

ASPHALT PLANT POLLUTION

Young & McQueen Grading Company wants to build an asphalt plant in Mitchell County. The draft air pollution permit proposed by the NC Division of Air Quality (Permit No. 09808R00) would allow the plant to produce up to 225,000 tons of asphalt per year at a maximum of 160 tons per hour. If given final approval by the state, the Young & McQueen plant would be allowed to emit the following air pollutants annually:

<i>Chronic toxicants</i>	
carbon disulfide	682
methyl ethyl ketone	13,650
toluene	17,150
xylene	9,975
<i>Acute system toxicants</i>	
styrene	3,780
<i>Carcinogens</i>	
benzene	64
trichloroethylene (TCE)	4,000
perchloroethylene (PCE)	13,000

all pollutants in pounds per year

Chronic toxicants include neurotoxins and developmental toxins, substances which have a negative impact on the human nervous system and/or human growth and development.

Acute system toxicants are pollutants which cause the death of laboratory animals within 14 days of exposure or is toxic based on human experience.

Carcinogens are substances which are known to cause cancer or which are suspected to cause cancer in humans.

Definitions from the US Code of Federal Regulations (16CFR1500) for the Federal Hazardous Substances Control Act.

Annual totals based on production rate of 160 tons per hour for 1,406 hours per year or 175 days at 8 hours per day to produce 225,000 tons of asphalt.

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Certain pollution sources at the asphalt plant would be exempted from its state permit: 1) an Asphalt Tank Heater burning No. 2 fuel oil at 1.6 million BTU heat input and 2) a 10,000 gallon liquid asphalt storage tank. These units are known sources of toxic air pollution but are exempted by state statute; that is, they are listed in the permit but not included in the air pollution limits.

Asphalt Plant Pollution: A Public Health Hazard

Road asphalt contains gravel and sand mixed with asphalt cement obtained from crude oil. Asphalt cement is a mixture of hydrocarbons including naphtha which contribute to the vaporization of organic compounds at operating temperatures of 300-350 degrees F. Hydrocarbons released into the air by the hot mix asphalt as it is loaded into trucks and hauled from the plant site include volatile organic compounds, polycyclic aromatic hydrocarbons, and condensed particulates. Also, arsenic, benzene, formaldehyde, and cadmium are toxic air pollutants emitted from asphalt plants. Condensation of particulates occurs at *(continued next page)*

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www.BREDL.org PO Box 88 Glendale Springs, NC 28629 (336) 982-2691 BREDL@skybest.com

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ambient temperatures of 70 degrees F. These very fine particles carry polycyclic aromatic hydrocarbons which are a danger to public health. Animal studies show that PAHs affect reproduction, cause birth defects, and cause harmful effects on skin, body fluids, and the immune system. The US Department of Health and Human Services has determined that PAHs may be carcinogenic to humans. [Source: 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]

The effect of fugitive emissions on local pollution levels may exceed the effects of pollutants emitted from the smokestack.

In addition to smokestack emissions asphalt plants emit large quantities of harmful fugitive emissions at ground level. A small asphalt plant producing 100 thousand tons of asphalt a year may generate 50 tons of toxic fugitive emissions. The bulk of fugitive emissions are condensed particulates. Volatile organic compounds (VOC's) emissions are about 29% of the this total. To this must be added the total emitted from the smokestack itself. Stagnant air conditions and inversions increase the level of exposure to the local community.

The Blue Ridge Environmental Defense League has released two studies showing the adverse impacts on property values and public health for residents living near operating asphalt plants. A property value study documented losses of up to 56% as a direct result of an asphalt plant. In another study nearly half of the residents report negative impacts on their health after only two years of asphalt plant operations. The door-to-door survey shows that 45% of the residents living within a half mile of a two year old asphalt plant report a deterioration of their health which began after the plant opened. The most frequent problems include high blood pressure (18% of people surveyed), sinus problems (18%), headaches (14%), and shortness of breath (9%).

Action recommendations

Federal regulation of asphalt plant emissions is inadequate to protect public health. EPA's emission estimates (AP-42) are inadequate to protect worker health and public health. Therefore, citizens must join together to protect their communities. Any county or town 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 load-out zones, and preferably a zero emissions asphalt plant, with total containment of air pollutants.

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