of their toxicity, frequency of occurrence at National Priorities List (NPL) sites, and potential for human exposure. They are derived to protect the most sensitive populations. They are not action levels, but rather comparison values. They do not consider carcinogenic effects, chemical interactions, multiple route exposure, or other media-specific routes of exposure. They are very conservative concentration values, designed to protect sensitive members of the population.

Reference dose media evaluation guides (RMEGs) are another type of comparison value derived to protect the most sensitive populations. They do not consider carcinogenic effects, chemical interactions, multiple route exposure, or other media-specific routes of exposure, and are very conservative concentration values designed to protect sensitive members of the population.

Cancer risk evaluation guides (CREGs) are estimated contaminant concentrations based on a probability of 1 excess cancer in 1 million persons exposed to a chemical over a lifetime. These are also very conservative values designed to protect sensitive members of the population.

Maximum contaminant levels (MCLs) have been established by USEPA for public water supplies to reduce the chances of adverse health effects from contaminated drinking water. These standards are well below levels for which health effects have been observed, and take into account the financial feasibility of achieving specific contaminant levels. MCLs are enforceable limits that public water supplies must meet.

Lifetime health advisories for drinking water (LTHAs) have been established by USEPA for drinking water and are the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects over a lifetime of exposure. These are conservative values that incorporate a margin of safety.

ATSDR Glossary of Terms

The Agency for Toxic Substances and Disease Registry (ATSDR) is a federal public health agency with headquarters in Atlanta, Georgia, and 10 regional offices in the United States. ATSDR's mission is to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances. ATSDR is not a regulatory agency, unlike the U.S. Environmental Protection Agency (EPA), which is the federal agency that develops and enforces environmental laws to protect the environment and human health. This glossary defines words used by ATSDR in communications with the public. It is not a complete dictionary of environmental health terms. If you have questions or comments, call ATSDR's toll-free telephone number, 1-888-42-ATSDR (1-888-422-8737).

Absorption
The process of taking in. For a person or an animal, absorption is the process of a substance getting into the body through the eyes, skin, stomach, intestines, or lungs.

Acute
Occurring over a short time [compare with chronic].

Acute exposure
Contact with a substance that occurs once or for only a short time (up to 14 days) [compare with intermediate duration exposure and chronic exposure].

Adverse health effect
A change in body function or cell structure that might lead to disease or health problems

Ambient
Surrounding (for example, ambient air).

Background level
An average or expected amount of a substance or radioactive material in a specific environment, or typical amounts of substances that occur naturally in an environment.

Biota
Plants and animals in an environment. Some of these plants and animals might be sources of food, clothing, or medicines for people.

Body burden
The total amount of a substance in the body. Some substances build up in the body because they are stored in fat or bone or because they leave the body very slowly.

Cancer
Any one of a group of diseases that occur when cells in the body become abnormal and grow or multiply out of control.

Cancer risk
A theoretical risk for getting cancer if exposed to a substance every day for 70 years (a lifetime exposure). The true risk might be lower.

Carcinogen
A substance that causes cancer.

Central nervous system
The part of the nervous system that consists of the brain and the spinal cord.

CERCLA [see Comprehensive Environmental Response, Compensation, and Liability Act of 1980]

Chronic
Occurring over a long time [compare with acute].

Chronic exposure
Contact with a substance that occurs over a long time (more than 1 year) [compare with acute exposure and intermediate duration exposure]

Cluster investigation
A review of an unusual number, real or perceived, of health events (for example, reports of cancer) grouped together in time and location. Cluster investigations are designed to confirm case reports; determine whether they represent an unusual disease occurrence; and, if possible, explore possible causes and contributing environmental factors.

Comparison value (CV)
Calculated concentration of a substance in air, water, food, or soil that is unlikely to cause harmful (adverse) health effects in exposed people. The CV is used as a screening level during the public health assessment process. Substances found in amounts greater than their CVs might be selected for further evaluation in the public health assessment process.

Completed exposure pathway [see exposure pathway].

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)
CERCLA, also known as Superfund, is the federal law that concerns the removal or cleanup of hazardous substances in the environment and at hazardous waste sites. ATSDR, which was created by CERCLA, is responsible for assessing health issues and supporting public health activities related to hazardous waste sites or other environmental releases of hazardous substances. This law was later amended by the Superfund Amendments and Reauthorization Act (SARA).

Concentration
The amount of a substance present in a certain amount of soil, water, air, food, blood, hair, urine, breath, or any other media.

Contaminant
A substance that is either present in an environment where it does not belong or is present at levels that might cause harmful (adverse) health effects.

Dermal
Referring to the skin. For example, dermal absorption means passing through the skin.

Dermal contact
Contact with (touching) the skin [see route of exposure].

Detection limit
The lowest concentration of a chemical that can reliably be distinguished from a zero concentration.

Disease registry
A system of ongoing registration of all cases of a particular disease or health condition in a defined population.

Dose (for chemicals that are not radioactive)
The amount of a substance to which a person is exposed over some time period. Dose is a measurement of exposure. Dose is often expressed as milligram (amount) per kilogram (a measure of body weight) per day (a measure of time) when people eat or drink contaminated water, food, or soil. In general, the greater the dose, the greater the likelihood of an effect. An "exposure dose" is how much of a substance is encountered in the environment. An "absorbed dose" is the amount of a substance that actually got into the body through the eyes, skin, stomach, intestines, or lungs.

Dose (for radioactive chemicals)
The radiation dose is the amount of energy from radiation that is actually absorbed by the body. This is not the same as measurements of the amount of radiation in the environment.

Dose-response relationship
The relationship between the amount of exposure [dose] to a substance and the resulting changes in body function or health (response).

Environmental media
Soil, water, air, biota (plants and animals), or any other parts of the environment that can contain contaminants.

Environmental media and transport mechanism
Environmental media include water, air, soil, and biota (plants and animals). Transport mechanisms move contaminants from the source to points where human exposure can occur. The environmental media and transport mechanism is the second part of an exposure pathway.

Epidemiology
The study of the distribution and determinants of disease or health status in a population; the study of the occurrence and causes of health effects in humans.

Exposure
Contact with a substance by swallowing, breathing, or touching the skin or eyes. Exposure may be short-term [acute exposure], of intermediate duration, or long-term [chronic exposure].

Exposure assessment
The process of finding out how people come into contact with a hazardous substance, how often and for how long they are in contact with the substance, and how much of the substance they are in contact with.

Exposure investigation
The collection and analysis of site-specific information and biologic tests (when appropriate) to determine whether people have been exposed to hazardous substances.

Exposure pathway
The route a substance takes from its source (where it began) to its end point (where it ends), and how people can come into contact with (or get exposed to) it. An exposure pathway has five parts: a source of contamination (such as an abandoned business); an environmental media and transport mechanism (such as movement through groundwater); a point of exposure (such as a private well); a route of exposure (eating, drinking, breathing, or touching), and a receptor population (people potentially or actually exposed). When all five parts are present, the exposure pathway is termed a completed exposure pathway.

Feasibility study
A study by EPA to determine the best way to clean up environmental contamination. A number of factors are considered, including health risk, costs, and what methods will work well.

Geographic information system (GIS)
A mapping system that uses computers to collect, store, manipulate, analyze, and display data. For example, GIS can show the concentration of a contaminant within a community in relation to points of reference such as streets and homes.

Groundwater
Water beneath the earth's surface in the spaces between soil particles and between rock surfaces [compare with surface water].

Half-life ($t_{½}$)
The time it takes for half the original amount of a substance to disappear. In the environment, the half-life is the time it takes for half the original amount of a substance to disappear when it is changed to another chemical by bacteria, fungi, sunlight, or other chemical processes. In the human body, the half-life is the time it takes for half the original amount of the substance to disappear, either by being changed to another substance or by leaving the body. In the case of

radioactive material, the half life is the amount of time necessary for one half the initial number of radioactive atoms to change or transform into another atom (that is normally not radioactive). After two half lives, 25% of the original number of radioactive atoms remain.

Hazard
A source of potential harm from past, current, or future exposures.

Hazardous waste
Potentially harmful substances that have been released or discarded into the environment.

Health consultation
A review of available information or collection of new data to respond to a specific health question or request for information about a potential environmental hazard. Health consultations are focused on a specific exposure issue. Health consultations are therefore more limited than a public health assessment, which reviews the exposure potential of each pathway and chemical [compare with public health assessment].

Health education
Programs designed with a community to help it know about health risks and how to reduce these risks.

Health investigation
The collection and evaluation of information about the health of community residents. This information is used to describe or count the occurrence of a disease, symptom, or clinical measure and to evaluate the possible association between the occurrence and exposure to hazardous substances.

Health statistics review
The analysis of existing health information (i.e., from death certificates, birth defects registries, and cancer registries) to determine if there is excess disease in a specific population, geographic area, and time period. A health statistics review is a descriptive epidemiologic study.

Indeterminate public health hazard
The category used in ATSDR's public health assessment documents when a professional judgment about the level of health hazard cannot be made because information critical to such a decision is lacking.

Incidence
The number of new cases of disease in a defined population over a specific time period [contrast with prevalence].

Ingestion
The act of swallowing something through eating, drinking, or mouthing objects. A hazardous substance can enter the body this way [see route of exposure].

Inhalation
The act of breathing. A hazardous substance can enter the body this way [see route of exposure].

Intermediate duration exposure
Contact with a substance that occurs for more than 14 days and less than a year [compare with acute exposure and chronic exposure].

Lowest-observed-adverse-effect level (LOAEL)
The lowest tested dose of a substance that has been reported to cause harmful (adverse) health effects in people or animals.

Medical monitoring
A set of medical tests and physical exams specifically designed to evaluate whether an individual's exposure could negatively affect that person's health.

Metabolism
The conversion or breakdown of a substance from one form to another by a living organism.

Metabolite
Any product of metabolism.

mg/kg
Milligram per kilogram.

mg/cm2
Milligram per square centimeter (of a surface).

mg/m3
Milligram per cubic meter; a measure of the concentration of a chemical in a known volume (a cubic meter) of air, soil, or water.

Migration
Moving from one location to another.

Minimal risk level (MRL)
An ATSDR estimate of daily human exposure to a hazardous substance at or below which that substance is unlikely to pose a measurable risk of harmful (adverse), noncancerous effects. MRLs are calculated for a route of exposure (inhalation or oral) over a specified time period (acute, intermediate, or chronic). MRLs should not be used as predictors of harmful (adverse) health effects [see reference dose].

National Priorities List (NPL)
EPA's list of the most serious uncontrolled or abandoned hazardous waste sites in the United States. The NPL is updated on a regular basis.

No apparent public health hazard

A category used in ATSDR's public health assessments for sites where human exposure to contaminated media might be occurring, might have occurred in the past, or might occur in the future, but where the exposure is not expected to cause any harmful health effects.

No-observed-adverse-effect level (NOAEL)
The highest tested dose of a substance that has been reported to have no harmful (adverse) health effects on people or animals.

No public health hazard
A category used in ATSDR's public health assessment documents for sites where people have never and will never come into contact with harmful amounts of site-related substances.

NPL [see National Priorities List]

Pica
A craving to eat nonfood items, such as dirt, paint chips, and clay. Some children exhibit pica-related behavior.

Plume
A volume of a substance that moves from its source to places farther away from the source. Plumes can be described by the volume of air or water they occupy and the direction they move. For example, a plume can be a column of smoke from a chimney or a substance moving with groundwater.

Point of exposure
The place where someone can come into contact with a substance present in the environment [see exposure pathway].

Population
A group or number of people living within a specified area or sharing similar characteristics (such as occupation or age).

Potentially responsible party (PRP)
A company, government, or person legally responsible for cleaning up the pollution at a hazardous waste site under Superfund. There may be more than one PRP for a particular site.

ppb
Parts per billion.

ppm
Parts per million.

Prevalence
The number of existing disease cases in a defined population during a specific time period [contrast with incidence].

Prevention
Actions that reduce exposure or other risks, keep people from getting sick, or keep disease from getting worse.

Public availability session
An informal, drop-by meeting at which community members can meet one-on-one with ATSDR staff members to discuss health and site-related concerns.

Public comment period
An opportunity for the public to comment on agency findings or proposed activities contained in draft reports or documents. The public comment period is a limited time period during which comments will be accepted.

Public health action
A list of steps to protect public health.

Public health advisory
A statement made by ATSDR to EPA or a state regulatory agency that a release of hazardous substances poses an immediate threat to human health. The advisory includes recommended measures to reduce exposure and reduce the threat to human health.

Public health assessment (PHA)
An ATSDR document that examines hazardous substances, health outcomes, and community concerns at a hazardous waste site to determine whether people could be harmed from coming into contact with those substances. The PHA also lists actions that need to be taken to protect public health [compare with health consultation].

Public health hazard
A category used in ATSDR's public health assessments for sites that pose a public health hazard because of long-term exposures (greater than 1 year) to sufficiently high levels of hazardous substances or radionuclides that could result in harmful health effects.

Public health hazard categories
Public health hazard categories are statements about whether people could be harmed by conditions present at the site in the past, present, or future. One or more hazard categories might be appropriate for each site. The five public health hazard categories are no public health hazard, no apparent public health hazard, indeterminate public health hazard, public health hazard, and urgent public health hazard.

Public meeting
A public forum with community members for communication about a site.

Radioisotope
An unstable or radioactive isotope (form) of an element that can change into another element by giving off radiation.

Radionuclide
Any radioactive isotope (form) of any element.

RCRA [see Resource Conservation and Recovery Act (1976, 1984)]

Receptor population
People who could come into contact with hazardous substances [see exposure pathway].

Reference dose (RfD)
An EPA estimate, with uncertainty or safety factors built in, of the daily lifetime dose of a substance that is unlikely to cause harm in humans.

Remedial investigation
The CERCLA process of determining the type and extent of hazardous material contamination at a site.

Resource Conservation and Recovery Act (1976, 1984) (RCRA)
This Act regulates management and disposal of hazardous wastes currently generated, treated, stored, disposed of, or distributed.

RfD [see reference dose]

Risk
The probability that something will cause injury or harm.

Risk reduction
Actions that can decrease the likelihood that individuals, groups, or communities will experience disease or other health conditions.

Risk communication
The exchange of information to increase understanding of health risks.

Route of exposure
The way people come into contact with a hazardous substance. Three routes of exposure are breathing [inhalation], eating or drinking [ingestion], or contact with the skin [dermal contact].

Safety factor [see uncertainty factor]

Sample
A portion or piece of a whole. A selected subset of a population or subset of whatever is being studied. For example, in a study of people the sample is a number of people chosen from a larger population [see population]. An environmental sample (for example, a small amount of soil or water) might be collected to measure contamination in the environment at a specific location.

Sample size
The number of units chosen from a population or an environment.

Solvent
A liquid capable of dissolving or dispersing another substance (for example, acetone or mineral spirits).

Source of contamination
The place where a hazardous substance comes from, such as a landfill, waste pond, incinerator, storage tank, or drum. A source of contamination is the first part of an exposure pathway.

Substance
A chemical.

Superfund [see Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and Superfund Amendments and Reauthorization Act (SARA)

Surface water
Water on the surface of the earth, such as in lakes, rivers, streams, ponds, and springs [compare with groundwater].

Survey
A systematic collection of information or data. A survey can be conducted to collect information from a group of people or from the environment. Surveys of a group of people can be conducted by telephone, by mail, or in person. Some surveys are done by interviewing a group of people [see prevalence survey].

Toxicological profile
An ATSDR document that examines, summarizes, and interprets information about a hazardous substance to determine harmful levels of exposure and associated health effects. A toxicological profile also identifies significant gaps in knowledge on the substance and describes areas where further research is needed.

Toxicology
The study of the harmful effects of substances on humans or animals.

Tumor
An abnormal mass of tissue that results from excessive cell division that is uncontrolled and progressive. Tumors perform no useful body function. Tumors can be either benign (not cancer) or malignant (cancer).

Uncertainty factor
Mathematical adjustments for reasons of safety when knowledge is incomplete. For example, factors used in the calculation of doses that are not harmful (adverse) to people. These factors are applied to the lowest-observed-adverse-effect-level (LOAEL) or the no-observed-adverse-effect-level (NOAEL) to derive a minimal risk level (MRL). Uncertainty factors are used to account for variations in people's sensitivity, for differences between animals and humans, and for differences between a LOAEL and a NOAEL. Scientists use uncertainty factors when they have

some, but not all, the information from animal or human studies to decide whether an exposure will cause harm to people [also sometimes called a safety factor].

Urgent public health hazard
A category used in ATSDR's public health assessments for sites where short-term exposures (less than 1 year) to hazardous substances or conditions could result in harmful health effects that require rapid intervention.

Volatile organic compounds (VOCs)
Organic compounds that evaporate readily into the air. VOCs include substances such as benzene, toluene, methylene chloride, and methyl chloroform.

Other glossaries and dictionaries:
Environmental Protection Agency (http://www.epa.gov/OCEPAterms/)

National Center for Environmental Health (CDC)
(http://www.cdc.gov/nceh/dls/report/glossary.htm)

National Library of Medicine (NIH)
(http://www.nlm.nih.gov/medlineplus/mplusdictionary.html)

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