United States Environmental Protection Agency

EPA Adds new site to the Superfund List

Wilcox Oil Company Site
Bristow, Creek County, Oklahoma **Date 2013**

ODEQ logo here

This fact sheet will tell you about:

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- **The NPL**
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What is Superfund?

Briefly, Superfund is the federal government's program to clean up the nation's uncontrolled hazardous waste sites.

Superfund is also the name given to the environmental program established to address abandoned hazardous waste sites. It is also the name of the fund established by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986.

CERCLA is the law that allows the U.S. Environmental Protection Agency (EPA) to clean up such sites and to compel responsible parties to perform cleanups or reimburse the government for EPA-lead cleanups. This law authorizes EPA to conduct two kinds of response actions:

- Short-term removals
- Long-Term remedial response actions
- If you need to add more (to enforce against PRPs, to involve states, to ensure community involvement, to ensure long term protectiveness. Today, over 40,000 sites had been evaluated in the nation over the past 20+ years. Many requiring no further response actions.

The NPL

The National Priorities List or NPL, is a list of top priority sites to be addressed through the Superfund Law. Initially 406 sites were listed when established in 1983, currently over 1685 sites have been indentified and added to the list, while the EPA and the states continues to evaluate potential future sites. With the current rulemaking announcement the EPA is adding the Wilcox Oil Refinery to this list.

The Superfund Process

The Superfund cleanup process begins with site discovery or notification to EPA of possible releases of hazardous substances. Sites are discovered by various parties, including citizens, State agencies, and EPA Regional offices. EPA then evaluates the

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potential for a release of hazardous substances from the site through a step-by-step process that include site assessments, site inspections, and evaluation through a ranking process to identify those sites that merit to be added to the list of top priorities, the NPL. Once on this list, EPA determines the best way to clean up the site and protect human health and the environment. Opportunities for community involvement occur throughout the process, which is shown in the graphic attached to this fact sheet.

The Wilcox Refinery site

Wilcox Oil Company is an inactive and abandoned oil refinery located in Creek County, Oklahoma. The site consists of contaminated areas and surface water bodies due to releases from the former Lorraine and former Wilcox Refineries that operated from mid 1920s to early 1960s. The location of the releases from the two refineries are considered to be a single site composed of a commingled release and covers approximately 125 acres.

Major operational areas include the former Wilcox Oil Refinery, the Lorraine Refinery and the product storage area (tank farm). Contaminants of concerns on site contain elevated concentrations of metals and organic compounds in the former storage tank areas, surface soils, surface impoundment and sediments. Elevated levels of metals were also detected in three private residential wells on site, and from three wells adjacent to the property.

Current status

The EPA works as a lead agency in coordination with the Oklahoma Department of Environmental Quality (ODEQ) as a support agency to conduct the Superfund step-by-step process. At this times the following actions have been completed:

Activities completed

A Preliminary Assessment conducted by ODEQ in 2008.
A Site Inspection conducted by ODEQ in 2009.
An Expanded Site Inspection conducted by ODEQ in 2011.
A Hazard Ranking System package completed by EPA in May 2013.
Proposal to the NPL on _____
Added to the NPL on _____

What happens next

EPA is currently searching for Potential Responsible Parties (PRP(s)).

A major goal of the Superfund program is to encourage PRPs to remediate hazardous waste sites. The enforcement process normally used by EPA to enlist PRP involvement may include five major efforts:

- First, EPA attempts to identify PRPs as early as possible.
- Second, EPA will encourage PRPs to do the work at a site.
- Third, if EPA believe the PRP is willing and capable of doing the work, EPA will attempt to negotiate an enforcement agreement. This type of agreement

may take the form of an Administrative Order on Consent (AOC).

- Fourth, if a settlement could not be reached, EPA can se its authority to issue a unilateral administrative order or directly file suit against the PRP(s).
- Fifth, if the PRP(s) do not perform the response action or no PRP(s) are available, the EPA will undertake the work, EPA will file suit against the PRP(s) when practicable.

This is called cost recovery and it is a major priority under the Superfund program.

The enforcement process will lead to the completion of the Remedial Investigation/Feasibility Study, this determines the nature and extent of contamination, evaluate risks, tests whether certain technologies are capable of treating the contamination, and evaluates the cost and performance of technologies that could be used to clean up the site.

Based on results of the feasibility study portion of this phase, EPA will develop a Proposed Plan for cleaning up the site

How EPA and ODEQ involve the public in cleanup decisions.

- Requesting public comments on proposed cleanup plans.
- Meeting with the public, providing updates and fact sheets.
- Mailing list, websites.
- Technical Assistance Grants (TAG)

A TAG grant is available to a local citizen's group to hire a technical advisor to interpret site studies and/or site-related health information for area residents.

ATSDR

The Agency for Toxic Substances and Disease Registry (ATSDR) is the principal federal public health agency involved with hazardous waste issues. ATSDR advises the EPA, as well as other federal and state agencies, community members and other interested parties, on the health impacts of Superfund sites. The agency recommends actions that need to be taken to safeguard people's health. It does this by issuing public health advisories, assessments and consultations.

ATSDR provides information of the most common contaminants at Superfund sites by issuing short, easy-to-read fact sheets as those included with this fact sheet.

For future information

Repository library
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Internet sites
www.xyx

Contacts

EPA Removal Mark Hayes,
214-665-2705 or 1.800.533.3508 (toll-free),
Hayes.Mark@epa.gov

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EPA Press Inquiries from the media should be directed to the Region 6 Press Office
214-665-2200

ATSDR CAPTAIN Patrick Young
U.S. Public Health Service
214-665-8562 or 1.888.422.8737 (toll free)
Young.Patrick @epa.gov

ODEQ Todd Downham
405-702-5136
Todd.downham@deq.ok.gov

Mailing list

a. Form or phone number to request be added to mailing list

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Recommendations for people living on or near contaminated properties:

- Proper hygiene, frequent hand washing, rinse outside toys
- Avoid / restrict access to areas of exposed oily waste
- Reduce exposure to bare soil in accessible areas
- Planting ground cover or shrubbery to reduce exposure to bare soil
- Minimize annual tilling and cultivation adjacent to residences
- Mulch play areas to avoid soil dust and bare soil
- Keep fruit and vegetable gardens away from oily sludge areas
- Use gloves to avoid direct contact with soils.
- Soil should be thoroughly shaken off clothes and footwear, before entering homes.
- Use and keep a doormat or brush for footwear placed outside the door.
- Construction of raised beds filled with purchased sol is an option for avid vegetable gardener
- Rinse and launder gardening clothing promptly to avoid bring contaminated soil into the home
- Wash hands after garden work
- Wash floors and vacuum carpets regularly
- Test home for lead paint
- Participate in children blood lead test programs

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Additional charts and reference/informational material

- Chart of the Superfund Process (the long one, the one with many steps, shows the RI/FS is more than one block, included RI, HHRA,BERA, FS, PP, ROD, etc. The one EPA calls the snake, will need to share this with ODEQ FYI if they agree).
- ATSDR Lead fact sheet two pages with lead as a Potential Contaminant of Concern(PCOC) information.
- ATSDR TPH fact sheet two pages with TPH/oily sludge and PAHs as a Potential Contaminant of Concern information.

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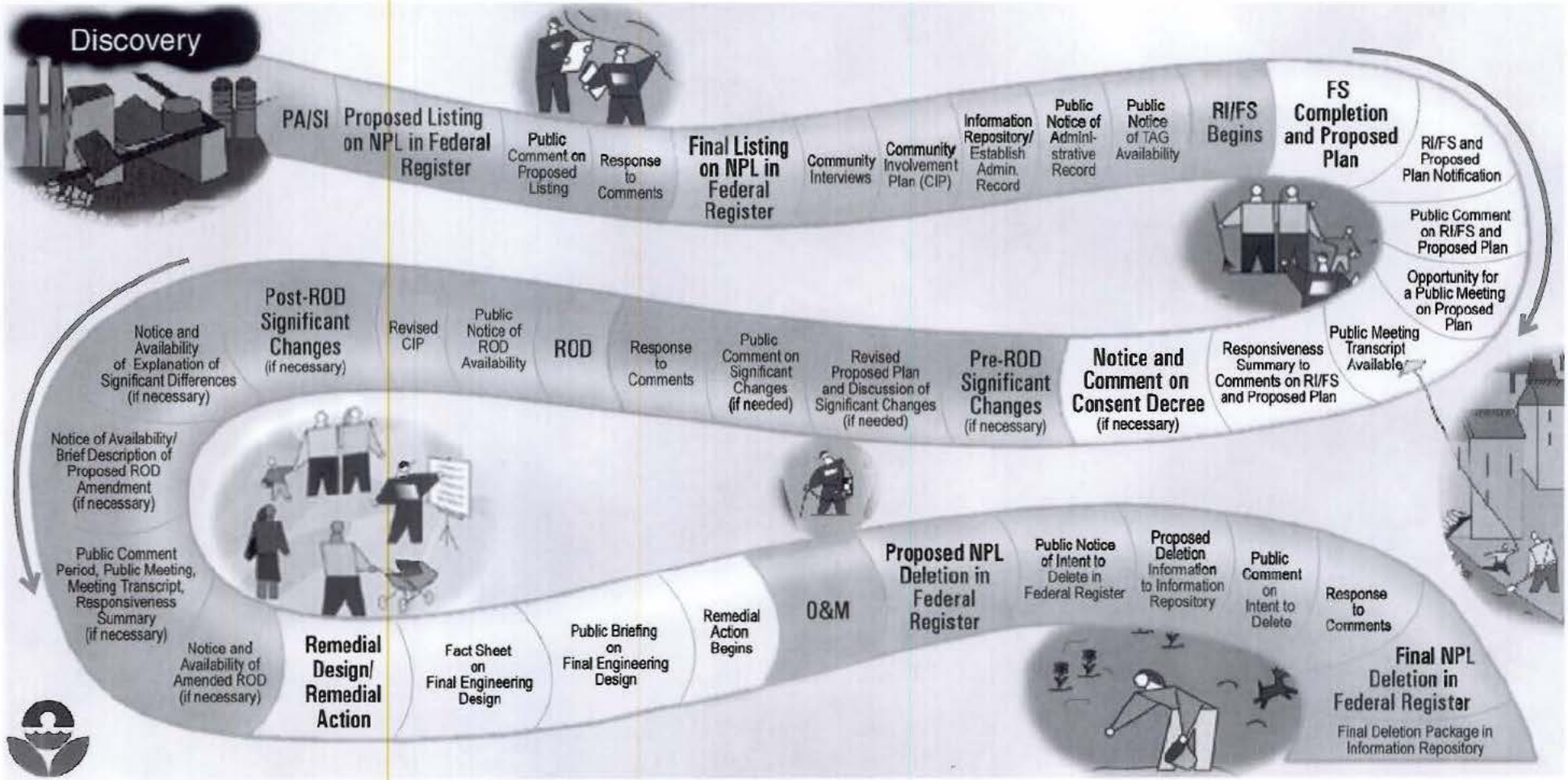
Community Involvement Activities at NPL Sites



Community Involvement and Outreach Center
Office of Emergency and Remedial Response
U.S. EPA Phone: 703-603-XXXX
Ariel Rios Building Fax: 703-603-9100
1200 Pennsylvania Ave., NW http://www .epa.gov/superfund
Washington, DC 20460

January 2001

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

TOTAL PETROLEUM HYDROCARBONS (TPH)

Agency for Toxic Substances and Disease Registry ToxFAQs August 1999

This fact sheet answers the most frequently asked health questions (FAQs) about total petroleum hydrocarbons (TPH). For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: TPH is a mixture of many different compounds. Everyone is exposed to TPH from many sources, including gasoline pumps, spilled oil on pavement, and chemicals used at home or work. Some TPH compounds can affect your nervous system, causing headaches and dizziness. TPH has been found in at least 23 of the 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are total petroleum hydrocarbons?

(Pronounced tōt′l pə-trō′lē-əm hī′drə-kär′bənz)

Total petroleum hydrocarbons (TPH) is a term used to describe a large family of several hundred chemical compounds that originally come from crude oil. Crude oil is used to make petroleum products, which can contaminate the environment. Because there are so many different chemicals in crude oil and in other petroleum products, it is not practical to measure each one separately. However, it is useful to measure the total amount of TPH at a site.

TPH is a mixture of chemicals, but they are all made mainly from hydrogen and carbon, called hydrocarbons. Scientists divide TPH into groups of petroleum hydrocarbons that act alike in soil or water. These groups are called petroleum hydrocarbon fractions. Each fraction contains many individual chemicals.

Some chemicals that may be found in TPH are hexane, jet fuels, mineral oils, benzene, toluene, xylenes, naphthalene, and fluorene, as well as other petroleum products and gasoline components. However, it is likely that samples of TPH will contain only some, or a mixture, of these chemicals.

What happens to TPH when it enters the environment?

- ❑ TPH may enter the environment through accidents, from industrial releases, or as byproducts from commercial or private uses.
- ❑ TPH may be released directly into water through spills or leaks.
- ❑ Some TPH fractions will float on the water and form surface films.
- ❑ Other TPH fractions will sink to the bottom sediments.
- ❑ Bacteria and microorganisms in the water may break down some of the TPH fractions.
- ❑ Some TPH fractions will move into the soil where they may stay for a long time.

How might I be exposed to TPH?

- ❑ Everyone is exposed to TPH from many sources.
- ❑ Breathing air at gasoline stations, using chemicals at home or work, or using certain pesticides.
- ❑ Drinking water contaminated with TPH.
- ❑ Working in occupations that use petroleum products.
- ❑ Living in an area near a spill or leak of petroleum products.
- ❑ Touching soil contaminated with TPH.

How can TPH affect my health?

Some of the TPH compounds can affect your central nervous system. One compound can cause headaches and dizziness at high levels in the air. Another compound can cause a nerve disorder called "peripheral neuropathy," consisting of numbness in the feet and legs. Other TPH compounds can cause effects on the blood, immune system, lungs, skin, and eyes.

Animal studies have shown effects on the lungs, central nervous system, liver, and kidney from exposure to TPH compounds. Some TPH compounds have also been shown to affect reproduction and the developing fetus in animals.

How likely is TPH to cause cancer?

The International Agency for Research on Cancer (IARC) has determined that one TPH compound (benzene) is carcinogenic to humans. IARC has determined that other TPH compounds (benzo[a]pyrene and gasoline) are probably and possibly carcinogenic to humans. Most of the other TPH compounds are considered not to be classifiable by IARC.

Is there a medical test to show whether I've been exposed to TPH?

There is no medical test that shows if you have been exposed to TPH. However, there are methods to determine if you have been exposed to some TPH compounds. Exposure to kerosene can be determined by its smell on the breath or clothing. Benzene can be measured in exhaled air and a breakdown product of benzene can be measured in urine. Other TPH compounds can be measured in blood, urine, breath, and some body tissues.

Has the federal government made recommendations to protect human health?

There are no regulations or advisories specific to TPH. The following are recommendations for some of the TPH fractions and compounds:

The EPA requires that spills or accidental releases into the environment of 10 pounds or more of benzene be reported to the EPA.

The Occupational Safety and Health Administration has set an exposure limit of 500 parts of petroleum distillates per million parts of air (500 ppm) for an 8-hour workday, 40-hour workweek.

Glossary

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Immune system: Body organs and cells that fight disease.

Pesticides: Chemicals used to kill pests.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for total petroleum hydrocarbons (TPH). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

LEAD

CAS # 7439-92-1

Division of Toxicology and Environmental Medicine ToxFAQs™ August 2007

This fact sheet answers the most frequently asked health questions (FAQs) about lead. For more information, call the ATSDR Information Center at 1-800-232-4636. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to lead can happen from breathing workplace air or dust, eating contaminated foods, or drinking contaminated water. Children can be exposed from eating lead-based paint chips or playing in contaminated soil. Lead can damage the nervous system, kidneys, and reproductive system. Lead has been found in at least 1,272 of the 1,684 National Priority List sites identified by the Environmental Protection Agency (EPA).

What is lead?

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead can be found in all parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing.

Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, lead from paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. The use of lead as an additive to gasoline was banned in 1996 in the United States.

What happens to lead when it enters the environment?

- Lead itself does not break down, but lead compounds are changed by sunlight, air, and water.
- When lead is released to the air, it may travel long distances before settling to the ground.
- Once lead falls onto soil, it usually sticks to soil particles.
- Movement of lead from soil into groundwater will depend on the type of lead compound and the characteristics of the soil.

How might I be exposed to lead?

- Eating food or drinking water that contains lead. Water pipes in some older homes may contain lead solder. Lead can leach out into the water.
- Spending time in areas where lead-based paints have been used and are deteriorating. Deteriorating lead paint can contribute to lead dust.
- Working in a job where lead is used or engaging in certain hobbies in which lead is used, such as making stained glass.
- Using health-care products or folk remedies that contain lead.

How can lead affect my health?

The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in your body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production.

How likely is lead to cause cancer?

We have no conclusive proof that lead causes cancer in humans. Kidney tumors have developed in rats and mice that had been given large doses of some kind of lead compounds. The Department of Health and Human Services

(DHHS) has determined that lead and lead compounds are reasonably anticipated to be human carcinogens and the EPA has determined that lead is a probable human carcinogen. The International Agency for Research on Cancer (IARC) has determined that inorganic lead is probably carcinogenic to humans and that there is insufficient information to determine whether organic lead compounds will cause cancer in humans.

How can lead affect children?

Small children can be exposed by eating lead-based paint chips, chewing on objects painted with lead-based paint, or swallowing house dust or soil that contains lead.

Children are more vulnerable to lead poisoning than adults. A child who swallows large amounts of lead may develop blood anemia, severe stomachache, muscle weakness, and brain damage. If a child swallows smaller amounts of lead, much less severe effects on blood and brain function may occur. Even at much lower levels of exposure, lead can affect a child's mental and physical growth.

Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common if the mother or baby was exposed to high levels of lead. Some of these effects may persist beyond childhood.

How can families reduce the risks of exposure to lead?

- ❑ Avoid exposure to sources of lead.
- ❑ Do not allow children to chew or mouth surfaces that may have been painted with lead-based paint.
- ❑ If you have a water lead problem, run or flush water that has been standing overnight before drinking or cooking with it.
- ❑ Some types of paints and pigments that are used as make-up or hair coloring contain lead. Keep these kinds of products away from children
- ❑ If your home contains lead-based paint or you live in an area contaminated with lead, wash children's hands and faces often to remove lead dusts and soil, and regularly clean the house of dust and tracked in soil.

Is there a medical test to determine whether I've been exposed to lead?

A blood test is available to measure the amount of lead in your blood and to estimate the amount of your recent exposure to lead. Blood tests are commonly used to screen children for lead poisoning. Lead in teeth or bones can be measured by X-ray techniques, but these methods are not widely available. Exposure to lead also can be evaluated by measuring erythrocyte protoporphyrin (EP) in blood samples. EP is a part of red blood cells known to increase when the amount of lead in the blood is high. However, the EP level is not sensitive enough to identify children with elevated blood lead levels below about 25 micrograms per deciliter (μg/dL). These tests usually require special analytical equipment that is not available in a doctor's office. However, your doctor can draw blood samples and send them to appropriate laboratories for analysis.

Has the federal government made recommendations to protect human health?

The Centers for Disease Control and Prevention (CDC) recommends that states test children at ages 1 and 2 years. Children should be tested at ages 3–6 years if they have never been tested for lead, if they receive services from public assistance programs for the poor such as Medicaid or the Supplemental Food Program for Women, Infants, and Children, if they live in a building or frequently visit a house built before 1950; if they visit a home (house or apartment) built before 1978 that has been recently remodeled; and/or if they have a brother, sister, or playmate who has had lead poisoning. CDC considers a blood lead level of 10 μg/dL to be a level of concern for children.

EPA limits lead in drinking water to 15 μg per liter.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2007. Toxicological Profile for lead (Update). Atlanta, GA: U.S. Department of Public Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Environmental Medicine, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-800-232-4636, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.