What's in your burn barrel?

St. Louis County Solid Waste Department
In partnership with the Minnesota Pollution Control Agency

St. Louis County
Solid Waste Department
307 First St. S., Ste. 115
Virginia, MN 55792
218-749-9703
1-800-450-9278

Arsenic

What it's from:

Arsenic is found in several forms. Arsenic may be found in treated lumber, agricultural chemicals, glass, pharmaceuticals or metallic alloys. Arsenic can be emitted by smoke, particulates or ash.

Health effects:

Arsenic is a poison that causes skin irritation, possible dermatitis, respiratory distress, diarrhea, kidney damage, muscle tremors, convulsions, possible GI tract, reproduction and liver damage.

Environmental effects:

Arsenic from burning garbage contaminates soil and ground water affecting plants and well water.

Ash

What it's from:

Ash is the residue from incomplete burning. Ash from burned garbage contains heavy metals and other chemicals harmful to human and animal health, and to the environment. Ash from burn barrels is considered a hazardous waste.

Health effects:

Airborne ash can irritate the eyes and throat, and damage the lungs. Ash that falls to the ground deposits metals and chemicals that can cause organ damage, bone marrow diseases, reproductive disorders, increased susceptibility to infections and more. *(See also Arsenic, Barium, Cadmium, Chromium, Dioxin, Lead, and Mercury.)*

Environmental effects:

Ash causes soil and ground water contamination. Cinders in ash cause wildfires, or may cause fires at garbage disposal facilities.

Cadmium

What it's from:

Cadmium is used in manufacturing batteries, metal welding and soldering, and cigarettes.

Health effects:

Exposure to cadmium may cause pulmonary edema, coughing, muscle and head aches, nausea vomiting, emphysema, kidney disease, mild anemia, prostate or lung cancer. It may also lead to fragile bones.

Environmental effects:

Cadmium particles easily travel long distances through the air. It binds strongly to soil particles. Some cadmium dissolves in water. It doesn't break down in the environment and can be taken up by fish, plants and animals.

Carbon Monoxide

What it's from:

Carbon monoxide is a colorless and odorless gas, formed when carbon in fuel and other materials are not burned completely. It is a well-known component of motor vehicle exhaust, which contributes about 60 percent of all CO emissions nationwide. Smoke from burn barrels and other sources make up the balance.

Health effects:

CO enters the bloodstream through the lungs and reduces oxygen delivery to the body's organs and tissues. The health threat from levels of CO sometimes found in the ambient air is most serious for those who suffer from cardiovascular disease, such as angina pectoris. Visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, and difficulty in performing complex tasks are all associated with exposure to elevated CO levels.

Environmental effects:

Carbon monoxide from burning garbage causes minimal environmental damage.

Chromium

What it's from:

Chromium is used for chrome plating, dyes and pigments, leather tanning and as a wood preservative.

Health effects:

Chromium exposure may happen from breathing the air, eating food grown around burn barrels, drinking contaminated well water. Chromium may cause nausea, ulcers, convulsions, kidney and liver damage. It can also cause nosebleeds, runny nose, and ulcers of the nasal septum.

Environmental effects:

Chromium can enter the air, water and soil as particles in smoke. Chromium attaches to the soil. It can also dissolve in water and move deeper into ground water sources.

Dioxin

What it's from:

Dioxins are a group of chlorinated chemicals which are formed when materials containing carbon and chlorine are incompletely burned. Materials that contain the greater levels of chlorine which forms dioxins include plastics, treated wood, pesticides and white paper.

Health effects:

Dioxins accumulate in body fats, tissues and milk. They can alter biochemical and cellular functions, affecting hormonal systems and the way cells grow. Dioxins have been shown to cause a long list of adverse health problems including cancer, endometriosis, reduced sperm compounds, and cognitive and neurobehavioral defects, and skin disorders.

Environmental effects:

Dioxins from burn barrels are deposited directly on land or water where they enter the food chain through plants and animal tissues.

Hexachlorobenzene

What it's from:

Hexachlorobenzene can be found in older pesticides, fireworks, ammunition, and synthetic rubber. It is formed as a by-product from burning other chemicals found in household garbage.

Health effects:

Exposure to hexachlorobenzene occurs primarily from eating food grown in contaminated soil, from fish from contaminated waters, or from eating animal meats that have eaten contaminated vegetation. Exposure may also occur through breathing smoke or vapors from burning garbage. The main health effect from eating contaminated food is liver disease. Other effects include skin sores, arthritis symptoms, and damage to nervous, immune and endocrine systems.

Environmental effects:

Hexachlorobenzene can remain in the environment for a long time. It breaks down very slowly. Levels can build up in fish, marine mammals, birds, and lichens and the animals that eat lichens. It can also build up in grains, grasses, vegetables and other plants.

Lead

What it's from:

Exposure to lead may come through a number of sources, including lead-based paint, petroleum, lead contaminated dust and lead contaminated residential soil. Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust.

Health effects:

Lead is a highly toxic element. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Recent studies also show that lead may be a factor in high blood pressure and subsequent heart disease.

Environmental effects:

Lead can be deposited on the leaves of plants, presenting a hazard to grazing animals and humans through ingestion.

Mercury

What it's from:

Mercury is a heavy metal. Some forms of mercury are known to be highly toxic. Common household mercury wastes include fluorescent tubes, batteries, toys that make noise or light up, dental amalgam, thermostats, thermometers, electronic switches, some skin creams, and some pharmaceuticals.

Health effects:

Some forms of mercury may cause cancer. Dietary consumption from contaminated food given evidence of developmental abnormalities in attention and verbal skills. Other health effects are central nervous system disruption, cancers, cardiovascular disease, spontaneous abortion, thyroid function, gastrointestinal system, liver, immune system and respiratory system.

Environmental effects:

Mercury travels through the air as vapor, or directly into the ground from ash. When it reaches surface waters it enters the fatty tissues of fish. As a ground water contaminant it may find it's way into drinking water supplies.

Smoke

What it's from:

Temperatures reached when garbage is burned in a barrel or pile rarely exceed 500°F. This does not allow for complete combustion of the materials. In addition, home burning does not provide for filters and scrubbers which clean some of the pollutants and smoke before emission into the environment.

Health effects:

Smoke from burn barrels contains hazardous pollutants such as particulate matter, sulfur dioxide, lead, mercury, and hexachlorobenzene. These pollutants can have immediate and long-term health effects such as asthma, emphysema and other respiratory illnesses, nervous system, kidney or liver damage, and reproductive or developmental disorders.

Environmental effects:

Smoke greatly reduces visibility. It also is the visible evidence that pollutants from open burning are traveling away from the source and being deposited on plants, soil and water.

Sulfur Dioxide

What it's from:

Sulfur dioxide is formed during burning of coal, oil and petroleum based products such as plastics and synthetic fabrics.

Health effects:

Breathing air that is contaminated with sulfur dioxide can cause burning of the nose and throat, and breathing difficulties. Over time, sulfur dioxide may cause changes in lung function. People with asthma are especially sensitive to low levels of sulfur dioxide.

Environmental effects:

When released into the environment, sulfur dioxide moves into the air and can be converted to sulfuric acid, sulfur trioxide, and sulfates. It can also be dissolved in water and form sulfurous acid and become acid rain.

Alternatives

The St. Louis County Solid Waste Department operates the following facilities within its management area:

- **The Regional Landfill**
- **Five solid waste transfer facilities**
- **Twenty canister sites**
- **Two demolition landfills**
- **Forty-seven recycling drop-off locations**
- **Two Household Hazardous Waste (HHW) facilities**
- **Remote HHW collections during the summer**

In addition to facilities, Solid Waste Service Fees paid on property within the management area fund **free disposal** of the following materials:

- **Used antifreeze**
- **Appliances** (2 free per trip)
- **Auto batteries**
- **Brush**
- **4 ft. florescent bulbs** (4 free/trip)
- **Used motor oil**
- **Drained oil filters** (6 free/trip)
- **Scrap metal**
- **Tires from cars or light trucks**(4 free/trip)
- **Yard waste**
- **Mixed recyclable papers**
- **Recyclable bottles and jars**
- **Cardboard (at Brookston, Cook and Northwoods Transfer Stations)**

After recycling all materials allowed, the balance of municipal garbage is charged at **$1.00 per 32 gallon bag, or $5.00 per cubic yard.**

Demolition materials such as non-treated lumber, windows, concrete and asphalt brought to a transfer station or demolition landfill is charged at **$30.67 per ton.**

There are also two non-County demolition landfills within the management area.

- Voyager in Canyon (800-719-3369)
- Veit in Hibbing (218-262-3867)

Mattresses and box springs are charged at $5.00 per unit.

Since the Solid Waste Service Fees help defray the costs for these services, rates for garbage and other materials generated outside the St. Louis County Solid Waste Management Area are higher.

For more information on site locations and hours, and materials accepted please call the St. Louis County Solid Waste Department at 218-749-9703 or 1-800-450-9278.

References:

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