Chapter 4. Lead in and around the Home: Identifying and Managing its Sources

Why should you be concerned?
Lead poisoning is a serious but preventable health problem. Many public health experts consider it the No. 1 children’s environmental health problem in the United States. Many homes have one or more sources of lead. According to data from the National Health and Nutrition Examination Survey (1999-2000), an estimated 434,000 children ages 1 to 5 years had blood lead levels of greater than or equal to 10 micrograms per deciliter (μg/dL) at a given time. The chief suspect is lead-based paint dust in older homes. Families can also be exposed to lead from other sources.

Lead is a soft metal that has been used in ammunition, ceramics, printer’s ink, children’s toys, solder, paint, coins, leaded crystal, water pipes and gasoline, and for many other purposes. Lead is dangerous because it is so widely used and lasts for hundreds of years in the environment. It never breaks down into a harmless substance. You can take steps to reduce your exposure to lead, but you cannot completely avoid it. Reducing exposure is especially important for children.

Depending on the level, lead can have wide-ranging effects in humans. Even very low lead levels in children can slow or stop mental development and cause learning and behavioral problems. Lead can also cause high blood pressure. Higher levels may cause damage to the nervous system and the reproductive system. Sadly, the effects of lead poisoning are often not reversible.

Where are the lead sources in and around the home?
The most common sources of lead are deteriorating lead-based paint, household dust (which can contain lead dust from deteriorating lead-based paint or remodeling), soils contaminated by leaded paint or leaded gasoline exhaust, and drinking water delivered through lead pipes or in contact with lead solder or some brass faucets. Over the years, lead has been eliminated by law in residential paint, gasoline, solder and water pipes. However, many older homes contain lead paint, and even newer homes can contain lead from other sources. Unlike many chemicals, lead does not break down and can remain for long periods in paints, dusts and soil.
Part 1 – Identifying Lead Sources Inside the Home

Identifying and controlling sources of lead in and around your home is an important responsibility. To determine potential risks from sources inside your home, complete the assessment at the end of this section. The information below will help you answer the assessment questions.

When was your home built?
According to the U.S. Department of Housing and Urban Development, 74 percent of all homes built before 1980 contain potentially dangerous levels of lead paint. Although lead has been banned from house paint since 1978, the majority of U.S. homes were built before then. Homes built before 1950 are very likely to have high lead levels, especially in paint used on windows and exterior surfaces. Levels as high as 25 to 35 percent lead by weight are common. Some pre-1950 paint was 50 percent lead.

Does your interior paint contain lead? What is its condition?
Lead-based paint is the most common source of lead exposure for children. Most exposure, however, comes from contact with contaminated household dust rather than eating paint chips. As paint ages or as painted surfaces rub against each other, lead-containing dust is created. If your lead-based paint is perfectly intact, then the potential risk of ingestion is greatly reduced. But if paint is cracking, chipping, flaking or being rubbed by contact, the danger of lead exposure is much higher.

Testing for lead
In Michigan, two types of lead identification can be done on homes: a lead inspection and a risk assessment. The inspection will look for how much lead is in interior and exterior paint. The assessment will determine the lead dangers in and outside the house and how to reduce them.

To find out if your paint contains lead – and if so, how much – have it analyzed by experts who test samples in a laboratory or who examine paint on-site using a portable X-ray fluorescence (XRF) detector. Surface wipe samples, which are used to test dust for lead contamination, may be taken by lead professionals and sent to a lab for analysis. Some laboratories may analyze surface wipe samples collected by the homeowner. Do-it-yourself home test kits are available in stores. They indicate the presence or absence of lead but do not indicate how much lead is present. Home test kits may not be reliable for testing surfaces in your home; it is best to have such tests done by a professional. Check with local health officials or the Michigan Department of Community Health’s website at www.michigan.gov/leadsafe.
If you find lead…
Remodeling or renovating in areas having lead-based paint is especially risky. Scraping, sanding or burning lead-based paint creates extremely hazardous conditions, and strict precautions need to be taken – especially if children, pregnant women or pets are present. If possible, homeowners should use the services of a certified lead-abatement contractor. Certified Michigan lead service providers can be found at the LeadSafe website, or by calling the Department of Community Health Lead Program toll-free at 1-866-691-5323. Paint removal, replacement of lead-painted parts (such as windows, door jambs and moldings), liquid encapsulants (special paint-like products that cover a surface) and removal of leaded surfaces are some of the options for dealing with lead paint. Lead-based paint removal by untrained workers who do not use the proper methods and equipment can create a much greater health hazard than just leaving the paint alone.

Is there lead paint on windows and door frames? What is their condition?
Paints with higher lead levels were used where exposure to moisture was greatest: windows, doors and exterior walls. If high lead-based paint is intact, it poses little risk. If it is chipping or chalking off or is scraped or sanded during repairs, then the risk of exposure is great. Lead dust, most dangerous to kids and pets, is likely to come from weathering (chalking) paint and especially from surfaces that bang or slide together, such as doors and windows (Figure 1).

Safety note
If you’re planning to do any remodeling yourself, you should become knowledgeable about lead paint. Contact the National Lead Information Center (NLIC) at 1-800-424-LEAD. Many communities offer “Lead Safe Work Practices,” an 8-hour training program through the U.S. Department of Housing and Urban Development and the U.S. Environmental Protection Agency (EPA). A do-it-yourself guide to lead-safe painting, repair and home improvement may be obtained online at www.michigan.gov/mdch. Enter “Don’t Spread Lead” in the search bar. You may also want to contact local landfills about what remodeling wastes they accept and if they have special requirements for lead-contaminated waste from the home.

Figure 1: High friction areas, such as inside window frames, are likely sources of lead dust, which falls to the sill and floor.
How else can lead enter the home?

In consumer products—Lead is present in such products as lead-crystal glassware and leaded wine bottle neck wraps made before 1990. It may also be in some foreign-made products such as toys, miniblinds, chalk, crayons, ceramics and food cans (which may be made with lead solder). Although lead is now less common in printing inks, it may be present in food packaging labels and newspaper print.

From the workplace—Do you work in construction, bridge building, sandblasting, shipbuilding, plumbing, battery manufacturing, auto radiator repair, furniture refinishing or foundry casting? If so, leaded dust from your worksite can be carried into your home on your clothing, skin and hair. Workers exposed to leaded dust should shower and change clothes before entering the home.

In hobby and recreation supplies—If your hobbies include stained glass, furniture refinishing, pottery (using lead glazes), or collecting pewter or lead figurines, you may be exposing yourself and others to lead. Hunters and anglers who use or make lead bullets and lead sinkers also come in contact with lead. Exposure can also occur at indoor firing ranges.

In ethnic medicinals or cosmetics—Various Hispanic and Asian communities utilize mixtures that contain high levels of lead. Some stomach preparations are quite toxic.

Is your drinking water lead-free?

Although your drinking water is not usually a concentrated lead source like paint or soil, it can still pose risks to your family. Lead can enter your water from several points: lead pipes that bring water to the home, lead pipe connectors, lead-soldered joints in copper plumbing, and lead-containing brass faucets and pump components. In some private wells, underwater pumps with brass fittings can cause elevated lead concentrations in drinking water, especially with new pumps or if the water is soft (lacking calcium or magnesium minerals). Water that is soft or acidic (less than pH 7) can be corrosive and dissolve lead from pipes and fittings more easily. Lead solder with more than .2 percent lead and faucets and other plumbing features with more than 8 percent lead were banned in the United States in 1987. Buildings had to be built with certified “lead-free” (less than 8 percent) fixtures after August 1998. Home water softeners, though they do have benefits, may increase the amount of lead leached into your drinking water if lead is present in your water system.

What can you do to minimize lead in your water?

Water testing will show if lead is present in your water and whether your water is “aggressive” (acidic or soft). This is a special test, not part of the partial chemical test. Contact a state-certified laboratory or health agency for instructions on how to take a lead water sample. To find a certified lab near you, go to www.deq.state.mi.us/documents/deq-ead-tas-labs-michlabs.pdf. If lead levels are greater than 15 parts per billion (ppb), action is recommended.

A simple way to reduce lead concentrations is to flush your plumbing system. You must, however, test a sample from flushed water to be sure that it is below the lead level of 15 ppb. If your water system has not been used for more than four hours, flush the system by letting cold water run for a minute or two before using it for drinking or cooking.

Also, always use cold tap water for cooking and drinking; hot water is more likely to release lead if present in the plumbing system. Never use water with high lead levels (over 15 ppb) to mix infant formula. For severe lead contamination, you may need to install a water treatment device, such as a figure 2: using bottled water for drinking and cooking is one option for dealing with lead-contaminated water.
reverse osmosis system, a distillation system or an activated carbon filter. Buying bottled water for drinking and cooking may be the easiest and least expensive option for dealing with severe lead contamination (Figure 2). Be aware, however, that bottled water is not necessarily lead-free. Water treated by distillation or reverse osmosis is usually best. Call or write to the company and request a copy of its most recent water test results.

✔ Assessment 1 – Identifying Lead Sources
Inside the Home

Use this assessment to rate your lead-related indoor health risks. For each question, indicate your risk level (low, medium or high) in the right-hand column. Although some choices may not correspond exactly to your situation, choose the response that best fits. Refer to the information in Part 1 if you need help completing the assessment.

<table>
<thead>
<tr>
<th>Low risk/ recommended</th>
<th>Medium risk/ potential hazard</th>
<th>High risk/ unsafe situation</th>
<th>Your risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior paint</td>
<td>No lead-based paint.</td>
<td>Lead-based paint present but intact.</td>
<td>Deteriorating lead-based paint: it is chipping, peeling or chalking, or recent remodeling has disturbed the paint.</td>
</tr>
<tr>
<td>Windows and doors</td>
<td>No lead-based paint. Windows and doors with lead-based paint have been replaced.</td>
<td>Lead-based paint present but intact. Friction and impact areas tested negative for lead.</td>
<td>Deteriorating lead-based paint: it is chipping, peeling or chalking, or recent remodeling has disturbed the paint.</td>
</tr>
<tr>
<td>Water supply</td>
<td>No lead water pipes, leaded solder or brass fixtures used in plumbing.</td>
<td>Lead present in plumbing, but water has been tested and precautions have been taken.</td>
<td>Lead likely to be present in plumbing, but water has not been tested and no precautions have been taken.</td>
</tr>
<tr>
<td>Water acidity or corrosiveness</td>
<td>Hardness is near 80 milligrams per liter (mg/L). pH = 7.5 to 8.5</td>
<td>Hardness is 60-80 mg/L. pH = 6 to 7.5</td>
<td>Hardness is 60 mg/L or less. pH = less than 6</td>
</tr>
</tbody>
</table>

*A boxed risk level indicates level required for Residential Environmental Assurance Program certification.

Responding to risks
Your goal is to lower your risks. Turn to the Action Checklist at the end of this chapter to record the medium and high risks you identified. Plan actions to help you reduce your risks.
Part 2 – Identifying Lead Sources Outside the Home

Is your family tracking lead into the home?
The soil around your home can be a significant source of lead exposure, and levels tend to be highest where house walls meet the ground (Figure 3). Lead-contaminated soil is a problem when children play outdoors, soil is tracked inside the home by people and pets, and vegetables are grown in contaminated soil. Soils may be contaminated by flaking, peeling or chalking lead-based paint that follows the drip line of the house.

In high-traffic areas, leaded gasoline exhaust has been responsible for high levels of lead in soil, with levels highest near major roadways. The shift to unleaded gasoline has reduced this risk, but after years of contamination, lead levels can still be high in the soil.

If you live near industrial sources such as incinerators, lead smelters and battery recyclers, you should be concerned about lead in your soil. Urban residents should consider having their soil tested before planting a vegetable garden.

What can soil tests reveal?
Testing your soil is the only way to detect a lead problem. To take samples yourself, contact a laboratory participating in the National Lead Laboratory Accreditation Program, or hire a Michigan certified lead risk assessor to take and submit a sample. You can also get your soil tested through a few local health departments and Michigan State University Extension offices for a fee. If high lead levels are found, there are several steps you can take. Planting grass or covering soil with mulch can keep your family from tracking the soil indoors. In some cases, removal and replacement of heavily contaminated topsoil may be recommended.

What level is safe?
Lead exists naturally in soils. It is recommended that children and pregnant women avoid soils with lead levels above 300 parts per million (ppm). If you’re planting a garden in soils with levels above 300 ppm, information is available for gardening practices (see additional resources at the end of this chapter).

Lead levels in soil near busy roadways are typically 30 to 2,000 ppm higher than natural levels. Soils adjacent to houses with leaded exterior paint are likely to have higher lead levels. Levels near industrial sources can be dangerously high, especially in downwind areas. Old orchards may also have high lead levels due to lead-containing pesticides applied in the 1940s and 1950s.
Assessment 2 – Identifying Lead Sources Outside the Home

Use the following assessment to rate your health risks due to lead outdoors. For each question, indicate your risk level (low, medium or high) in the right-hand column. Although some choices may not correspond exactly to your situation, choose the response that best fits. Refer to the information in Part 2 if you need help completing the assessment.

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Low Risk/Recommended</th>
<th>Medium Risk/Potential Hazard</th>
<th>High Risk/Unsafe Situation</th>
<th>Your Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead-based paint on exterior of house</td>
<td>No lead-based paint, or it is present but intact. No bare soil around all sides of the house.</td>
<td>Lead-based paint is weathered or chalking. There is lead-based paint in the soil around the home, but no foot traffic.</td>
<td>Lead-based paint is chipping, peeling or chalking. There is bare soil and foot traffic below painted walls.</td>
<td></td>
</tr>
<tr>
<td>Major roadways</td>
<td>No major roadway nearby.</td>
<td></td>
<td></td>
<td>Major roadway within 85 feet.</td>
</tr>
<tr>
<td>Lead-related industry</td>
<td>No lead-related industry or incinerators in the area.</td>
<td>Lead-related industry previously in area.</td>
<td>Lead smelter, battery manufacturer or recycler, or other lead-related industry nearby.</td>
<td></td>
</tr>
<tr>
<td>Lead in soil</td>
<td>Soil tested to detect lead. Shoes taken off upon entering house and track mats used at house entrance.</td>
<td>No soil test conducted. Shoes taken off upon entering house and track mats used at house entrance.</td>
<td>No soil test conducted. No precautions taken to ensure lead-contaminated soil is not tracked inside.</td>
<td></td>
</tr>
</tbody>
</table>

A boxed risk level indicates level required for Residential Environmental Assurance Program certification.

Responding to risks
Your goal is to lower your risks. Turn to the Action Checklist at the end of this chapter to record medium and high risks you identified. Plan actions to help reduce your risks.

Part 3 – Health Effects of Lead on Children

Have children who live in or frequently visit your home been tested for lead?
Children 6 years old and younger are much more likely to be affected by lead than adults. They are more likely to ingest lead paint, dust and soil because they naturally engage in hand-to-mouth activities. Children are also at greatest risk from lead because their bodies are developing, and they absorb up to 50 percent of the lead they ingest. Adults absorb only about 10 percent.
Most children with lead poisoning do not show visible symptoms, but all have some degree of damage to the brain and nervous system. A blood test is the only way to detect the problem (Figure 4). At higher levels of poisoning, symptoms may include tiredness, a short attention span, restlessness, poor appetite, constipation, headache, sudden behavior change, vomiting and hearing loss. Many of these symptoms may be mistaken for other illnesses.

Lead is widespread in our environment, so it is almost impossible to have a zero level in the blood. Lead levels are measured in micrograms per deciliter (μg/dL) of blood. Levels of 10 μg/dL or higher are considered elevated in children and are of medical concern.

✔ Assessment 3 – Health Effects of Lead in Children

Use this assessment to rate your children’s health risks due to lead. Indicate the risk level in the right-hand column. Refer to the information above if you need help completing the assessment.

<table>
<thead>
<tr>
<th>Low risk/recommended</th>
<th>Medium risk/potential hazard</th>
<th>High risk/unsafe situation</th>
<th>Your risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>If home built before 1978</strong></td>
<td>Children under 6 years, living in or frequently at the home have lead blood test.</td>
<td>Children under 6 years of age in or often at the home not tested.</td>
<td></td>
</tr>
<tr>
<td><strong>Blood test results in children</strong></td>
<td>Blood lead level is under 5 μg/dL.</td>
<td>Blood lead level is 5 to 9 μg/dL.</td>
<td>Blood lead level is 10 μg/dL or higher.</td>
</tr>
</tbody>
</table>

A boxed risk level indicates level required for Residential Environmental Assurance Program certification.

Responding to risks
Your goal is to lower your risks. Turn to the Action Checklist at the end of this chapter to record the medium and high risks you identified. Plan actions to help reduce your risks.

Part 4 – Living Safely With Lead

What are some safe cleaning practices you can use to reduce your risk of lead exposure?
The first step to making your home a lead-safe environment is purchasing the correct supplies you need. You may already have some of these items at home, but make sure to get latex gloves, absorbent wipes, garbage bags, a spray bottle, liquid detergent, disposable towels and a mop. A final item to obtain is a high efficiency particulate air (HEPA) vacuum, which can in some cases be obtained from your local health department. Please note: a regular vacuum is not recommended because it will not capture lead dust.

A HEPA vacuum has a high efficiency particulate air filter built in that catches fine lead dust. This filter catches up to 99 percent of the dust and dirt sucked into the vacuum. The HEPA vacuum should meet American National Standards Institute (ANSI) Z9.2 standards and Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) regulations.
Check the vacuum owner’s manual before using, and do not open or change the bag or empty any contents inside your home.

**Inside the home**

After obtaining a HEPA vacuum, use this vacuum on windows, floors and porches. Follow this step by lightly misting with a soap solution. If a HEPA vacuum is not available, carefully remove dirt and paint chips with a wet disposable towel, put it in a plastic bag and put it in the trash. Replace towels until the surface is clean. Wipe surfaces clean by applying pressure. This has been proven to be effective in removing lead dust. Misting with the soap solution and then wiping with towels is a key step. During this cleaning process, you should also keep windows closed until the cause of the dust hazard is removed. If windows must be opened, restrict children from touching window parts. Remove loose paint from the trough area, repaint and cover the trough with metal or plastic. Install jam liners and sash kit, while replacing stops. Additionally, any replacement of windows that occurs should be conducted by a Michigan certified abatement company. Contact your local county health department for more information about lead abatement and financial assistance options, or visit the Michigan Department of Community Health lead website (see “Resources” at the end of this chapter). Encapsulant paint can be used but only on frictionless surfaces.

When working with doors, many of the same steps above should be used. The key is to eliminate all friction points. Install felt liner on door stops and scrape and repaint the door. Rehang the door with new hardware if needed to eliminate further friction and/or impact problems. Again, if you are replacing a large item such as a door, make sure to have this done by a certified abatement company.

When working in storage areas, make note of places used to prepare or eat food. If lead painted shelving or cabinets are used for food, cooking or eating utensils, linen or clothing, remove and clean these items and store in a safe area until the hazardous lead area has been treated. Replace, repaint and line all surfaces with vinyl, plastic or a similar covering. Adjust doors, hinges and other hardware to further eliminate friction or impact.

For floors, damp mop vinyl and wood flooring with paper towels and a soap solution. Start at the back of the room and work toward the exit door. You will want to change towels often until no paint chips or dirt can be seen. Place them in a garbage bag, and seal with a tape or a knot. The bag can be put out for normal trash pickup.

**Outside the home**

When working on the outside of the home, put a tarpaulin down to catch paint chips, wet painted surfaces to be scraped, remove loose paint on siding, trim, railings and posts, and repaint. When the source of lead is deterioration, remove loose paint and seal off the damaged area. The best scenario is to replace the damaged component. This should be done by a certified abatement company. The next best thing would be to repaint.

If swings, sandboxes or other children’s objects are in the contamination or work area, relocate them to another area of the yard where ground cover is in good condition. Instruct your children not to dig or play in the leaded soil. The best-case scenario would be to remove soil to a depth of 6 inches and backfill to the original ground height using non-leaded soil, then seed or sod the site.

**Figure 5:** If possible, replace lead-containing items with new. Remember to use lead-safe work practices.
Assessment 4 – Safe Cleaning and Care Practices

Use the following assessment to rate your cleaning and management practices inside and outside the home. Indicate the risk level in the right-hand column. Refer to the information in part 4 if you need help completing the assessment.

<table>
<thead>
<tr>
<th></th>
<th>Low risk/recommended</th>
<th>Medium risk/potential hazard</th>
<th>High risk/unsafe situation</th>
<th>Your risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vacuum used for lead-safe cleaning</strong></td>
<td>Use a HEPA vacuum for cleaning.</td>
<td>Use a regular vacuum for cleaning.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Window areas</strong></td>
<td>All surfaces wet wiped; paint chips removed and window areas repainted.</td>
<td>Paint chips removed; windows kept closed.</td>
<td>Paint chips left on window area; window kept open.</td>
<td></td>
</tr>
<tr>
<td><strong>Door areas</strong></td>
<td>Friction and impact points eliminated; felt liners installed; door wetted, scraped and repainted.</td>
<td>Paint chips removed safely.</td>
<td>Paint on door is chipping and not removed.</td>
<td></td>
</tr>
<tr>
<td><strong>Storage areas</strong> (shelving, cabinets, closets)</td>
<td>Items used for food are stored in lead-free area; friction/impact points eliminated; surfaces repainted and relined with a vinyl or plastic covering.</td>
<td>Items used for food are stored in non-leaded area; surfaces not repainted and relined.</td>
<td>Items used for food remain in lead-contaminated area; surfaces not repainted or relined.</td>
<td></td>
</tr>
<tr>
<td><strong>Disposal techniques</strong></td>
<td>Cleaning towels changed often; all cleaning items placed in sealed garbage bag and put out in trash.</td>
<td></td>
<td>Towels reused or cleaning items left in open trash.</td>
<td></td>
</tr>
<tr>
<td><strong>Outside siding, trim and fixture areas of the home</strong></td>
<td>Loose paint removed; deteriorated items removed and replaced.</td>
<td>Paint chips removed; deteriorated items repainted or sealed off with vinyl or plastic coverings.</td>
<td>Loose paint chips remain.</td>
<td></td>
</tr>
<tr>
<td><strong>Soil outside of home</strong></td>
<td>Children’s play equipment moved onto area with ground cover; bare soil roto-tilled and reseeded or sodded.</td>
<td>Children’s play equipment moved onto area with ground cover; bare soil remains.</td>
<td>Bare, lead-contaminated soil in play area.</td>
<td></td>
</tr>
</tbody>
</table>

Responding to risks

Your goal is to lower your risks. Turn to the Action Checklist at the end of this chapter to record medium and high risks you identified. Plan actions to help reduce your risks.
✔ Action Checklist

Go back over the assessments and look for all medium and high risks you identified. Write them below. For each item listed, write down the improvements you plan to make. Use recommendations from this chapter and other resources to decide on actions you are likely to complete. A target date will keep you on schedule. You don’t have to do everything at once, but try to eliminate the most serious problems as soon as you can. Often it helps to tackle the inexpensive and/or less time-intensive actions first.

<table>
<thead>
<tr>
<th>Write all high and medium risks here.</th>
<th>What can you do to reduce the risk?</th>
<th>Target date for action:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: House was built in 1935. Paint has not been tested for lead.</td>
<td>Arrange for lead risk assessment of the paint. Test for lead dust.</td>
<td>One week from today: April 3</td>
</tr>
</tbody>
</table>

Resources

**Blood tests**
Contact your family physician, pediatrician or public health clinics.

**Testing of paint samples and drinking water**
Contact your local health department (offered only by a few) or private testing laboratories.
Certified water testing laboratories: www.deq.state.mi.us/documents/deq-ea-d-tas-labs-michlabs.pdf
Approved lead laboratories: www.michigan.gov/leadsafe
Certified Michigan lead service providers: www.michigan.gov/leadsafe or call toll-free 1-866-691-5323.

**Educational information for parents and others**
Contact your county’s Michigan State University Extension office.
National Lead Information Center
To order a packet of material about lead, including information specific to your state and locality, call the center toll-free at 1-800-LEAD-FYI. For personal assistance on a lead-related question, call 1-800-424-LEAD.

Poison Control Centers
DeVos Regional Poison Control Center, Grand Rapids, Mich. Call toll-free at 1-800-222-1222.

Other useful websites
www.hud.gov/lead
www.epa.gov/lead
www.cdc.gov/lead

Publications


“Lead in Your Drinking Water: Actions You Can Take to Reduce Lead in Drinking Water.” At www.epa.gov/safewater/lead/lead1.html


“Soil Lead Levels.” University of Massachusetts, Amherst, Department of Plant and Soil Sciences, Soil and Plant Tissue Testing Laboratory. www.umass.edu/plsoils/soiltest/lead1.htm

This Home*A*Syst chapter covers a variety of topics to help homeowners examine and address their most important environmental concerns. See the complete list of chapters in the table of contents at the beginning of this handbook. For more information about topics covered in Home*A*Syst or for information about laws and regulations specific to your area, contact the Michigan Groundwater Stewardship Program (MGSP) at 517-241-2154.

This chapter was written by Karen Filchak, Extension educator, University of Connecticut Cooperative Extension, Brooklyn, Conn. Revised with permission from the author and adapted for Michigan in 2008.