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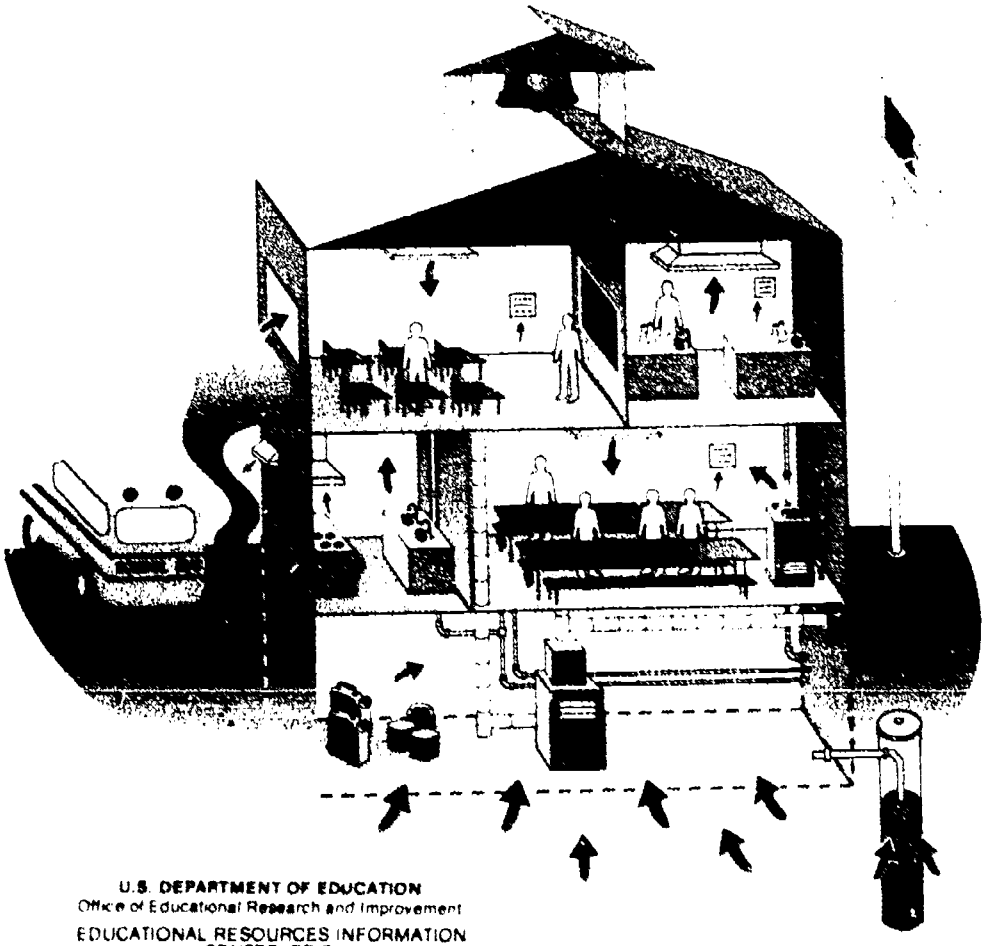
ABSTRACT

Prepared by the Environmental Protection Agency (EPA), this document provides information on many environmental hazards young children may be exposed to today in school buildings. Topics discussed include: (1) the definition, location, and health hazards of asbestos as well as responsible management practices, current legal requirements, and federal assistance related to assessing and managing asbestos in schools; (2) background information and causes of poor indoor air quality as well as related federal legislation and strategies for controlling the quality of indoor air; (3) the prevalence and health hazards of radon as well as measures being taken to address the problem and assistance available to schools; (4) some origins and health hazards of lead in drinking water, related federal actions such as the Lead Contamination Control Act of 1988, a three-step program to identify and remedy lead contamination in the school, remedial options, and control measures; and (5) recommendations for monitoring school-operated water systems and information on obtaining water sample analyses. A comprehensive list of state contacts is also provided, and information on other environmental concerns that may be apparent in schools such as underground storage tanks, recycling efforts, pesticides, and polychlorinated biphenyl is included. (CLA)



# *ENVIRONMENTAL HAZARDS IN YOUR SCHOOL A RESOURCE HANDBOOK*

The following Environmental Protection Agency Program Offices contributed to the development of this booklet:

Office of Atmospheric and Indoor Air Programs
Office of Drinking Water
Office of Pesticide Programs
Office of Radiation Programs
Office of Solid Waste
Office of Toxic Substances
Office of Underground Storage Tanks

The following Organizations have participated in the development of this booklet:

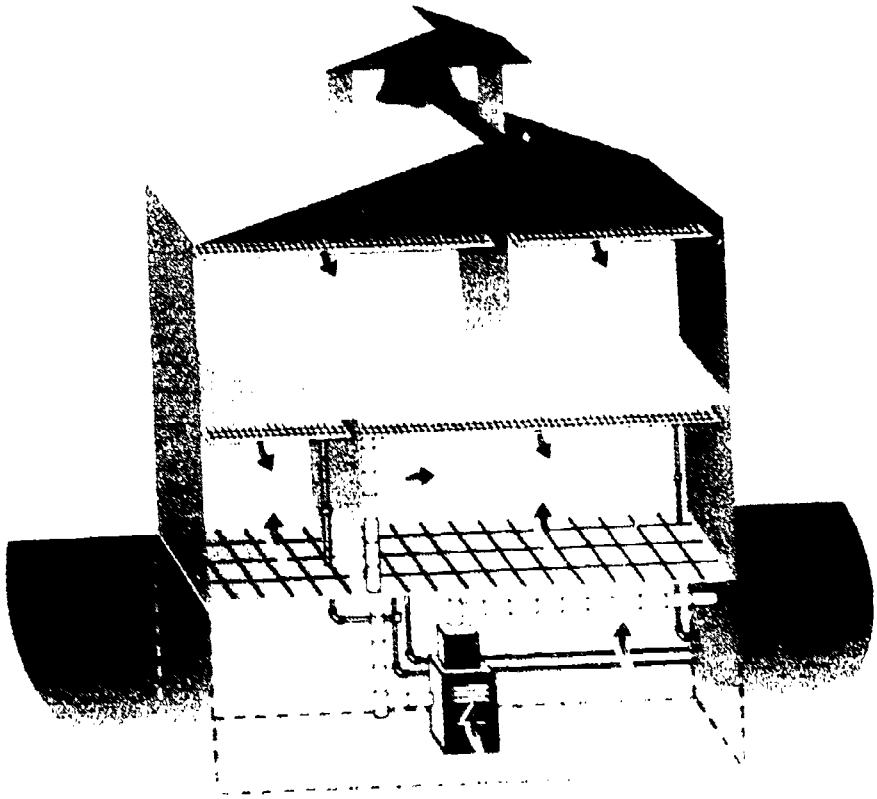
The National Education Association
The National Parent Teacher Association
The Council for American Private Education
The Occupational Health Foundation
The National Association of Independent Schools
The U.S. Catholic Conference

## CONTENTS

## *INTRODUCTION*

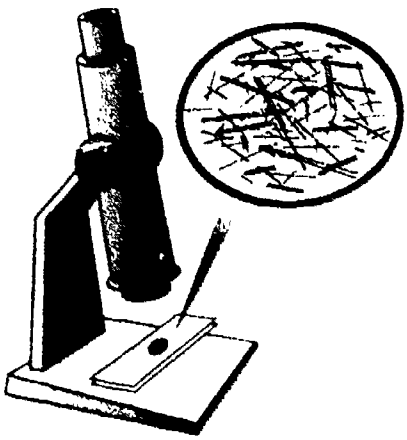
Environmental hazards in our nation's schools are increasingly becoming a concern. The United States Environmental Protection Agency (EPA) has prepared this resource booklet to provide information on a number of the environmental hazards children may be exposed to today in school buildings. The specific environmental hazards discussed in-depth in this booklet are Asbestos, Indoor Air Quality, Radon, Lead in Drinking Water, and other contaminants in School-Operated Water Systems. A comprehensive list of contacts is also provided. We have also provided additional information on some other environmental concerns that may be apparent in schools such as underground storage tanks, recycling efforts, pesticides, and polychlorinated biphenyls. These concerns are briefly discussed in a separate chapter included in this booklet.

# ASBESTOS



# *THE CONCERN: WHAT, WHERE, AND WHY?*

## *WHAT EXACTLY IS ASBESTOS?*



Asbestos is a mineral found in certain types of rock formation. When mined and processed, it takes the form of small fibers which are usually invisible to the naked eye. These individual fibers are generally mixed with a material which binds them together for use in several different products. Because the fibers are so small and light, they can remain in the air for many hours if they are released from asbestos-containing material; this increases danger of inhalation.

Asbestos became a popular product throughout industry because of its unusual combination of qualities--it is strong, it will not burn, it resists corrosion, and it insulates well. The peak years of asbestos use in schools began during World War II and continued until the 1970s, when several major kinds of asbestos materials were banned due to growing concern about related health effects. Use of asbestos in manufacturing and processing has continued to decline throughout the 1980s. Ultimately, asbestos use in the United States will dwindle even further, as EPA's Asbestos Ban and Phaseout regulation issued in July, 1989, requires the phaseout of almost all uses of asbestos by 1997.

## *WHERE IS ASBESTOS FOUND?*

EPA estimates that there are asbestos-containing materials in most of the nation's approximately 107,000 primary and secondary schools. Asbestos is most commonly used in schools as insulation and in building materials. It has also been found in floor and ceiling tile, cement pipe, corrugated-paper pipe wrap, acoustical and decorative insulation, pipe and boiler insulation, and spray-applied

fireproofing. The fluffy white substance you may find above a dropped ceiling, for example, is one type of spray-applied material.

The amount of asbestos in these products varies widely, from 1 to 100 percent, depending on the use. The precise amount of asbestos in a product cannot always be determined from labels. Most products used in the past were not labelled. Therefore, positive identification of asbestos requires analysis of samples by a qualified laboratory.

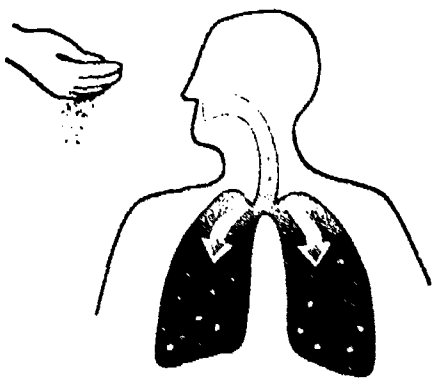
## *WHY IS ASBESTOS A PROBLEM?*

Asbestos fibers can cause serious health problems, especially in occupational settings. They can, if inhaled, disrupt the normal functioning of the lungs. Exposure to asbestos has been linked to several diseases, including asbestosis, lung cancer, and mesothelioma (cancer of the chest and abdominal linings). Since these diseases do not develop immediately after inhalation of asbestos fibers, it may be 20 years or more before symptoms become apparent.

As with cigarette smoking, the health risks associated with asbestos are linear: the more asbestos fibers a person inhales, the greater the risk of developing an asbestos-related disease. Although studies have concluded that high levels of exposure to asbestos in the workplace has caused malignant and non-malignant diseases, uncertainty continues to surround the probability of malignancies occurring at low levels of exposure. Low level exposure would include average exposure to asbestos fibers in schools and buildings.

Due to a lack of reliable exposure data extracted from epidemiological studies and the absence of an exposure threshold, the fact that school children and custodial workers are exposed to any amount of asbestos fibers continues to constitute a concern.

The presence of asbestos-containing material in a setting does not necessarily pose a health threat; however, this material can become extremely hazardous when, due to damage or deterioration over time, it releases fibers into the air that are inhaled.



The potential for an asbestos-containing material to release fibers depends primarily on its condition. If the material has become friable--that is, if the material can be crumbled by hand pressure--it is more likely to release fibers, especially when damaged. It is estimated that approximately 44,900 schools contain asbestos. The fluffy spray-applied asbestos fireproofing material is generally considered friable. Pipe and boiler insulation materials can also be friable, but they often are enclosed in a protective casing that prevents fiber release unless the casing itself becomes damaged. Some materials that are considered nonfriable, such as vinyl-asbestos floor tile, can also release fibers when sawed, sanded or otherwise disturbed. Additionally, improperly performed floor tile maintenance procedures can result in an increase in asbestos exposure. EPA strongly suggests that recommended guidelines for stripping asbestos-containing floors be followed. Materials such as asbestos cement pipe can also release asbestos fibers if they are broken or crushed when buildings undergo demolition, renovation, or repair.

## *MEANS OF MANAGEMENT: HOW TO REDUCE RISKS IN YOUR SCHOOL*

Fortunately, most asbestos-containing material can be safely and properly managed in its place. Asbestos that is well managed and maintained in good condition appears to pose relatively little risk to students and school employees. Accordingly, the Asbestos Hazard Emergency Response Act (AHERA) schools rule (discussed in the next section) rarely requires the removal of asbestos-containing materials. However, when asbestos becomes damaged appropriate response actions must be implemented.

Proper asbestos management begins with a comprehensive inspection by qualified, trained, and experienced inspectors, accredited through an EPA- or State-approved training course. Inspecting the condition of asbestos materials--initially with AHERA-accredited inspectors and at least semi-annually properly with custodial or maintenance staff--is extremely important in order to identify any damage or deterioration in the condition of the material. Additionally, schools must complete a reinspection using accredited inspectors every three years. Sometimes everyday school or maintenance activities can damage asbestos material and cause fiber release, particularly if the material is friable. It is also very important that the custodial and maintenance staff receive proper training on how to clean up small disturbances, and proper work practices and protection during any activities where asbestos might be disturbed. In addition, any renovation work at the school must be closely monitored to ensure that asbestos is not disturbed or that any disturbances are minimized and controlled. A thorough initial inspection and regular surveillance is an important step in preventing accidental exposure to high levels of asbestos fibers.

There are several basic types of methods (some of which are not "response actions") for dealing with asbestos:

- Developing and carrying out a **special maintenance plan** to ensure that asbestos-containing materials are kept in good condition.
- **Repairing** materials such as damaged pipe or boiler covering.
- Spraying the material with a sealant to prevent fiber release--a process called **encapsulation**.

- **Enclosing** the materials by placing an air tight barrier around them.

- **Removing** asbestos--but only according to special procedures.

Specifically, encapsulation, enclosure, removal, and in some cases repair must be completed by accredited abatement professionals. Asbestos removal is usually necessary only when the material has extensive damage and when other types of response actions are inadequate. Although no regulation prohibits schools from removing asbestos materials, removal decisions should not be made lightly. An ill-conceived or poorly conducted removal can actually increase rather than reduce risk. All school abatement projects must be designed, supervised, and conducted by accredited professionals and should be performed in accordance with accepted procedures as regulated by AHERA. In addition, schools may wish to hire an experienced and qualified project monitor to oversee the asbestos contractor's work and to make sure that the removal is conducted safely.

Only an AHERA-accredited management planner--an asbestos professional with proper training, qualifications, and experience--is authorized to advise school officials on which response action is appropriate for any given situation. The final decision on the proper method is up to the school officials after they receive the advice of the school's accredited management planner.

## *CURRENT REQUIREMENTS: WHAT MUST BE DONE*

On October 22, 1986, President Reagan signed AHERA into law. The Act required EPA to develop regulations creating a comprehensive framework for addressing asbestos hazards in schools. The Act required EPA to construct a model accreditation program for individuals who conduct inspections for asbestos, develop management plans, and perform abatement work.

Other provisions of AHERA require all public and private elementary and secondary schools to conduct inspections for asbestos-containing building materials, develop management plans, and implement response actions in a timely fashion. Specifically, each local education agency (or LEA, which means a public school district or private school) must do the following:

1. Designate and train a person to oversee asbestos-related activities in the LEA (designated person).
2. Inspect every school building for both friable and nonfriable asbestos-containing building materials.
3. Prepare a management plan for managing asbestos and controlling exposure in each school and submit that plan to the appropriate State agency. The plan should include a time frame for implementation of recommended actions.
4. Use only properly accredited persons to conduct inspections and develop the asbestos management plan. Accredited personnel must also conduct the required triennial reinspections.
5. Provide custodial staff and short-term workers with information about the location of any asbestos-containing materials. Post warning labels as required.

6. Provide custodial and maintenance staff with two hours of awareness training and an additional 14 hours of training for employees whose duties may cause them to disturb asbestos. This additional training must include proper work practices and the use of protective equipment when disturbing asbestos-containing materials.

7. Notify parents, teachers, and other school employees about the asbestos inspection and the availability of the asbestos management plan for review.

8. Utilize properly accredited individuals to design and conduct asbestos abatement actions that are necessary and appropriate to protect health and the environment. These actions or methods must be documented in the management plan.

9. Keep records of all asbestos-related activities in the plan and make them available for public review.

10. Inform employees and building occupants or their legal guardians annually regarding the management plan availability and related on-going activities pertaining to implementation.

Management plans were submitted to State agencies on or before May 9, 1989, as mandated by the provisions of AHERA. LEAs were required to begin implementation of their management plans by July 9, 1989. LEAs are required to update and maintain management plans to reflect activities with ongoing operations and maintenance, periodic surveillance, inspection, reinspection, and response action activities.

## *FEDERAL ASSISTANCE: WHAT HELP IS AVAILABLE?*

EPA has established several programs to assist schools in assessing and managing their asbestos related problems. Through its Headquarters office in Washington, D.C., and ten Regional offices located in major U.S. cities, the Agency provides direct technical assistance to help thousands of school officials, school employees and parents better understand asbestos issues. EPA provides funds to assist States in developing asbestos programs, and to help schools comply with federal asbestos regulations.

Since 1985, EPA has provided over $200 million in loans and grants through the Asbestos School Hazard Abatement Act (ASHAA) program to help financially needy public and private schools correct serious asbestos hazards. Under this program, EPA provides financial aid to schools in the form of an interest-free loan, grant, or a combination of both.

EPA provides ASHAA loan and grant applications to all public and nonprofit private schools upon request, which in turn must submit completed applications to their State Governor (or other designated State agency) for review. The State then submits the applications to EPA. The Agency reviews the applications and makes offers of financial assistance based on the severity of the LEA's asbestos problems and its financial need. ASHAA grants cannot exceed 50 percent of a specific abatement project's cost. Loans can be awarded covering up to 100 percent of the project cost, with a maximum repayment period of twenty years.

## *HOW DO I OBTAIN MORE INFORMATION?*

Under AHERA, LEAs afford citizens the opportunity to become familiar with asbestos activities in their respective school districts. The initial point of contact to obtain information on asbestos activities should be the LEA designee. This individual is most familiar with the asbestos situation in your school. Additionally, State AHERA designees and local, State, and national parent and teacher organizations are excellent sources for requesting information on asbestos activities.

CONTACTS:

The EPA Toxic Substances Control Act (TSCA) Hotline

(202) 554-1404

EPA has an asbestos ombudsman to help citizens with asbestos-in-schools issues, questions, and complaints.

TOLL FREE (800) 368-5888

PUBLICATIONS:

The following documents can be obtained by calling the EPA TSCA Hotline:

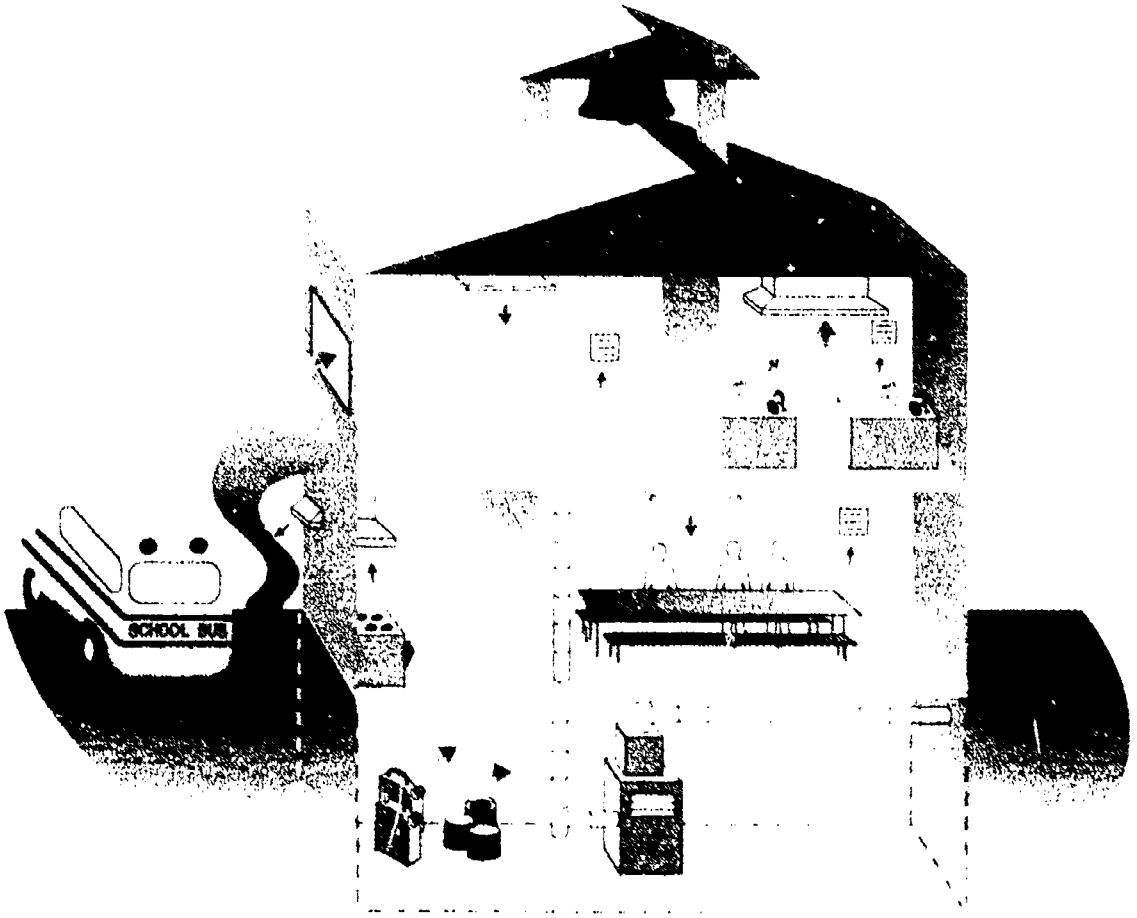
*Managing Asbestos In Place: A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials*

*The ABC's of Asbestos in Schools*

*100 Commonly Asked Questions About the New AHERA Asbestos-in-Schools Rule*

EPA also has several additional sources available for interested individuals to contact for more information on asbestos. The sources are listed in the last section of this booklet.

# INDOOR AIR QUALITY




Key: → shows air movement

➧ source of air contaminants

## *WHY BE CONCERNED WITH INDOOR AIR QUALITY?*

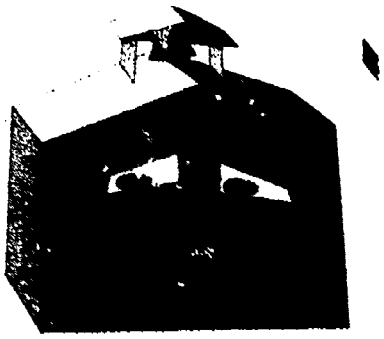
### Background

It is common to think of air pollution solely in terms of outdoor pollution. However, in the 1970s and 1980s, EPA conducted several studies to determine individuals' total exposure to air contaminants from both indoor and outdoor sources. From these studies we learned that concentrations of important contaminants were often 2-5 times higher indoors than outdoors. Since most individuals spend over 90% of their time indoors, it is clear that indoor pollution is an important environmental health problem.

High energy costs encourage the development of tight buildings and a reduction in the amount of outdoor air brought into schools for ventilation. In addition, building operating and maintenance budgets are often reduced to minimal levels, particularly in schools. These actions, combined with the proliferation of indoor sources of contaminants--synthetic materials, cleaning agents, pesticides, printing and copying devices, combustion and humidification appliances, tobacco products, and other sources--reduce the quality of indoor air environments and consequently the health and comfort of building occupants.

### Building sickness in schools

A building is characterized as "sick" when its occupants complain of health and comfort problems that can be related to working or being in the building. Problems associated with sick buildings are "sick building syndrome", in which the cause or causes of symptoms are not known; or "building related illness", in which an illness can be traced to a specific cause, such as Legionnaire's



disease. Complaints can include headache, nausea, lethargy, eye nose and throat irritation, difficulty in concentration, and similar symptoms. Many school buildings throughout the country have been affected, sometimes requiring temporary relocation or school closings.

From investigations of these buildings and from other studies, it is clear that the problem is often not traceable to a single source or a single contaminant, but rather to multiple problems in the design, construction, operation or maintenance of buildings. Studies also suggest that the problem is not limited to clear situations of episodic illness, but can result in decreased health, comfort, and productivity, for which poor indoor air quality may not be an obvious cause.

**Adverse effects on children**

Children may be especially susceptible to air pollution. The same concentration of pollutants will result in a higher body burden in children than adults because children breath a greater volume of air relative to their body weight. For this and other reasons, air quality in schools is of particular concern.

## *WHAT FEDERAL LEGISLATION ADDRESSES INDOOR AIR QUALITY?*

Environmental Protection Agency activities in indoor air quality are based on authority provided by Title IV of the Superfund Amendments and Reauthorization Act (SARA). Title IV, also referred to as the Radon Gas and Indoor Air Quality Research Act of 1986, requires EPA to conduct research, coordinate public and private-sector activity, and disseminate information on all aspects of indoor air quality. The Agency also has other authorities available to it to address indoor air quality. These include the Toxic Substances Control Act, the Federal Insecticide, Fungicide and Rodenticide Act, and the Safe Drinking Water Act.

## *WHAT CAUSES INDOOR AIR QUALITY PROBLEMS IN SCHOOLS?*

Important factors which affect the quality of the air in schools are: (1) indoor chemical sources of contaminants; (2) failure of the ventilation system to adequately dilute contaminants with outdoor air, to exhaust contaminant sources, to deliver ventilation air to the breathing zone of the occupants, or to maintain proper temperature and humidity conditions; (3) air brought into the building which is contaminated from outdoor sources, particularly those close to the building's air intake vents; and (4) the presence of microbial contaminants which proliferate in humid or wet environments.

**Indoor chemical sources:** Sources in schools include building materials, furniture, paints, pesticides, cleaning agents, sewer gases, and combustion appliances. Special activities, such as science laboratories, industrial/vocational shops, art and craft activities, photo labs, duplicating devices, and smoking lounges are particularly important.

**Ventilation:** Ventilation is a critical element in the maintenance of healthy school environments. Ventilation failures which cause indoor air quality problems include inadequate flow of outdoor air through infiltration or mechanical ventilation, poor distribution of air, inadequate exhaust of specific sources such as those described above, ventilation systems which become contaminated due to poor cleaning and maintenance, and controls which do not keep temperature and humidity within acceptable limits.

**Contaminated outdoor air:** The outside ambient air, particularly in urban areas, may at times be sufficiently contaminated to warrant treatment before it is delivered to occupied areas of the building. In addition, air intake vents located close to or downwind from outdoor sources are common causes of building related problems. Outdoor sources such as school bus and other loading areas, trash areas, exhaust vents from restrooms or other sources, outdoor street traffic, or parking lots are common.

**Microbial contamination:** Microbial contamination in buildings can become a very serious indoor air quality problem. Microbial contaminants include fungi, bacteria and viruses, and can result in allergic or infectious diseases; some microbial contaminants or agents can produce toxic substances. Microbial agents proliferate in warm, moist environments. They are often found in humidification systems, water-damaged buildings and furnishings, improperly cleaned and maintained ventilation systems, or in moist or wet areas in the presence of organic matter such as paper, books, or dirt.

## *WHAT CAN BE DONE TO CONTROL INDOOR AIR QUALITY?*

The key technical methods for controlling indoor air quality are: reducing exposure from known sources, ensuring adequate ventilation, and air cleaning. Prevention of indoor air quality (IAQ) problems is accomplished through the development and implementation of IAQ protocols or standard procedures in the design, construction, operation and maintenance of schools. These protocols ensure that sources of air contaminants are controlled, and that ventilation and air cleaning provisions are adequate. In addition, a technically sound procedure for effectively diagnosing and mitigating problems when they do occur ensures that the school district is fully prepared to manage the quality of its indoor air environment.

## *WHAT IS AN IAQ MANAGEMENT PLAN FOR SCHOOLS?*

An IAQ management plan embodies all the technical protocols described above, and provides administrative procedures necessary for their implementation. An efficient implementation plan will integrate the IAQ management plan with provisions for energy conservation, preventive maintenance, building design standards, and health maintenance of students and staff. An IAQ management plan will include the following provisions:

Technical provisions: Periodic building audits; ventilation standards and operational procedures; protocols for design and construction; protocols for maintenance, including specific provisions for painting and pest control; protocols for investigating problems, and specific protocols for the control of special school sources, such as smoking lounges, laboratories, duplicating rooms, industrial arts classes, and other sources.

Administrative provisions: Designation of an IAQ coordinator; assignment of responsibilities and specific implementation procedures; an IAQ training program; an ongoing communications strategy; and provisions for hypersensitive students and staff.

## *IS INFORMATION AND GUIDANCE AVAILABLE ?*

The Indoor Air Division in the Office of Air and Radiation in EPA periodically produces information and guidance on various aspects of indoor air quality for a variety of audiences, including the general public, building professions, health professions, and environmental/public health organizations. Materials include booklets, fact sheets, and guidance manuals, as well as lists of federal and state contacts on important indoor air quality subjects.

CONTACTS:

The EPA regional indoor air contacts are listed in the final chapter of this booklet. A directory of individuals and agencies in each state dealing with specific aspects of indoor air quality may be found in the Directory of State Indoor Air Contacts (see publications list below). For further information about the Indoor Air Program, contact the Indoor Air Division (ANR-445), Office of Air and Radiation, USEPA, Washington, DC 20460.

PUBLICATIONS:

The following documents are available:

*Current Federal Indoor Air Quality Activities*

*Directory of State Indoor Air Contacts*

*The Inside Story: A Guide to Indoor Air Quality.*

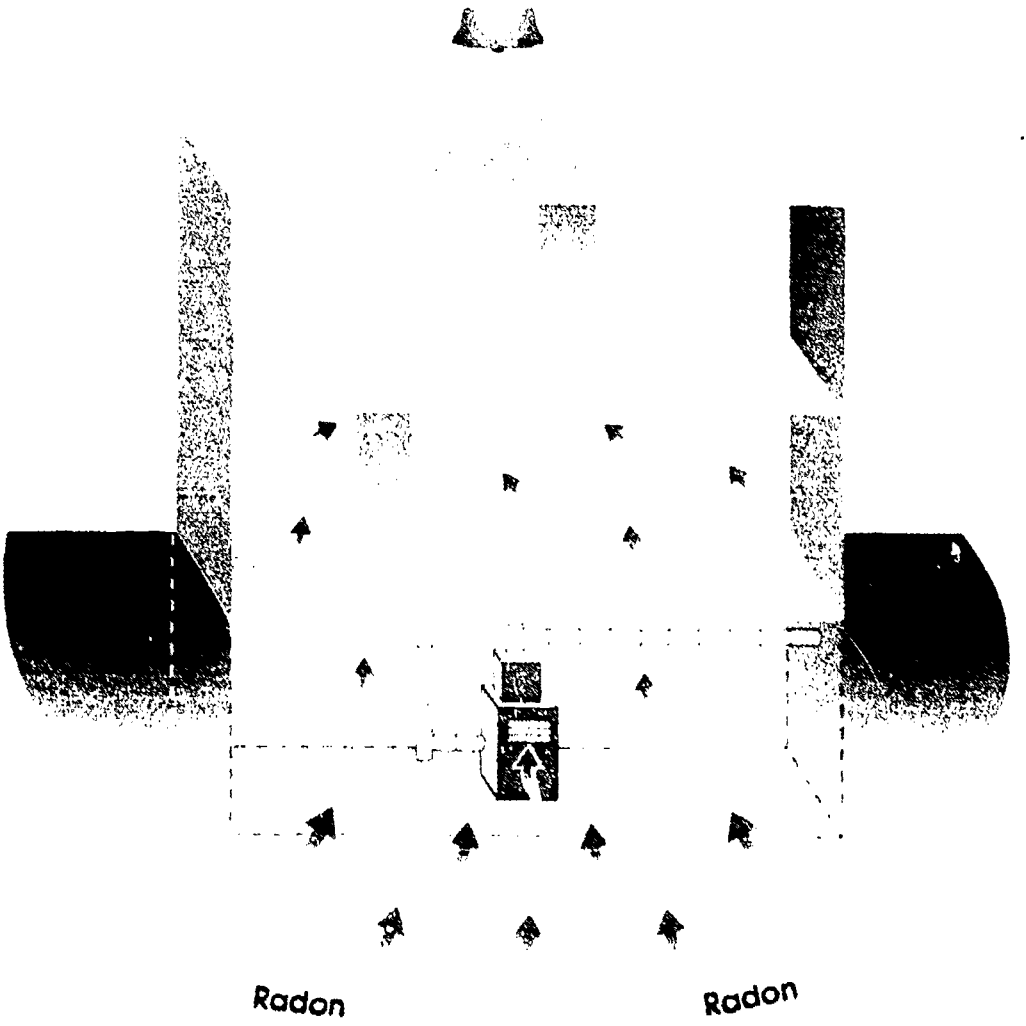
Fact Sheets on:

- *Ventilation and Air Quality in Offices*
- *Sick Buildings*
- *Environmental Tobacco Smoke*
- *Residential Air Cleaners*

You can request these documents by writing to the Public Information Center (PM-211B), U.S. Environmental Protection Agency, Washington, D.C. 20460, or by writing the Indoor Air Contact in care of your EPA Regional Office.

Information on indoor air quality may also be available from your State or local health or environmental agency.

# RADON



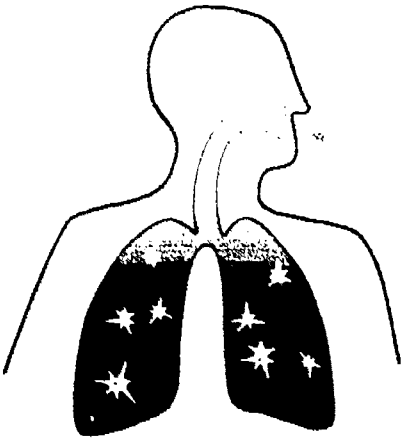
## *RADON MAY BE A SERIOUS THREAT IN YOUR SCHOOL*

Radon is a naturally occurring radioactive gas that has been found in schools and homes throughout the country. It is the second leading cause of lung cancer in the United States. The Environmental Protection Agency, the American Medical Association, the American Lung Association and the Surgeon General, rank indoor radon among the most serious environmental health problems.

In 1988, the Surgeon General issued a National Public Health Advisory warning the public about the risks associated with exposure to elevated levels of radon. The advisory recommended that most homes be tested. Since then elevated radon levels have been found in many schools and EPA recommends that schools nationwide be tested for radon.

## *WHAT ARE THE HEALTH EFFECTS?*

Radon causes lung cancer. When you inhale radon, its decay products can become lodged in your lungs. As these decay products break down further, they release small bursts of radioactive energy which can damage lung tissue and lead to lung cancer. EPA estimates that about 20,000 lung cancer deaths are attributed to radon each year.



The longer the exposure, or the higher the level of radon, the greater the risk.* That is why it is so important that your school be tested immediately. Refer to the radon risk evaluation chart for an indication of associated risks.

* Many people are already exposed to radon at home, and exposure in schools can compound the risk.

## RADON RISK EVALUATION CHART

| Annual Radon level | If a community of 100 people were exposed to this level: | This risk of dying from lung cancer compares to: |
|---|---|---|
| 100 pCi/L | About 35 people in the community may die from Radon | Having 10,000 chest x-rays each year |
| 40 pCi/L | About 17 people in the community may die from Radon | Smoking 2 packs of cigarettes each day |
| 20 pCi/L | About 9 people in the community may die from Radon | Smoking 1 pack of cigarettes each day |
| 10 pCi/L | About 5 people in the community may die from Radon | Having 1,000 chest x-rays each year |
| 4 pCi/L | About 2 people in the community may die from Radon | Smoking about 4 cigarettes each day |

Levels as high as 3500 pCi/L have been found in some homes.
The average Radon level outdoors is around .2 pCi/L or less

The risks shown in this chart are for the general population, including men and women of all ages as well as smokers and non-smokers. Children may be at higher risk

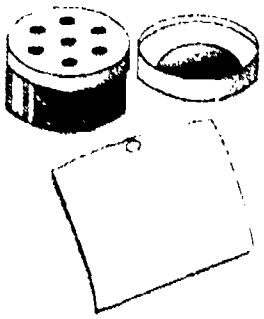
### *WHAT IS THE SCOPE OF THE RADON PROBLEM IN THE NATIONS SCHOOLS?*

In a study of schools in 16 States, nineteen percent of the 3,000 rooms tested had levels above EPA's action level of 4 pCi/L. The highest level found, 136 pCi/L, is the equivalent of having over 10,000 chest x-rays a year. EPA has issued an Interim Report on how to measure schools for radon. This Report is available from your State Radiation Office.

### *HOW DO YOU KNOW IF A SCHOOL HAS RADON?*

Because you can't see, taste, or smell radon, the only way to know if a school has elevated radon levels is to test. Testing for radon is easy and schools with elevated levels can be fixed. A typical school can be tested for about $1,000. However, you may prefer to hire a radon measurement company to do the testing for you.

## *HOW CAN YOU OBTAIN RELIABLE RADON SERVICES?*



EPA conducts the Radon Measurement Proficiency (RMP) Program which evaluates radon measurement companies and the test kits they sell. A list of proficient companies is distributed to the States each year. EPA recommends that you consult the RMP list when choosing a testing company. To obtain a copy of the RMP list contact your State Radiation office.

In addition, EPA has established a National Radon Contractor Proficiency Program (RCP) that evaluates contractor's ability to fix radon problems in residences. The RCP list will be available in the Spring of 1990 from your State Radiation office. Because radon problems have only recently been discovered in schools, there are fewer contractors who have experience in this area. Contact your State Radiation Office to obtain names of experienced school radon reduction contractors.

## *WHAT IS THE BASIS FOR EPA'S RISK ESTIMATES?*

Radon risk estimates are based on scientific studies of thousands of workers exposed to radon in underground mines. Scientists are far more certain of radon risk estimates because these estimates are based on studies of humans. The National Academy of Sciences, the World Health Organization, the Surgeon General, and other national and international authorities agree that radon is a serious health problem.

## *WHAT IS EPA DOING TO ADDRESS THE RADON PROBLEM IN SCHOOLS?*

EPA has issued Interim Reports to provide guidance on how to test and fix schools for radon. A final report for radon measurement will be available in the Winter of 1991.

EPA is also conducting a School Evaluation Program for diagnosing and fixing radon problems in schools. Preliminary work in schools shows that techniques proven successful in fixing homes

also work in schools. However, the unique construction and operation characteristics of school buildings require special considerations.

Information collected from the School Evaluation Program will be incorporated into a School Training Program. This program will be designed and offered by EPA and EPA-sponsored Regional Radon Training Centers. These training courses will cover radon measurement, building investigation design, and installation of mitigation systems in schools.

The Indoor Radon Abatement Act of 1988, authorizes EPA to conduct a nationwide study of radon to better characterize the radon problem in schools. Once the activities have been completed, the information will be shared with local education agencies and the States.

## *WHAT ASSISTANCE IS AVAILABLE TO SCHOOLS?*

In September 1989, EPA initiated a new program to provide grants to States to establish and enhance State Radon Programs. A State may make funds available to schools and local governments to develop public information materials, conduct radon surveys of school buildings, establish mitigation demonstration programs, and conduct training activities. For further information about the grants program, contact the nearest EPA Regional Office, or your State Health or Radiation Control Departments listed in the last chapter of this booklet.

Radon training for federal, State and local officials, and the private sector on radon health ri. measurement and mitigation is offered through the three Regional Radon training centers. As EPA collects new data and develops mitigation techniques for schools, a training segment developed

specifically for schools may be incorporated into the curriculum by the Spring of 1990. Training center directors will be working with EPA Regional staff to assess the needs of State education offices. A List of Regional training centers is located at the end of this chapter.

PUBLICATIONS:

*Radon Measurement In Schools - Interim Report*, provides guidance to school officials on the number of school rooms to measure for radon, the time of year to measure, information on available measurement devices and methods, and guidance on interpreting test results. The final report will be available in the Winter of 1991.

*Radon Reduction Techniques In Schools - Interim Technical Guidance* assists school officials in making informed choices when selecting radon-reduction strategies.

*Radon In Schools Brochure*, developed in cooperation with the National Education Association and the National Parent TeacherAssociation, informs parents and teachers about the seriousness of the radon problem.

*The National Radon Measurement Proficiency (RMP) Program - Cumulative Proficiency Report*, is a listing of all testing companies that have successfully completed EPA's measurement proficiency program. EPA recommends that you consult this list when choosing a testing company.

*The Radon Poster*, developed in conjunction with the National Science Teachers Association, combines graphics with text to educate junior and senior high school students about radon. In addition, a radon article was featured in the January 1988 issues of Science Teacher and Science Scope magazines.

These and other EPA radon materials are available through your Regional EPA and State offices.

EPA has established a twenty-four hour Hotline to provide the public with information on how to test homes for radon. The number is **1-800-SOS-RADON.**

## *REGIONAL RADON TRAINING CENTERS*

**Eastern Regional Radon Training Center**

Rutgers University
Dr. Alan Appleby
Radiation Sciences
Kilmer Campus, Building 4087
New Brunswick, NJ 08903

(201) 932-2582
(201) 932-2551

**Midwest University Radon Consortium**

University of Minnesota
Professor Bill Angell
1985 Buford Avenue (240)
St. Paul, MN 55108-1011

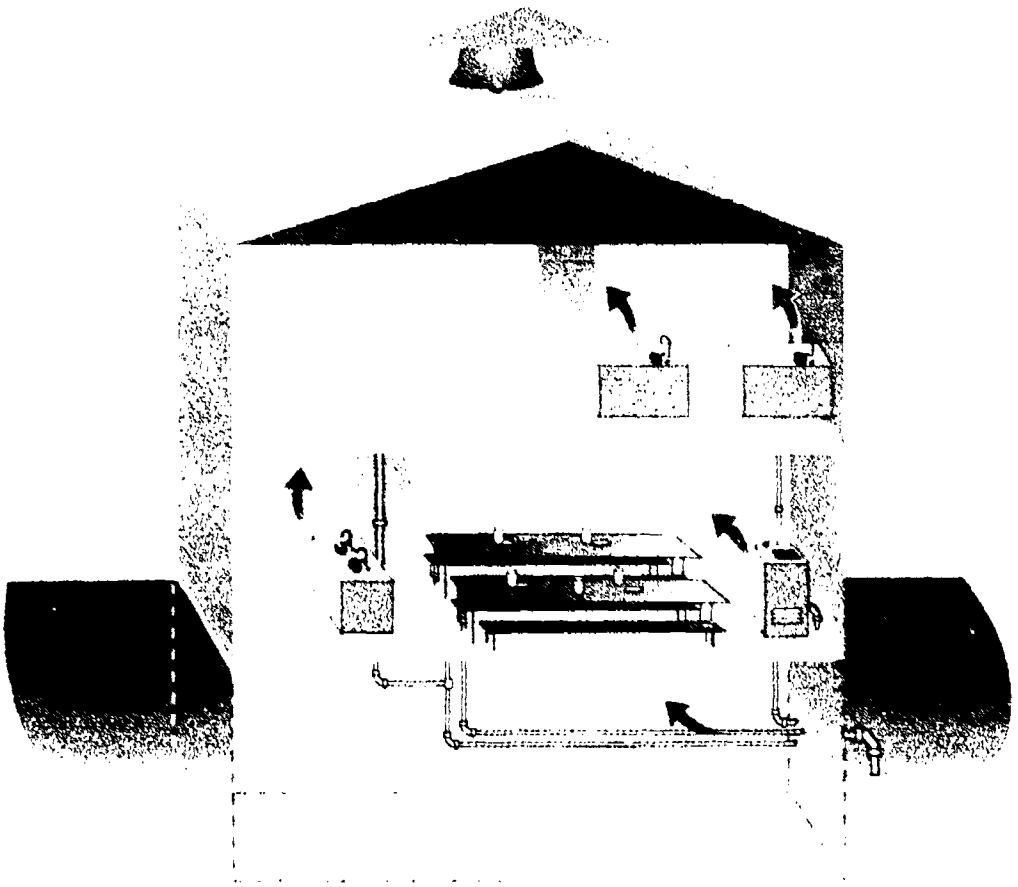
(612) 624-5343 (general information)
(612) 625-6294 (course information)
1-(800) 367-5363 (course information)

**Western Regional Radon Training Center**

Colorado State University
Dr. James Young
Department of Industrial Sciences
Fort Collins, CO 80523

(303) 491-5085
(303) 491-5215

# LEAD IN DRINKING WATER



## *WHY IS LEAD A PROBLEM?*

Lead is a toxic metal harmful to health even in small amounts. Lead is especially dangerous for very young children, fetuses, and pregnant women. Too much lead can cause damage to the brain and nervous system and can result in reduced attention span, behavioral problems, impaired hearing, and lowered IQ. Lead can also interfere with the body's ability to make red blood cells, thus reducing the amount of oxygen in the blood and affecting many different body functions. Fetuses that absorb lead through the placenta may have increased risk of premature birth, reduced birth weight, and slowed physical and nervous system development.

Lead enters the human body through inhalation, such as by breathing particles of lead-contaminated dust from factories--or through ingestion, such as by eating food stored in lead-soldered cans, drinking contaminated water, or eating lead-contaminated dust or soil. It is important to note that lead, unlike other metals, may be stored in the bone, to be released later into the bloodstream. For this reason, even low exposures to lead can have a cumulative negative effects.

## *HOW MUCH LEAD IS TOO MUCH*

There are no safe levels for lead exposure. The degree of harm depends on a child's total exposure to lead from all sources--air, soil, paint, dust (both indoor and outdoor), food (which may contain lead absorbed from air, soil, or food containers), and water. While adults excrete most of the lead they inhale or ingest, children process the metal differently. Their developing bodies absorb more of the lead they consume and the physical and behavioral effects of lead occur at lower exposure levels. In addition, children at play often come into frequent contact with such potential sources of lead con-

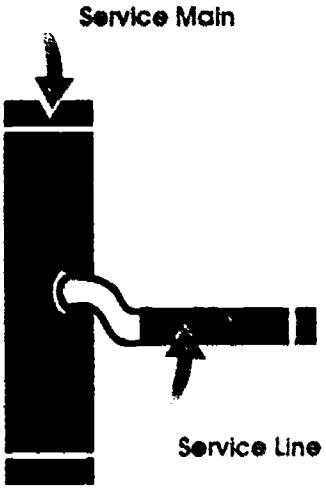
tamination as dirt and dust. Because children habitually put their hands to their mouths, a lot of this lead may be ingested.

Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase total exposure to lead, particularly for infants who drink liquids made with water, such as formula. EPA estimates that lead in drinking water can account for 20% or more of total exposure in young children. Some of this exposure occurs in schools and day-care centers.

Levels of lead in drinking water are measured in parts per billion (ppb). **EPA recommends that schools take action if samples from any water fountain, water cooler, or other drinking water outlet show lead levels over 20 ppb. Such fountains, coolers, or other outlets should be removed from service until lead levels are reduced to below 20 ppb.**

## *HOW DOES LEAD GET INTO OUR WATER?*

Unlike most drinking water pollutants, lead does not usually occur naturally in source water such as rivers and streams. What lead is present can be removed from the water at the supplier's treatment plant. However, between the water source and the point of consumption there are a series of pipes and connections, and outlets that can be a source of lead. Pipes called distribution or service mains carry the water through the streets; service lines or connectors carry the water from the main to the school building; and inside the building itself are numerous pipes which distribute the water to individual outlets. In many areas of the country, service lines of lead have been installed as recently as 1986. (In fact, the Latin word for lead is "plumbum" from which our English words "plumber" and "plumbing" are derived.)




Another potential source of lead contamination is the solder used to join sections of copper pipe. Until recently, this solder contained up to 50 percent lead. This solder is one of the major causes of lead contamination in drinking water today. Brass or plastic fixtures or other parts of the plumbing system may also be a significant source of lead.

The process by which the lead dissolves or "leaches" into the water is known as corrosion. Corrosion is the reaction between the water itself and the lead in the pipes or solder. It is most frequent in soft water (which lathers soap easily) and acidic (low pH) water. However, all kinds of water may be potentially corrosive to lead, and thus leach lead into the water. Fortunately, water can be treated (usually by the water supplier) to make it less corrosive. Mineral deposits may then form a protective coating on the inside of pipes and joints, thereby insulating the water from any lead in the pipes or solder. Until such a coating forms, however, water is in direct contact with the lead and lead levels can remain high.

### *When Is Lead Likely To Be A Problem At My School?*

You cannot see, taste, or smell lead dissolved in water. The only way to know if lead is a problem is to test the water. However, schools are most likely to have a lead problem if:

- the school or water system has lead pipes;
- the school has water coolers with lead-lined storage tanks or lead parts; or
- the school has copper pipes with lead solder **and**

-- is less than 5 years old (or has areas of recent construction or plumbing repair in which lead solder or materials were used), or
-- has soft or acidic water, or
-- has areas where water sits in the pipes for extended periods of time (such as areas of low or infrequent use or after vacations or weekends.)

### *What Is Government Doing About Lead In Drinking Water?*

In 1976, Congress passed **The Safe Drinking Water Act** which authorized EPA to set standards (known as Maximum Contaminant Levels or MCLs) for drinking water quality. These standards limit the amount of specific contaminants permitted in our water supply and are reviewed and revised periodically to reflect current health data and technological advances.

While the current standard for lead is 50 parts per billion (ppb), EPA proposed new regulations in the fall of 1988 that substantially reduce the amount of lead permitted in water delivered by a public water supplier. The lead level specified in these new regulations (expected by 1991) will apply to representative tap samples taken from a variety of homes and buildings. The recommended level of 20 ppb mentioned on page 27 still applies for corrective action on individual water outlets.

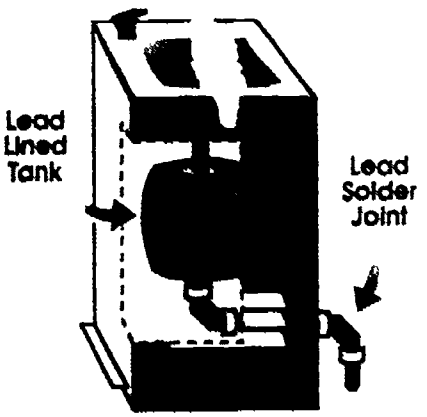
In 1986, Congress passed an amendment to the Safe Drinking Water Act known as the **Lead Ban** which requires that only lead-free pipe (containing not more than 8% lead) and solder (containing not more than 0.2% lead) be used in the installation or repair of any plumbing connected to a public water system. The law applies only to plumbing which distributes drinking water and does not require the removal of existing lead pipes or solder. All States were required to adopt the provisions of the Lead Ban by June 1988 **schools should make**

**that only lead-free materials are used in the repair or replacement of plumbing. Report any violation of the lead ban to State and local authorities.**

## The Lead Contamination Control Act of 1988

**The Lead Contamination Control Act of 1988** (LCCA), another major amendment to The Safe Drinking Water Act, focuses on lead in the drinking water of schools and day-care centers. This law's programs and provisions affect primary and secondary schools, kindergartens, and day-care centers, water-cooler manufacturers and distributors, and federal, State and local agencies.

1. As directed by the law, **EPA** has published a guidance document to help schools and day care centers test for and remedy lead contamination in drinking water. Entitled Lead in School Drinking Water, the manual explains why lead is a problem, how to identify possible sources of lead, how to conduct a step-by-step sampling program, and what kind of options are available to remedy any problems. (See below on how to obtain this document.)




2. The LCCA requires that EPA publish and make available to the States lists with the name and model number of water coolers that have lead-lined tanks and those that contain lead parts. (See below on how to obtain updated lists.)

3. Water coolers identified by EPA as having lead-lined tanks are considered to be "imminently hazardous consumer products" under the law. **The Consumer Product Safety Commission** must issue an order requiring manufacturers and importers of coolers with lead-lined tanks to repair, replace, or recall the coolers. The law also

attaches criminal penalties for the manufacture or sale of any water cooler that is not lead-free.

The law requires that each State establish a program to assist schools to test for and remedy lead contamination in school drinking water.

4. The Governor of each State has designated a primary contact person responsible for developing and managing the State's program to help schools and day-care centers set up a successful lead contamination control program. States must also provide a list of laboratories that provide reliable and accurate testing services, the guidance document and testing protocol and the list of identifying water coolers which are not lead-free, including those with lead-lined tanks. (To find out who to contact in your State, call EPA's Safe Drinking Water Hotline at the number listed at the end of this section.)

5. Schools are urged (though not required under the LCCA) to test drinking water for lead contamination. Those schools that do test are required under the law to make the test results available in the administrative offices for review by teachers, staff, parents, and others. They must also notify parent, teacher, and employee organizations of the availability of the test results.

6. If funds become available, the Centers for Disease Control may make grants available to States and local governments for initiating and expanding community programs to screen infants and children for elevated blood lead levels; assure referral for treatment and environmental intervention of infants and

children with elevated blood levels: and provide educational material on childhood lead poisoning.

### *What Schools and School Districts Should Be Doing*

EPA encourages schools to develop a three step program to identify and remedy lead contamination within the school:

**Step 1.** Develop Plumbing Profile of your building. This profile combines a review of construction and repair records with a physical inspection of the exposed plumbing within the building (both original plumbing and any recent repair or construction). The survey will help determine if the schools is likely to have a lead problem and will help control costs by identifying those areas, outlets, and water coolers with the highest risk of lead contamination.

**Step 2. Establish a Testing Program.** Using EPA's lists of water coolers which are not lead free and the plumbing profile, EPA urges that water taps, in addition to those connected to water coolers, be sampled for lead where such taps may be contaminated by lead and supply drinking water for cooking. The drinking water samples drawn from these outlets should be analyzed by a competent laboratory. To help establish the source of the contamination, follow-up samples are drawn from those outlets with test results showing elevated lead levels

**EPA recommends that schools remove from service any outlet with a lead level above 20 ppb until lead levels can be brought down.**

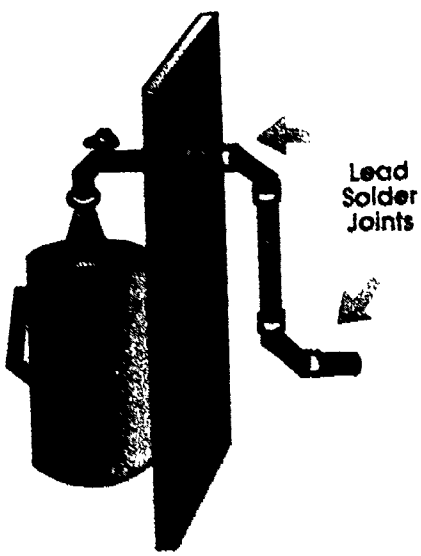
**Step 3. Take Corrective Action.** Schools have numerous options for remedying lead contamination. Each school and district is unique, and each must make its own decision based upon such

factors as cost, availability of water, and manpower requirements. The school should seek advice on the best remedy for a school's particular problem from the State. The school's water supply may also be able to supply technical advice regarding a solution for a school's particular situation.

## Remedial Options

**Options which can be effectively used by schools to remedy lead contamination.**

**Flushing,** i.e. removing standing water from the pipes, is the simplest option and can be highly effective, especially if the contamination is limited to a few outlets. Flushing should be practiced early in the morning before school begins.




**Corrosion control** can be highly effective, reducing both lead levels and damage to plumbing. Schools that supply their own water should seek technical advice from qualified personnel to implement corrosion-control measures.

**Reverse-osmosis devices and distillation units, and filters** may be installed at the tap. The National Sanitation Foundation tests and evaluates these devices and should be contacted before the school purchases any units. Contact NSF, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.

**Replacing outlets, lead pipes, and lead solder** can be the most practical solution for some schools where the contamination is limited.

**An alternative grounding system** for electrical wires grounded to water pipes may be installed only by a qualified electrician if allowed by local and State building codes.

**Bottled water** may be purchased if other treatment fails or is impractical. Check to make sure that the bottler tests the quality of the water to ensure it meets drinking water standards.

**Interim Control Measures**

Interim measures can reduce possible lead exposure while you are awaiting test results:

**Remove sediments** from accessible screens at the end of faucets as part of a regular maintenance program. Drain reservoirs of water coolers where the presence of sediments are suspected or seen. Sediments containing lead may produce high lead levels in water.

**Use only cold water** for the preparation of food and beverages in school cafeterias and cooking. **Do not use water that has been in contact with the school's plumbing for more than 6 hours,** such as overnight, after weekends, or after vacations. Make sure the system is flushed before school begins.

**Building Community Support**

EPA recommends that each school system or district appoint one individual to be responsible for its lead-control program. This individual can answer questions about the lead-control program from parents, teachers, staff, other personnel, and the media.

Organizations can help get out information about lead contamination in drinking water and what their schools are doing about it. PTAs can hold public forums for their members; teachers can incorporate units about drinking water quality in their classroom science curriculum. All segments of the school community should view the lead-contamination problem as a community problem and assume responsibility for supporting the program.

CONTACTS:

**State designees** are a good source of information and can answer questions on specific resources available to schools.

**The ten Regional EPA Offices** have a Drinking Water Division. Addresses and phone numbers are listed at the end of this booklet.

**The EPA Safe Drinking Water Hotline** will answer questions on a variety of drinking water issues, as well as provide updated lists of water coolers, information on how to obtain publications on drinking water and State contacts for drinking water problems. Callers within the U.S. except the District of Columbia, Alaska, Puerto Rico, and the Virgin Islands, may reach the Hotline at 800-426-4791. Callers in the District of Columbia and Alaska should call 202-382-5533. The Hotline is open Monday through Friday, excluding Federal holidays, from 8:30 a.m. to 4:00 p.m. (EST).

GUIDANCE AND TRAINING:

***Lead in School Drinking Water.*** This manual includes a detailed sampling protocol and in-depth discussions of remedial options available to schools. To obtain a copy, send $3.25 for GPO stock number 055-000-00281-9 to the Superintendent of Documents, U.S. Printing Office, Washington, D.C. 20402.

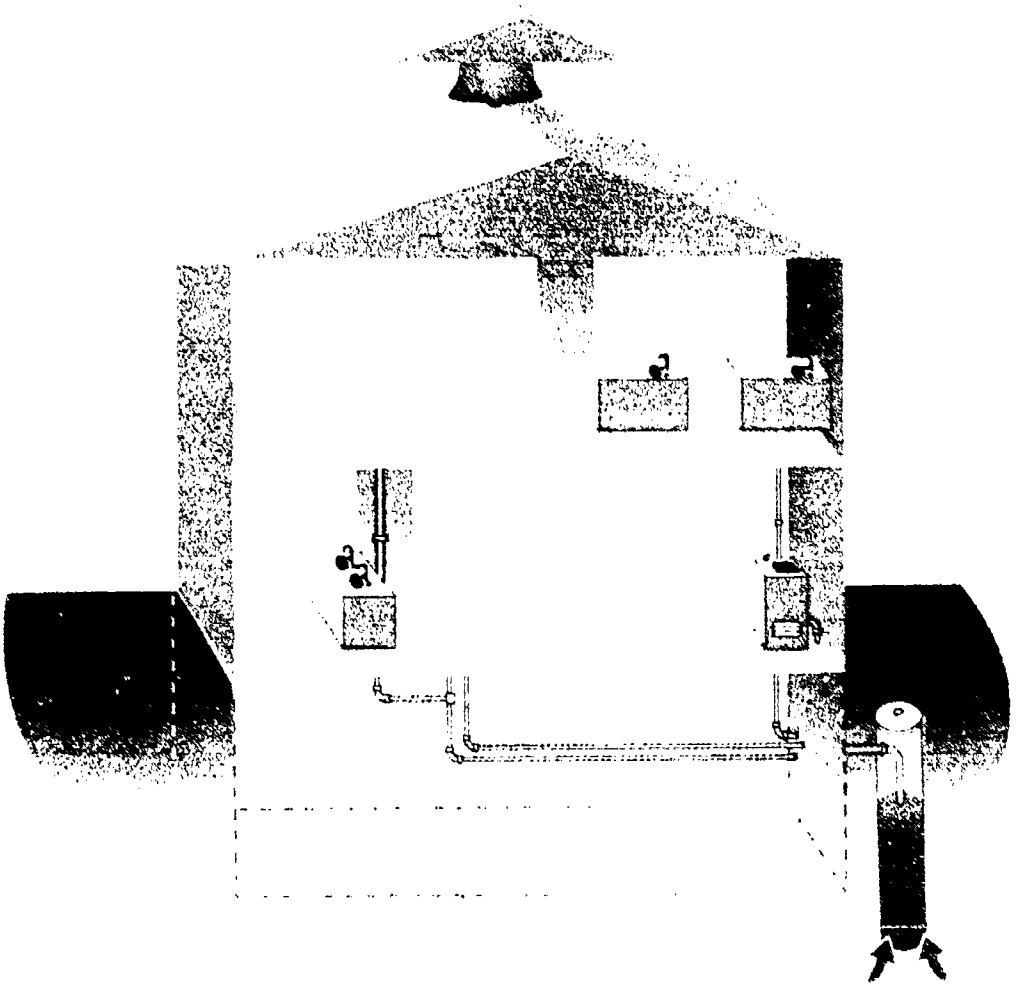
**EPA Training Video, *Lead in School Drinking Water.*** This recently developed one-hour video demonstrates how to carry out a successful sampling program. Contact your regional EPA office to find out how you can get a copy of the video.

PUBLIC INFORMATION MATERIALS:

***Lead and Your Drinking Water.*** This EPA pamphlet explains in simple terms how lead enters the homeowner's drinking water supply and what can be done about it.

Many states have published brochures or pamphlets dealing with lead contamination in drinking water.

# SCHOOL-OPERATED WATER SYSTEMS



## *BACKGROUND*

Approximately 10,000 schools in the United States obtain drinking water from their own well, spring, or small reservoir. The water is not supplied by the local community water system. According to regulations under the Safe Drinking Water Act, such schools are "non-transient non-community" water systems. We refer to them here as "school-operated" water systems. They account for about half of all non-transient, non-community water systems nationwide.

## *WHAT ARE SCHOOL-OPERATED WATER SYSTEMS?*

A school-operated water system is any school with its own individual water supply serving 25 or more of the same people for 4 or more hours per day, 4 or more days per week for 26 or more weeks each year. An example would be a school which has more than 25 teachers and students combined.

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**Volatile Organic Chemicals - Unregulated**

| | |
|---|---|
| Surface Water Systems | - 1 year of quarterly samples representative of each source. |
| Ground Water Systems | - 1 sample per entry point to water system (representative of each well). |
| All Water Systems | - Repeat monitoring once every 5 years. |
| Effective Dates | - Determined by population served the same as regulated Volatile Organic Chemicals. |

**Turbidity** - Sample daily
(Only for Systems Using Surface Water)

**Public Notification Pertaining to Lead**

- Notice must contain mandatory health-effects language and water system-specific information.
- Notice should have been given by June 19, 1988.
- Water supplier must notify persons served by the system:

**NOTIFICATION OPTIONS:**

- Continuous posting for 3 consecutive months, or
- once by mail notice, or
- once by hand delivery, or
- 3 newspaper notices (1 for each of 3 consecutive months).

## GENERAL COMMENTS:

Many new regulations are currently being developed. Contact the appropriate agency in your State for details on your responsibilities as a public water supplier, or call your EPA regional office or the Safe Drinking Water Hotline at 1-800-426-4791.

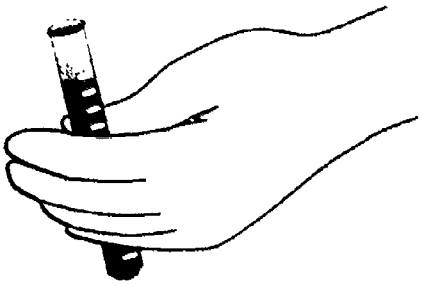
### *WHY DO I HAVE TO DO THIS MONITORING?*

The potential risk of adverse health effects incurred away from home are significant since approximately one-third to one-half of normal daily water consumption occurs at the workplace or at school. These requirements protect non-residential populations that are subject to long-term exposure to contaminants in the water provided at work or at school.

You are required by federal and State law to test your water supply for the contaminants, previously listed, meet the maximum contaminant levels (MCL) for those contaminants, provide public notice if you fail to meet the MCL or monitoring requirements, and perform public notice for lead. By violating these monitoring and public notice requirements, you could face administrative or civil fines of up to $25,000 per day of violation. The most important reason for complying with these regulations is to protect the health of the people at your facility as well as your own health.

### *HOW DO I GET MY WATER SAMPLES TESTED?*

In order to be in compliance with the federal drinking water regulations, a public water system must have its samples analyzed according to a specific set of test methods. In most cases, school-operated water systems do not have their own laboratories. As a result, they must locate and use the services of a State-certified laboratory.



A "State-certified laboratory" is a lab that has met the laboratory certification requirements of the State drinking water program. In other words, they have both the proper analytical equipment and a properly trained staff of people which can be used to analyze your water samples. They know what to do, so let them do it for you. All you need to do is contact an approved lab and they will tell you how they do business. In some cases, the lab will send you the proper bottles and reagents, and provide instructions for taking the samples. In other cases, the lab will send a technician to your facility and take the samples for you. Once the samples are analyzed, the lab will provide you with the results. Then you need to compare the results with both the State and federal requirements to determine compliance.

A certified or approved laboratory can be located rather easily. Start by checking the yellow pages under "water," or "laboratories." If you find a listing for a lab, call and ask them if they are State-certified for drinking water testing. In particular, ask the lab if they are certified to test for the specific contaminants for which you must monitor—not all labs are certified to test for all contaminants; in fact, many specialize in only a few contaminants. You may need to shop around.

If this route is not effective, contact your State drinking water program, and ask for the Laboratory Certification Officer. The certification officer will be able to send you a list of State-certified labs. This list will indicate the location of the laboratories in your State (and possibly other States), and will likely indicate the list of contaminants for which a given lab is certified to test.

If all else fails, call EPA's Safe Drinking Water Hotline and ask for the name and phone number of your State certification officer. The Hotline number is 800-426-4791 or 202-382-5533.

CONTACTS:

Contact your State regulatory agency for State specific information. You can also contact the EPA regional office for your area, or you can call EPA's Safe Drinking Water Hotline at 1-800-426-4791.

# OTHER ENVIRONMENTAL CONCERNS:

## PCBs
## RECYCLING
## UNDERGROUND STORAGE TANKS
## PESTICIDES

## *POLYCHLORINATED BIPHENYLS (PCBs)*

Electrical equipment in use or stored in schools may contain PCBs.

### *WHAT ARE PCBs?*

PCBs are a class of man made chemicals that were widely manufactured and used for many years. The manufacture of PCBs was banned by the EPA in 1979, but many pieces of electrical equipment, including transformers and capacitors, still contain PCBs.

PCBs are not acutely toxic, but exposure to PCBs can produce skin disorders (chloracne), nausea, dizziness, eye irritation, and bronchitis. Ingestion of PCBs can cause liver damage and digestive problems. EPA classifies PCBs as a suspected human carcinogen.

The continuing use and disposal of PCBs is strictly regulated by Toxic Substances Control Act (TSCA) regulations administered by EPA. EPA classifies PCBs as a suspected human carcinogen.

### *WHAT CAN YOU DO TO HELP?*

The most important thing to do is to determine where PCBs are or might be within the school facilities and property. It is wise to maintain a simple inventory of location, condition, and ownership of potential PCB sources.

PCB testing of unknown equipment is not required, nor, in most cases, is the removal of PCB equipment, but school districts may want to develop long-range plans to identify and gradually replace PCB items. Routine inspection and maintenance programs, as well as preventive measures, can reduce risks.

***WHERE CAN YOU TURN FOR HELP?***

EPA's TSCA Information Line at 202-554-1404 can provide copies of the federal PCB regulations and answer questions on many technical and regulatory issues. If you have a question about a specific situation in your school, they will provide the name and number of the PCB Coordinator in your EPA regional office.

Local electrical utilities have experienced workers who are knowledgeable about electrical systems and can clarify ownership issues. They may also be able to provide information on the PCB content of a particular piece of equipment.

Local health departments or districts may be able to provide suggestions on testing of your equipment.

# *RECYCLING*

## *RECYCLE TODAY! EDUCATIONAL MATERIALS FOR GRADES K-12*

The average American throws away more than 1,300 pounds of trash a year. In recent years, a "garbage crisis" has grabbed the attention of the nation and the world. Closing landfills and barges laden with trash have graphically illustrated the problems created by a "throwaway" society. Faced with ever-increasing amounts of garbage and no place to put it all, more and more Americans are recognizing the need for action. Recycling is one important remedy to the garbage problems much of our nation is facing today.

Young people can play an especially important role in solving the garbage gluts of today and tomorrow! School teachers fulfill this role. School Recycling Programs can help students respect the environment, become aware of their impact upon it, and develop positive attitudes and behaviors. Most importantly, by involving youth in recycling activities, they will recognize that each individual **can** make a difference.

PUBLICATIONS.

The Office of Solid Waste has developed a comprehensive educational program "Recycle Today" to promote recycling programs and waste awareness in schools. This program consists of four publications aimed directly at students and teachers.

- *Let's Recycle: A Curriculum for Solid Waste Awareness* presents lessons and activities to teach students in grades K-12 about solid waste generation and management.
- *School Recycling Programs: A Handbook for Educators* describes a number of school recycling program options, along with step-by-step instructions on how to set up a program.

- *Adventures of the Garbage Gremlin: Recycle and Combat a Life of Grime* introduces students in grades 3-8 to the benefits of recycling through a storybook approach. The garbage gremlin appears throughout "Recycle Today" representing the wasteful habits many of us unknowingly perpetuate.

- *Ride the Wave of the Future: Recycle Today* promotes recycling through a colorful poster designed to appeal to all grade levels.

CONTACT:

If you are interested in learning more about OSWs "Recycle Today" program, write to:

U.S. EPA
RIC (OS-305)
401 M Street, S.W.
Washington, D.C. 20460.

## *UNDERGROUND STORAGE TANKS IN SCHOOLS*

Most school systems that operate school buses own Underground Storage Tanks (UST) and must therefore comply with the UST regulations. The Resource Conservation and Recovery Act (RCRA) was amended in 1984 to add subtitle I Regulation of Underground Storage Tanks. The underground storage tank regulations which were issued September 23, 1988 require a tank owner or operator to perform the following steps:

- You must notify the State of the existence of your tank using a standard notification form.
- If you install an UST after December 1988, it must meet the requirements for new USTs concerning correct installation, spill and overfill prevention, corrosion protection, and leak detection.
- If you have an UST that was installed before December 1988, it must meet two major requirements:

  1. Requirements for corrosion protection and spill and overfill prevention

  2. Leak detection requirements

- You must take corrective action in response to leaks.
- You must follow closure requirements for tanks you temporarily or permanently close.
- You are financially responsible for the cost of cleaning up a leak and compensating other people for bodily injury and property damage caused by your leaking UST.

- Contact your State implementing Agency to comply with any State-specific regulations applicable to underground storage tanks.

CONTACT:

If you are interested in learning more about the school system responsiblity you may write for "Must for UST" at:

U.S. Environmental Protection Agency
Office of Underground Storage Tanks (OS-400)
401 M Street, S.W.
Washington, D.C. 20460

# *PESTICIDES*

**Pests in Schools**

Wherever there are people, there are other living things that interfere with people or their property. These organisms may be considered pests, and may be managed or controlled by various means. Preventive measures that modify the site to exclude or reduce hiding and nesting places and food available to pests will provide the most effective long term results. If pest populations get out of hand they may threaten the health of people or damage property. Then other means of control will probably be necessary. Usually this means relying on the use of pesticides to achieve control.

**Pesticides**

Pesticides are tools used to control pests. They are usually produced specifically because they are toxic to something. All pesticides legally sold in the U.S. must bear an EPA-approved label to show that they are registered by the EPA. Pesticides are placed into the environment or a site with the purpose of controlling a specific pest. Careful selection of the pesticide that will achieve the level of control desired, with the least adverse effect is important. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which governs the registration of pesticides, prohibits the use of any pesticide in a manner not in conformance with label restrictions and precautions.

**IPM**

Integrated Pest Management (IPM) is the coordinated use of pest and environmental information with available pest control methods to prevent unacceptable levels of pest damage by the most economical means, and with the least possible hazard to people, property and the environment. The goal of the IPM approach is to manage pests and the environment so as to balance costs.

benefits, public health and environmental quality. IPM systems utilize a high quantity and quality of technical information on the pest and its interaction with the environment (site). Because IPM programs apply a holistic approach to pest management decision-making, they take advantage of all appropriate pest management options, including but not limited to pesticides.

EPA encourages the IPM approach and is working with school officials and others to develop guidance for IPM in schools.

CONTACT: For additional information, please contact:

Mr. William E. Currie
Field Operations Division
Program Communications Branch
(703) 557-5076

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**Other Information Materials:** The Environmental Protection Agency also has informational materials available for educating students in the classroom about the environment. The materials may be obtained by contacting the Public Information Center on (202) 382-2080.

# STATE CONTACT MATRIX*

| State | Region | Asbestos | Lead In Drinking Water |
|---|---|---|---|
| **Alabama** | IV | Alabama Safe State Program<br>(205) 348-7642<br>or<br>(205) 261-7100 | Public Water Systems<br>(205) 271-7700 |
| **Alaska** | IX | Alaska Department of Education<br>(907) 465-2865 | Department of Environmental Conservation<br>(907) 465-2653<br>or<br>Alaska Department of Education<br>(907) 465-2865 |
| **Arizona** | IX | Department of Environmental Quality<br>(602) 257-2285 | Arizona Department of Environmental Quality<br>(602) 257-2201/2209 |
| **Arkansas** | VI | Arkansas Department of Education<br>(501) 682-4261 | Arkansas Department of Health<br>(501) 661-2112 |
| **California** | IX | Office of Local Assistance<br>(916) 445-3377 | Department of Health Services<br>(916) 445-1351 |
| **Colorado** | VIII | Colorado Department of Health<br>(303) 331-8587 | Colorado Dept. of Health<br>(303) 331-4546 |
| **Connecticut** | I | Connecticut Department of Education<br>(203) 566-8204 | Preventable Diseases Division<br>State of Connecticut<br>(203) 566-3186 |
| **Delaware** | III | Department of Administrative Services<br>(302) 736-3611 | Delaware Health and Social Services<br>(302) 736-4700 |

* A directory of individuals and agencies in each state dealing with specific aspects of indoor air quality may be found in the Directory of State Indoor Air Contacts. ...ublications section in the Indoor Air Quality chapter.

# STATE CONTACT MATRIX

| School-Operated Water Systems | Radon |
|---|---|
| Water Supply Branch<br>(205) 271-7773 | Alabama Department of Public Health<br>(205) 261-5315 |
| Department of Environmental Conservation<br>(907) 465-2653 | Alaska Department of Health and Social Services<br>(907) 465-3019 |
| Office of Water Quality<br>(602) 392-4002 | Arizona Radiation Regulatory Agency<br>(602) 255-4845 |
| Arkansas Department of Health<br>(501) 661-2623 | Arkansas Department of Health<br>(501) 661-2301 |
| California Department of Health<br>(916) 323-6111 | California Department of Health Services<br>(415) 540-2134 |
| Colorado Department of Health<br>(303) 331-4546 | Colorado Department of Health<br>(303) 331-4812 |
| Connecticut Department of Health<br>(203) 566-1251 | Connecticut Department of Health Services<br>(203) 566-3122 |
| Office of Sanitary Engineering<br>(302) 736-4731 | Delaware Bureau of Environmental Health<br>(800) 554-4636 |

# STATE CONTACT MATRIX

| State | Region | Asbestos | Lead In Drinking Water |
|---|---|---|---|
| **District of Columbia** | III | D.C. Public Schools<br>(202) 724-4098 | Contact Unavailable<br>At Time of Publication |
| **Florida** | IV | Florida Dept. of Education<br>(904) 487-1130 | Dept. of Health and Rehabilitative Services<br>(904) 487-1321 or<br><br>Department of Environmental Regulation<br>(904) 487-1855 |
| **Georgia** | IV | Department of Education<br>(404) 656-2800<br>or<br>(404) 656-2440 | Georgia Department of Education<br>(404) 656-2440 |
| **Guam** | IX | Guam Environmental Protection Agency<br>(671) 646-8863 | Guam Environmental Protection Agency |
| **Hawaii** | IX | Environmental Protection & Health<br>(808) 548-6455 | Hawaii Department of Health<br>(808) 548-2235 |
| **Idaho** | X | Dept. of Administration<br>(208) 334-3382 | Idaho Department of Education<br>(208) 334-3300 |
| **Illinois** | V | Illinois Department of Public Health<br>(217) 782-3517 | Illinois Department of Public Health<br>(217) 782-5830 |
| **Indiana** | V | Department of Environmental Management<br>(317) 232-8232 | Indiana Department of Environmental Management<br>(317) 240-3220 |

# STATE CONTACT MATRIX

| School-Operated Water Systems | Radon |
|---|---|
| Department of Consumer and Regulatory Affairs<br>(202) 767-7370 | DC Department of Consumer and Regulatory Affairs<br>(202) 727-7728 |
| Department of Environmental Regulation<br>(904) 487-1779 | Department of Health and Rehabilitative Services<br>(904) 488-1525<br>(800) 543-8279 |
| Department of Natural Resources<br>(404) 656-5600 | Georgia Department of Human Resources<br>(404) 894-6644 |
| Guam Environmental Protection Agency | Contact Unavailable At Time of Publication |
| Environmental Protection and Health Services Division<br>(808) 548-4682 | Hawaii Department of Health<br>(808) 548-4383 |
| Idaho Department of Health and Welfare<br>(208) 334-5867 | Idaho Dept. of Health and Welfare<br>(208) 334-5927 |
| Illinois Environmental Protection Agency<br>(217) 785-6653 | Illinois Department of Nuclear Safety<br>(217) 786-6384<br>(217) 786-6399 for "Citizen's Guide" |
| Indiana State Board of ılth<br>) 243-9100 | Indiana State Board of Health<br>(800) 272-9723 (in State)<br>(317) 633-0153 |

# STATE CONTACT MATRIX

| State | Region | Asbestos | Lead In Drinking Water |
|---|---|---|---|
| **Iowa** | VII | Department of Education<br>(515) 281-4743 | Iowa Department of Public Health<br>(515) 281-5605<br>or<br>(515) 281-8220 |
| **Kansas** | VII | Department of Health & Environment<br>(913) 296-1544 | Kansas Department of Health and Environment<br>(913) 296-5503 |
| **Kentucky** | IV | Kentucky Department of Education<br>(502) 564-4326 | Department of Environmental Protection<br>(502) 564-3410 |
| **Louisiana** | VI | Office of Air Quality<br>(504) 342-1209 | Louisiana Department of Health and Hospitals<br>(504) 568-5100 |
| **Maine** | I | Bureau of Public Improvements<br>(207) 289-4511 | Maine Department of Human Services<br>(207) 289-5685 |
| **Maryland** | III | Maryland Dept. of the Environment<br>(301) 631-3851 | State of Maryland Department of the Environment<br>(301) 631-3859 |
| **Massachusetts** | I | MA Dept. of Labor & Industry<br>(617) 969-7177 | Department of Public Health<br>(616) 522-3700 |
| **Michigan** | V | Department of Public Health<br>(517) 335-8246 | Michigan Department of Public Health<br>(517) 335-8326 |
| **Minnesota** | V | Minnesota Department of Education<br>(612) 296-5032 | Minnesota Department of Health<br>(612) 623-5621 |

# STATE CONTACT MATRIX

| School-Operated Water Systems | Radon |
|---|---|
| Iowa Department of Natural Resources<br>(515) 281-6284 | Iowa Department of Public Health<br>(515) 281-7781<br>(800) 383-5992 |
| Kansas Department of Health and the Environment<br>(913) 296-5503 | Kansas Department of Health and Environment<br>(913) 296-1560 |
| Department of Environmental Protection<br>(502) 564-3410 | Dept. of Health Services<br>(502) 564-3700 |
| Louisiana Department of Health and Human Resources<br>(504) 568-5105 | Louisiana Nuclear Energy Division<br>(504) 925-4518 |
| Maine Department of Human Services<br>Augusta, ME 04333 | Maine Department of Human Services<br>(207) 289-3826 |
| Office of Environmental Programs<br>(301) 225-6361 | Maryland Department of Environment<br>(800) 872-3666<br>(301) 631-3300 |
| Department of Environmental Quality Engineering<br>(617) 292-5770 | Massachusetts Department of Public Health<br>(413) 536-7525 or<br>In Boston (617) 727-6214 |
| Michigan Department of Public Health<br>(517) 335-8318 | Michigan Department of Public Health<br>(517) 335-8190 |
| Minnesota Department of Health<br>(612) 623-5330 | Minnesota Department of Health<br>(612) 623-5348 |

# STATE CONTACT MATRIX

| State | Region | Asbestos | Lead In Drinking Water |
|---|---|---|---|
| **Mississippi** | IV | Mississippi State Dept. of Education<br>(601) 359-1028 | Mississippi Department of Health<br>(601) 960-7518 |
| **Missouri** | IV | Health Department<br>(314) 751-6411 | Missouri Dept. of Health<br>(314) 751-6400 |
| **Montana** | VIII | Department of Health & Environmental Sciences<br>(406) 444-3948 | Montana Department of Health<br>(406) 444-2406 |
| **Nebraska** | VII | Nebraska Department of Health<br>(402) 471-2541 | Nebraska Department of Health<br>(402) 471-2541 |
| **Nevada** | IX | Nevada Department of Education<br>(702) 486-6455 | Nevada State Health Division<br>(702) 885-4750 |
| **New Hampshire** | I | Department of Education<br>(603) 271-3620 | New Hampshire Department of Education<br>(603) 271-3144 |
| **New Jersey** | II | New Jersey Department of Health<br>(609) 984-2193 | New Jersey Department of Environmental Protection<br>(609) 292-5550 |
| **New Mexico** | VI | State Department of Education<br>(505) 827-6670 | New Mexico Environmental Improvement Division<br>(505) 827-2778 |

# STATE CONTACT MATRIX

| School-Operated Water Systems | Radon |
|---|---|
| State Board of Health<br>(601) 960-7518 | Mississippi Department of Health<br>(601) 354-6657 |
| Division of Environmental Quality<br>(314) 751-0535 | Missouri Department of Health<br>(800) 669-7236 (in State)<br>(314) 751-6083 |
| Bureau of Water Quality<br>(406) 444-2406 | Montana Department of Health and Environmental Sciences<br>(406) 444-3671 |
| Nebraska Department of Health<br>(402) 471-2674<br>(402) 471-0510 | Nebraska Department of Health<br>(402) 471-2168 |
| Nevada Department of Human Resources<br>(702) 885-4750 | Nevada Department of Human Resources<br>(702) 885-5394 |
| New Hampshire Water Supply and Pollution Control<br>(603) 271-3503 | Division of Public Health Services<br>(603) 271-4674 |
| New Jersey Department of Environmental Protection<br>(609) 984-7945 | New Jersey Department of Environmental Protection<br>(800) 648-0394 (in State)<br>(609) 987-6402 |
| New Mexico Health & Environment Department<br>(505) 827-2778 | New Mexico Environmental Improvement Division<br>(505) 827-2773 |

# STATE CONTACT MATRIX

| State | Region | Asbestos | Lead In Drinking Water |
|---|---|---|---|
| **New York** | II | State Education Department<br>(518) 474-3384 | New York Department of Health<br>(518) 458-6731 |
| **North Carolina** | IV | NC Division of Health<br>(919) 733-0820 | State Health Director<br>(919) 733-2870 |
| **North Dakota** | VIII | Department of Public Instruction<br>(701) 224-2267 | State Department of Health<br>(701) 224-2354 |
| **Ohio** | V | Ohio Department of Health<br>(614) 466-1450 | Ohio Department of Health<br>(614) 644-8811 |
| **Oklahoma** | VI | Oklahoma State Dept. of Health<br>(405) 271-5221 | Oklahoma State Department of Health<br>(405) 271-7352 |
| **Oregon** | X | Oregon Department of Education<br>(503) 378-6964 | Oregon Health Division<br>(503) 229-6302 |
| **Pennsylvania** | III | Department of Education<br>(717) 787-5480 | Department of Environmental Resources<br>(717) 787-9035 |
| **Puerto Rico** | II | Puerto Rico Environmental Quality Board<br>(809) 722-0077 | Department of Health<br>(809) 763-4307 |
| **Rhode Island** | I | Department of Health<br>(401) 277-3601 | Rhode Island Department of Health<br>(401) 277-6867 |

# STATE CONTACT MATRIX

| School-Operated Water Systems | Radon |
|---|---|
| New York Department of Health<br>(518) 458-6731 | New York State Health Department<br>(800) 458-1158 (in State)<br>(518) 458-6450<br>(800) 342-3722 (NYSEO)<br>Training Information |
| Department of Human Resources<br>(919) 733-2321 | North Carolina Department of Human Resources<br>(919) 733-4283 |
| State Department of Health<br>(701) 224-2354 | North Dakota Dept. of Health<br>(701) 224-2348 |
| Ohio Environmental Protection Agency | Ohio Department of Health<br>(800) 523-4439 (in State)<br>(614) 644-2727 |
| Oklahoma State Department of Health<br>(405) 271-5204 | Oklahoma State Dept of Health<br>(405) 271-5221 |
| Department of Human Resources<br>(503) 229-6310 | Oregon State Health Department<br>(503) 229-5797 |
| Department of Environmental Resources<br>(717) 787-9035 | Pennsylvania Department of Environmental Resources<br>(800) 23-RADON (in State)<br>(717) 787-2480 |
| Puerto Rico Department of Health<br>(809) 766-1616 | Puerto Rico Radiological Health Division<br>(809) 767-3563 |
| Rhode Island Department of Health<br>(401) 277-6867 | Rhode Island Department of Health<br>(401) 277-2438 |

# STATE CONTACT MATRIX

| State | Region | Asbestos | Lead In Drinking Water |
|---|---|---|---|
| **South Carolina** | **IV** | SC Dept. of Education<br>(803) 737-8700 | Department of Health and Environmental Control<br>(803) 734-5310 |
| **South Dakota** | **VIII** | Dept. of Water & Natural Resources<br>(605) 773-3153 | South Dakota Department of Water Quality and Natural Resources<br>(605) 773-3754 |
| **Tennessee** | **IV** | Tennessee Department of Education<br>(615) 741-3489 | Tennessee Department of Health and Environment<br>(615) 741-6636 |
| **Texas** | **VI** | Texas Department of Health<br>(512) 458-7254 | Texas Department of Health<br>(512) 458-7497 |
| **Utah** | **VIII** | Department of Health<br>(801) 538-6121 | Utah Department of Health<br>(801) 538-6159 |
| **Vermont** | **I** | Vermont Department of Health<br>(802) 863-7231 | Department of Health<br>(802) 863-7280 |
| **Virginia** | **III** | Department of Education<br>(804) 225-2035 | Virginia Department of Health<br>(804) 786-5566 |
| **Virgin Islands** | **II** | Department of Education<br>(809) 774-2810<br>or<br>Division of Environmental Protection<br>(809) 774-3411 | Department of Planning and Natural Resources<br>(809) 774-3320 |
| **Washington** | **X** | Superintendent of Public Instruction<br>(206) 753-6703 | Department of Social and Health Services<br>(206) 753-9674 |

# STATE CONTACT MATRIX

| School-Operated Water Systems | Radon |
|---|---|
| Department of Health and Environmental Control<br>(803) 734-5310 | South Carolina Dept. of Health and Environmental Control<br>(803) 734-4700/4631 |
| Department of Water and Natural Resources<br>(605) 773-3754 | South Dakota Dept. of Water & Natural Resources<br>(605) 773-3153 |
| Tennessee Department of Health and Environment<br>(615) 741-6636 | Department of Health and Environment<br>(615) 741-4634 |
| Texas Department of Health<br>(512) 458-7497 | Texas Department of Health<br>(512) 835-7000 |
| Utah Department of Health<br>(801) 538-6163 | Utah State Department of Health<br>(801) 538-6734 |
| Vermont Department of Health<br>(802) 863-7220 | Vermont Department of Health<br>(802) 828-2886 |
| Virginia Department of Health<br>(804) 786-1766 | Department of Health<br>(800) 468-0138 (in State)<br>(804) 786-5932 |
| Government of Virgin Islands<br>(809) 774-3320 | Department of Planning and Natural Resources |
| Department of Social and Health SErvices<br>(206) 753-5954 | Washington Office of Radiation Protection<br>(800) 323-9727 (in State)<br>(206) 586-3303 |

# STATE CONTACT MATRIX

| State | Region | Asbestos | Lead In Drinking Water |
|---|---|---|---|
| **West Virginia** | III | West Virginia Department of Education (304) 348-2969 | West Virginia State Department of Health (304) 348-2981 |
| **Wisconsin** | V | Wisconsin Division of Health (603) 266-9337 | Secretary of the Department of Natural Resources (608) 266-2299 |
| **Wyoming** | VIII | Wyoming Dept. of Education (307) 777-7675 | State Superintendent of Public Instruction (307) 777-7673 |
| **American Samoa** | IX | Office of the Governor (809) 774-8315 | American Samoa Environmental Protection Agency |
| **Bureau of Indian Affairs** | | Bureau of Indian Affairs (505) 766-2454 | Contact Unavailable At Time Of Publication |
| **North Mariana Islands** | | Department of Public Health & Environmental Services | Contact Unavailable At Time Of Publication |

# STATE CONTACT MATRIX

| School-Operated Water Systems | Radon |
|---|---|
| State Department of Health<br>(304) 348-2981 | West Virginia Department of Health<br>(304) 348-3526/3427 |
| Bureau of Water Supply<br>(608) 267-7651 | Wisconsin Department of Health and Social Services<br>(608) 273-5180 |
| Department of Environmental Quality<br>(307) 777-7781 | Wyoming Department of Health and Social Services<br>(307) 777-6015 |
| Contact Unavailable At Time Of Publication | Contact Unavailable At Time Of Publication |
| Contact Unavailable At Time Of Publication | Contact Unavailable At Time Of Publication |
| Contact Unavailable At Time Of Publication | Contact Unavailable At Time Of Publication |

# REGIONAL CONTACT MATRIX

| Asbestos | Indoor Air | Lead In Drinking Water |
|---|---|---|
| **Region I** | | |
| U.S. EPA Region I<br>(617) 565-3835 | U.S. EPA Region I<br>(FTS) 8-565-3232<br>(617) 565-3232 | U.S. EPA Region I<br>(617) 565-3835 |
| **Region II** | | |
| U.S. EPA Region II<br>(202) 321-6793 | U.S. EPA - Region II<br>(212) 264-2335<br>(FTS) 264-2335 | U.S. EPA Region II<br>(301) 321-6671 |
| **Region III** | | |
| U.S. EPA Region III<br>(215) 597-3160 | U.S. EPA Region III<br>(FTS) 597-8322<br>(215) 597-8322 | U.S. EPA Region III<br>(215) 597-3160 |
| **Region IV** | | |
| U.S. EPA Region IV<br>(404) 347-5014 | U.S. EPA - Region IV<br>(FTS) 257-2864<br>(404) 347-2864 | U.S. EPA Region IV<br>(404) 347-5014 |
| **Region V** | | |
| EPA, Region V<br>(312) 886-6003 | U.S. EPA - Region V<br>(FTS) 886-6054<br>(312) 886-6054 | EPA Region V<br>(312) 886-6003 |

# REGIONAL CONTACT MATRIX

| School-Operated Water Systems | PCBs | Radon |
|---|---|---|
| Water Supply Branch<br>U.S. EPA Region I<br>(FTS) 8-835-3669<br>(617) 565-3665 | Pesticides & Toxics Branch<br>U.S. EPA Region I<br>(FTS) 835-3279 | U.S. EPA Region I<br>(617) 835-3234 |
| Drinking/Ground Water Protection Branch<br>U.S. EPA Region II<br>(FTS) 264-4448<br>(212) 264-4448 | Pesticides & Toxics Branch<br>U.S. EPA Region II<br>(FTS) 340-8682 | U.S EPA Region II<br>(212) 264-4418 |
| Drinking Water/Ground Water Protection Branch<br>U.S. EPA Region III<br>(215) 597-3427 | U.S. EPA Region III<br>(FTS) 597-7668 | U.S. EPA Region III<br>(215) 597-4084 |
| Drinking Water Branch<br>U.S. EPA Region IV<br>(FTS) 257-2913<br>(404) 347-2913 | Toxics and Pesticides Branch<br>U.S. EPA Region IV<br>(FTS) 257-3864 | Office of Radiation<br>(404) 347-3907 |
| Safe Drinking Water Branch<br>U.S. EPA Region V<br>(FTS) 886-9546<br>(312) 886-9546 | Pesticides & Toxics Branch<br>U.S. EPA Region V<br>(FTS) 886-6087 | U.S. EPA Region V<br>Air and Radiation Branch<br>(312) 886-6175 |

# REGIONAL CONTACT MATRIX

| Asbestos | Indoor Air | Lead In Drinking Water |
|---|---|---|
| **Region VI** | | |
| EPA, Region VI<br>(214) 655-7244 | U.S. EPA - Region VI<br>(FTS) 255-7214<br>(214) 655-7214 | EPA Region VI<br>(214) 655-7244 |
| **Region VII** | | |
| EPA, Region VII<br>(913) 551-7381 | U.S. EPA - Region VII<br>(FTS) 757-2893<br>(913) 236-2893 | EPA Region VII<br>(913) 236-2835 |
| **Region VIII** | | |
| EPA, Region VIII, (8AT-TS)<br>(303) 293-1442 | U.S. EPA - Region VIII<br>(FTS) 564-1769<br>(303) 293-1769 | EPA Region VIII<br>(303) 293-1744 |
| **Region IX** | | |
| EPA, Region IX<br>(415) 556-5406 | U.S. EPA - Region IX<br>(FTS) 454-8381<br>(415) 974-8381 | EPA Region X<br>(415) 974-7290 |
| **Region X** | | |
| EPA, Region X<br>(202) 442-4762 | U.S. EPA - Region X<br>(FTS) 399-2589<br>(206) 442-2509 | EPA Region X<br>(206) 442-4762 |

# REGIONAL CONTACT MATRIX

| School-Operated Water Systems | PCBs | Radon |
|---|---|---|
| Water Supply Branch<br>U.S. EPA Region VI<br>(FTS) 255-7155<br>(214) 655-7155 | Pesticides & Toxic Substances Branch<br>U.S. EPA Region VI<br>(FTS) 255-6719 | U.S. EPA Region VI<br>(214) 655-7208 |
| Drinking Water Branch<br>U.S. EPA - Region VII<br>(FTS) 757-2815<br>(913) 236-2815 | Pesticides and Toxics Branch<br>U.S. EPA Region VII<br>(FTS) 757-2835 | U.S. EPA Region VII<br>(913) 236-2893 |
| Drinking Water Branch<br>U.S. EPA - Region VIII<br>(FTS) 564-1424<br>(303) 293-1424 | Toxic Substances Branch<br>U.S. EPA Region VIII<br>(FTS) 564-1738 | U.S. EPA Region VIII<br>(303) 293-1713 |
| Drinking Water Branch<br>U.S. EPA Region IX<br>(FTS) 454-0912<br>(415) 974-0912 | Pesticides and Toxics Branch<br>U.S. EPA Region IX<br>FTS 454-7346 | U.S. EPA Region IX<br>(415) 974-8378 |
| Drinking Water Branch<br>U.S. EPA Region X<br>(FTS) 442-4092<br>(206) 442-4092 | Pesticides and Toxics Branch<br>U.S. EPA Region X<br>(FTS) 399-4153 | U.S. EPA Region X<br>(206) 442-7660 |

United States
Environmental Protection
Agency
(TS-799)
Washington, DC 20460

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