

Blue Ridge Environmental Defense League

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

BEFORE THE PLANNING BOARD STOKES COUNTY, NORTH CAROLINA

Stokes County Planning Board

Request for M2-CZ Zoning

Tax ID No. 5976-04-62-2629 and 5976-04-72-3227

Permit No. 13-761

January 23, 2014

TESTIMONY OF LOUIS A. ZELLER, EXECUTIVE DIRECTOR BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

On behalf of the Blue Ridge Environmental Defense League and its members in Stokes County, I hereby submit the following testimony regarding the above-captioned matter. In brief, the League opposes the zoning change and advises that the request either be denied outright or delayed until the County can properly assess and prevent the negative impacts of the change on the residents of Stokes County.

Background

On December 23, 2013 the Stokes County Planning and Zoning Commission (County) received an application for the rezoning of approximately 77 acres of property from Agriculture/Low Density Residential to Heavy Manufacturing Conditional Zoning District (Application).

The State of North Carolina authorizes boards of county commissioners to regulate within their jurisdictions the location and management of petroleum contaminated soil, the proper remediation and prevention of improperly exposed and handled petroleum contaminated soil and the protection of the health, safety, and welfare of its citizens and the peace and dignity of the County as provided in G.S. § 153A-121.

Under North Carolina law, soil contaminated with the following petroleum products could be disposed in the proposed site: gasoline, aviation gasoline, gasohol, jet fuels, kerosene, diesel fuel, varsol, mineral spirits, naphtha, fuel oils (#1 - #6); motor oils

(new or used). See G.S. 143-215.1.

Statement

Although the Application centers on petroleum contaminated soil, petroleum is not a single compound but a host of different fuels, lubricants and solvents, listed *supra*. These compounds are often laced with additives, listed in Appendix A attached to these remarks.

Non-petroleum Substance Contamination

The County must take steps to ensure that soils contaminated with substances other than petroleum are not allowed by the requested conditional zoning. What types of non-petroleum wastes could be disposed at the Pinnacle community site? North Carolina's guidelines for *ex situ* disposal of contaminated soil allow a variety of soil types and compounds. And non-petroleum products are allowed to be disposed with approval of the regional office of the Department of Environment and Natural Resources; for Stokes, this would be the Winston-Salem Regional Office. The state's guidance says:

A permittee may only accept clays, silts, sands, soil, natural minerals or soil contaminated with petroleum products as defined by G.S. 143-215.94A(10). No contaminants other than petroleum are covered under these permits. No soil containing non-petroleum non-hazardous products, unless approved in writing by the regional office supervisor, may be placed on a treatment site.¹

Emphasis added. Here we see that the door is open to other contaminants with only the written approval of the state agency. The County must take steps to limit the acceptance of contaminated soil types to prevent non-petroleum wastes not suited for bioremediation or even harmful to the biological action of naturally occurring soil microbes. Among these problematic compounds are radionuclides associated with hydrofracking and chlorinated compounds in gasoline additives. Toxic compounds present in petroleum products in addition to the primarily organic compounds of the oil and gas may poison the biological agents necessary for breakdown of the contaminated

¹ "Guidelines for *Ex Situ* Petroleum Contaminated Soil Remediation," chapter 2.0: *Ex Situ* Petroleum Contaminated Soil Remediation, section 2.2: Non-Discharge Permit Requirements and General Performance Standards for the Treatment of Petroleum Contaminated Soil, effective December 1, 2013

soil. A study published in *Bioresource Technology* reported:

Bioremediation has also its limitations. Some chemicals are not amenable to biodegradation; for instance, heavy metals, radionuclides and some chlorinated compounds.²

Pursuant to G.S. § 153A-121, the County has an obligation to ensure that such toxic substances are not in the contaminated soils accepted for bioremediation.

Non-compliance With Federal Law

The Application states that “The site will comply with all applicable federal regulations.” See Application Item 3: Compliance with Stokes County Conditional Zoning Requirements. However, the Application’s Exhibit B sidesteps the need for testing of ambient air for the control of aerial contaminants such as volatile organic compounds, or VOC. The Application states: “Advised that DENR does not require air quality monitoring at these sites due to the fact that the volatile compounds have escaped prior to the landfarming activities.” But a common definition of land farming is:

LAND FARMING. A method of removing petroleum compounds from soils. Contaminated soils are removed from the ground, spread over a given area, and periodically tilled to speed up the release of VOCs and breakdown of the contaminants.³

In fact, the federal Clean Air Act requires that “treatment, storage, and disposal facilities comply with primary and secondary ambient air quality standards. During the excavation, transportation, and treatment of soils, fugitive emissions are possible. Fugitive emissions include (1) volatile organic compounds and (2) dust which may cause semivolatiles and other contaminants to become airborne.”⁴

Pursuant to Conditional Zoning Ordinance 92.2, this omission in the Application must be corrected before the County acts on the re-zoning request.

² “Factors limiting bioremediation technologies,” Boopathy R, *Bioresource Technology*, 74 (2000) p. 64

³ Davie County, NC, Code of Ordinances, Title XV: Land Usage, Chapter 152: Land Farming, §152.01 Definitions

⁴ *J.R. Simplot Ex Situ Bioremediation Technology for Treatment of TNT-Contaminated Soils*, EPA/540/R-96/529, September 1995

Fracking Wastes

Pursuant to S.L. 2011-276, on April 20, 2012 the Department of Environment and Natural Resources issued a report which called for, *inter alia*, the "Development of specific standards for management of oil and gas wastes." Subsequently, on July 2, 2012 the North Carolina General Assembly ratified S.L. 2012-143 (Senate Bill 820) which established the NC Mining and Energy Commission to develop the rules for oil and gas exploration and development activities using horizontal drilling and hydraulic fracturing treatments in North Carolina.

The Blue Ridge Environmental Defense League staff follows closely the deliberations of the North Carolina Mining and Energy Commission ("MEC"). The land application of hydrofracking liquid and sludge is still under discussion by the MEC, and Commission member Vikram Rao has discussed in public the spraying of flowback and produced water on farm fields. It is already an accepted practice in other states.

The North Carolina hydrofracking waste management rule is in draft form, and the MEC has avoided being "prescriptive" about what operators may do with their waste, but any community that allows petroleum contaminated soil to be brought in would clearly be vulnerable to hydrofracking wastes. In other words, although the rules are not finalized, land application of hydrofracking wastes is not forbidden in North Carolina. Looking at it in the negative, what laws or regulations are there to prevent it?

Stokes County Conditional Use Zoning Insufficient

State law § 153A-121, General ordinance-making power, enables the County to take steps to protect the health, safety and welfare of its citizens. Other counties in North Carolina, when faced with similar risks, adopted set-back regulations to protect the neighbors of *ex situ* bioremediation.

For example, in Union County, the soil to be disposed of may be deposited no closer than 500 feet of any public or private water supply including wells; 250 feet from any stream, lake, river or natural drainage way; 100 feet from any property line; 500 feet

from any residence, school, hospital, playground or recreational park area.

In Davie County, the *ex situ* soil to be disposed of cannot be deposited closer than 1000 feet from any regularly flowing stream, 1000 feet from any source of drinking water, or 1000 feet from any residence, school, hospital, playground, or recreational park area.

Regulations for petroleum contaminated soil which have also been adopted in Davie County are identical to the federal regulations for the management of hazardous waste contained in 40 CFR § 262.11. See Appendix B.

Conclusion

Based on the information and analysis provided, Stokes County should not approve the zoning change in Permit No. 13-761 from Agriculture/Low Density to Heavy Manufacturing Conditional Use. Further, we advise that the County either deny the request outright or delay it unless and until omissions in the Application are corrected and the County can assess and prevent the negative impacts on the residents of Stokes County.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Louis A. Zeller", is written over a horizontal line.

Louis A. Zeller, Executive Director

Appendix A.

Gasoline additives increase gasoline's octane rating or act as corrosion inhibitors or lubricants, thus allowing the use of higher compression ratios for greater efficiency and power. Types of additives include metal deactivators, corrosion inhibitors, oxygenates and antioxidants. Some additives are harmful, and are regulated or banned in some countries.

- Oxygenates
 - Alcohols:
 - Methanol (MeOH)
 - Ethanol (EtOH)
 - Isopropyl alcohol (IPA)
 - *n*-butanol (BuOH)
 - Gasoline grade *t*-butanol (GTBA)
 - Ethers:
 - Methyl tert-butyl ether (MTBE)
 - Tertiary amyl methyl ether (TAME)
 - Tertiary hexyl methyl ether (THEME)
 - Ethyl tertiary butyl ether (ETBE)
 - Tertiary amyl ethyl ether (TAEE)
 - Diisopropyl ether (DIPE)
- Antioxidants, stabilizers
 - Butylated hydroxytoluene (BHT)
 - 2,4-Dimethyl-6-tert-butylphenol
 - 2,6-Di-tert-butylphenol (2,6-DTBP)
 - p-Phenylenediamine
 - Ethylene diamine
- Antiknock agents
 - Tetraethyllead, now banned almost everywhere.
 - Methylcyclopentadienyl manganese tricarbonyl (MMT)
 - Ferrocene
 - Iron pentacarbonyl
 - Toluene
 - Isooctane
 - Triptane
- Lead scavengers
 - Tricresyl phosphate (TCP)
 - 1,2-Dibromoethane
 - 1,2-Dichloroethane
- Fuel dyes, most common:
 - Solvent Red 24
 - Solvent Red 26
 - Solvent Yellow 124
 - Solvent Blue 35
- Fuel additives in general
 - Ether and other flammable hydrocarbons
 - Nitrous oxide
 - Nitromethane
 - Acetone
 - Butyl rubber (as polyisobutylene succinimide)
 - Picrate
 - Silicone
 - Tetranitromethane

Source: http://en.wikipedia.org/wiki/List_of_gasoline_additives

Appendix B.**Davie County Land Farming Ordinance, §152, Appx A.
Adopts 40 CFR § 262.11 HAZARDOUS WASTE DETERMINATION.**

A person who generates a solid waste, as defined in 40 CFR 261.2 must determine whether that waste is a hazardous waste using the following method:

- (A) He or she should first determine whether the waste is excluded from regulation under 40 CFR 261.4.
- (B) He or she must then determine if the waste is listed as a hazardous waste in Subpart D of 40 CFR Part 261. (*Note:* Even if the waste is listed, the generator still has an opportunity under 40 CFR 260.22 to demonstrate to the Administrator that the waste from his or her particular facility or operation is not a hazardous waste.)
- (C) For purposes of compliance with 40 CFR Part 268, or if the waste is not listed in Subpart D of this part, the generator must then determine whether the waste is identified in Subpart C of 40 CFR Part 261 by either:
 - (1) Testing the waste according to the methods set forth in Subpart C of 40 CFR Part 261, or according to an equivalent method approved by the Administrator under 40 CFR 260.21; or
 - (2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.
- (D) If the waste is determined to be hazardous, the generator must refer to 40 CFR Parts 264, 265, and 268 for possible exclusions or restrictions pertaining to management of his or her specific waste. (45 FR 33142, May 19, 1980, as amended at 45 FR 76624, Nov. 19, 1980; 51 FR 40637, Nov 7, 1986; 55 FR 22684, June 1, 1990) (40 CFR 261.11)