

# ASPHALT PLANT POLLUTION



Asphalt plants mix gravel and sand with crude oil derivatives to make the asphalt used to pave roads, highways, and parking lots across the U.S. These plants release millions of pounds of chemicals to the air during production each year, including many cancer-causing toxic air pollutants such as arsenic, benzene, formaldehyde, and cadmium. Other toxic chemicals are released into the air as the asphalt is loaded into trucks and hauled from the plant site, including volatile organic compounds, polycyclic aromatic hydrocarbons (PAHs), and very fine condensed particulates.[EPA]

■ **Asphalt Fumes are Known Toxins.** The federal Environmental Protection Agency (EPA) states “Asphalt processing and asphalt roofing manufacturing facilities are major sources of hazardous air pollutants such as formaldehyde, hexane, phenol, polycyclic organic matter, and toluene. Exposure to these air toxics may cause cancer, central nervous system problems, liver damage, respiratory problems and skin irritation.” [EPA]. According to one health agency, asphalt fumes contain substances known to cause cancer, can cause coughing, wheezing or shortness of breath, severe irritation of the skin, headaches, dizziness, and nausea. [NJDHSS] Animal studies show PAHs affect reproduction, cause birth defects and are harmful to the immune system. [NJDHSS] The US Department of Health and Human Services has determined that PAHs may be carcinogenic to humans. [DHHS]

■ **Health Impacts & Loss of Property Value.** The Blue Ridge Environmental Defense League (BREDL), a regional environmental organization, has done two studies on the adverse impacts on property values and health for residents living near asphalt plants. A property value study documented losses of up to 56% because of the presence of a nearby asphalt plant. In another study, nearly half of the residents reported negative impacts on their health from a new asphalt plant. The door-to-door health survey found 45% of residents living within a half mile of the plant reported a deterioration of their health, which began after the plant opened. The most frequent health problems cited were high blood pressure (18% of people surveyed), sinus problems (18%), headaches (14%), and shortness of breath (9%). [BREDL]

■ **Flawed Tests Underestimate Health Risks.** In addition to smokestack emissions, large amounts of harmful “fugitive emissions” are released as the asphalt is moved around in trucks and conveyor belts, and is stored in stockpiles. A small asphalt plant producing 100 thousand tons of asphalt a year may release up to 50 tons of toxic fugitive emissions into the air. [Dr. R. Nadkarni] Stagnant air and local weather patterns often increase the level of exposure to local communities. In fact, most asphalt plants are not even tested for toxic emissions. The amounts of these pollutants that are released from a facility are estimated by computers and mathematical formulas rather than by actual stack testing, estimates that experts agree do not accurately predict the amount of toxic fugitive emissions released and the risks they pose. According to Dr. Luanne Williams, a North Carolina state toxicologist, 40% of the toxins from asphalt plant smokestacks even meet air quality standards—and for the other 60% of these emissions, the state lacks sufficient data to determine safe levels.

**BE SAFE: Take Precautionary Action to Protect  
Our Communities from Asphalt Plant Air Pollution**

# BE SAFE's FOUR PRINCIPLES

## 1. HEED EARLY WARNING SIGNS

There is documented evidence from health experts and federal and state regulators of the serious health effects of asphalt plant emissions. We must heed these early warning signs and take action to prevent communities from further exposure to cancer-causing substances released by asphalt plants. The following actions are needed:

**Moratoriums** on asphalt plant construction and operation in communities where people live and go to school;

**Stricter testing** and enforcement of air quality standards at asphalt plants; and

**Improved air standards** that address all toxic contaminants—including fugitive emissions.

## 2. PUT SAFETY FIRST

Even if an asphalt plant meets all state and federal air pollution standards, people living nearby are still exposed to cancer-causing substances that can cause long-term damage. These standards are based on the principle of “acceptable risk”, and assume each state will enforce the standards, the plants will operate perfectly, and the owners can be trusted to operate on an honor system where they are expected to follow all the laws and regulations that apply to their facility without any government oversight. In the majority of cases, it is unknown whether the ‘theoretical’ air emissions predicted by computer models and used by plant owners accurately reflect air emissions from a plant’s daily operations. We must put safety first and shut down or overhaul the current system that fails to protect communities from the daily health hazards of asphalt plant pollution.

## 3. EXERCISE DEMOCRACY

Federal regulations based on the “acceptable risk” model and self-regulating honor systems are inadequate to protect public health. Many states rely on inadequate federal standards that do not take into account local factors such as how close an industrial facility is to homes and schools, local weather patterns, and additional ‘nuisance’ factors such as the effect acrid and nauseating smells have on the quality of life in these communities.

Organizations are working to improve federal and state standards and add asphalt plant fumes to the hazardous air pollutant (HAP) list under the federal Clean Air Act. Communities can take advantage of any state laws aimed at protecting local values that allow counties to determine where new industrial facilities will be located. These communities can band together to work with their county governments to prevent new asphalt plants from being located in their neighborhoods and prevent existing plants from renewing their permits until further evaluation of public health risks are conducted.

## 4. CHOOSE THE SAFEST SOLUTIONS

Communities faced with an asphalt plant proposal should push for setbacks from residences and community buildings, site specific health-based air pollution modeling and monitoring, enclosures for loading zones, and preferably a zero emissions asphalt plant, with total containment of air pollutants.

### ■ Investigate Pollution in Your Area.

To find out more about asphalt plant pollution in your area, go to [www.scorecard.org](http://www.scorecard.org)

### ■ Join the Clean Air Campaign.

Support the campaign on asphalt plant pollution. To find out more, contact the Blue Ridge Environmental Defense League at [www.bredl.org](http://www.bredl.org).

### ■ BE SAFE.

Take precautionary action to prevent asphalt plant pollution. Sign on to the BE SAFE Platform on the next page. Be counted when we deliver this national Platform to the White House in 2005. Endorse the BE SAFE Platform today at [www.besafenet.com](http://www.besafenet.com).

### ■ Your Vote Counts.

The next election will set the country's course on asphalt plant regulations. For information on environmental voting records, contact [www.sierraclub.org](http://www.sierraclub.org) and [www.lcv.org](http://www.lcv.org). To register to vote, contact [www.earthday.net](http://www.earthday.net)

## Clean Air Campaign Halts Asphalt Pollution & Improves Air Policies

*"Nothing could have prepared us for the horrors of that plant; we cannot be outside when it operates, we are prisoners."*

*Jerry Starr, Macon County, NC*

Blue Ridge Environmental Defense League (BREDL) has been leading a Clean Air Campaign to reduce toxic pollution from asphalt plants in North Carolina. In partnership with many community groups, BREDL defeated numerous asphalt plant proposals, spearheaded a trend of countywide moratoriums on asphalt plant construction and operation, and mounted plant permit challenges. The campaigns included radio ads, posted yard signs, newspaper display ads, and stories in local newspapers.

BREDL and the Clean Air Campaign have succeeded in reducing asphalt pollution and improving air quality policies. North Carolina and Tennessee signed an agreement to protect air quality in the Great Smoky Mountain National Park and other wilderness areas. North Carolina has improved methods to analyze fugitive toxic air emissions and expanded the Toxic Air Pollutant program to include all operating and proposed asphalt plants.

### References:

US EPA Office of Air Quality Planning & Standards, AP-42, Fifth Edition, Volume I, Chapter 11: Mineral Products Industry, [EPA] <http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s01.pdf>. Final Rule to Reduce Toxic Air Emissions From Asphalt Processing & Asphalt Roofing Manufacturing Facilities, Environmental Protection Agency, June 2000 [EPA]. Hazardous Substance Fact Sheet, Asphalt Fumes. New Jersey Department of Health and Senior Services, January 2001 [NJDHSS]. Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological Profile for Polycyclic Aromatic Hydrocarbons (PAHs). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service [DHHS]. Blue Ridge Environmental Defense League Asphalt Health Survey, [BREDL]. Dr. R. Nadkarni developed mass balance equation to estimate total fugitive emissions and his comments to Virginia Dept. of Environmental Quality are at [www.bredl.org/pdf/DEQ072503.pdf](http://www.bredl.org/pdf/DEQ072503.pdf). [Dr. R. Nadkarni].

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# ***BE SAFE Platform***

*In the 21st century, we envision a world in which our food, water and air are clean, and our children grow up healthy and thrive. Everyone needs a protected, safe community and workplace, and natural environment to enjoy. We can make this world vision a reality. The tools we bring to this work are prevention, safety, responsibility and democracy.*

*Our goal is to prevent pollution and environmental destruction before it happens. We support this precautionary approach because it is preventive medicine for our environment and health. It makes sense to:*

- *Prevent pollution and make polluters, not taxpayers, pay and assume responsibility for the damage they cause;*
- *Protect our children from chemical and radioactive exposures to avoid illness and suffering;*
- *Promote use of safe, renewable, non-toxic technologies;*
- *Provide a natural environment we can all enjoy with clean air, swimmable, fishable water and stewardship for our national forests.*

*We choose a “better safe than sorry” approach motivated by caution and prevention. We endorse the common-sense approach outlined in the BE SAFE’s four principles listed below.*

## ***Platform Principles***

### **HEED EARLY WARNINGS**

Government and industry have a duty to prevent harm, when there is credible evidence that harm is occurring or is likely to occur—even when the exact nature and full magnitude of harm is not yet proven.

### **PUT SAFETY FIRST**

Industry and government have a responsibility to thoroughly study the potential for harm from a new chemical or technology before it is used—rather than assume it is harmless until proven otherwise. We need to ensure it is safe now, or we will be sorry later. Research on impacts to workers and the public needs to be confirmed by independent third parties.

### **EXERCISE DEMOCRACY**

Precautionary decisions place the highest priority on protecting health and the environment, and help develop cleaner technologies and industries with effective safeguards and enforcement. Government and industry decisions should be based on meaningful citizen input and mutual respect (the golden rule), with the highest regard for those whose health may be affected and for our irreplaceable natural resources—not for those with financial interests. Uncompromised science should inform public policy.

### **CHOOSE THE SAFEST SOLUTION**

Decision-making by government, industry and individuals must include an evaluation of alternatives, and the choice of the safest, technically feasible solutions. We support innovation and promotion of technologies and solutions that create a healthy environment and economy, and protect our natural resources.

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**Take precautionary action to prevent asphalt plant pollution.  
Sign onto the BE SAFE Platform.**

Be counted when we deliver this national platform to the White House in 2005.

Endorse the platform today at [www.besafenet.com](http://www.besafenet.com)

BE SAFE is coordinated by the Center for Health, Environment & Justice. To sign the platform or for more information, contact us at CHEJ, P.O. Box 6806, Falls Church, VA 22040, 703-237-2249, or 518-732-4538, or visit [www.besafenet.com](http://www.besafenet.com)

