

# BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

[www.BREDL.org](http://www.BREDL.org) PO BOX 44, Saxapahaw, North Carolina 27340 [BREDL@skybest.com](mailto:BREDL@skybest.com) (336) 525-2003 office

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May 30, 2008

Mr. Ed Hardee  
North Carolina Division of Water Quality  
Aquifer Protection Section/Land Application Unit  
1636 Mail Service Center  
Raleigh, NC 27699-1636

**RE:** City of Burlington, NC, Land Application of Residual Solids, Draft Permit Renewal Number WQ0000520.

Dear Mr. Hardee:

The Blue Ridge Environmental Defense League would like to thank the DENR/DWQ for the opportunity to submit comments on the draft permit renewal for the City of Burlington to land apply sewage sludge on farmlands located in Alamance County, Chatham County, Caswell County, Guilford County, Orange County, and Randolph County, North Carolina. The League is a regional, community-based, non-profit environmental organization with more than 40 chapters in North Carolina and the Southeast. Our founding principles are earth stewardship, environmental democracy, social justice, and community empowerment.<sup>1</sup>

We also wish to thank the DENR/DWQ for granting our request to hold the first-ever hearing concerning the permit renewal of a municipality to land apply sewage sludge. While we realize that as humans we all contribute to sewage sludge, the League does not support spreading sewage sludge on land due to the unknown quantities and combinations of unregulated chemicals and compounds that can pose a risk to human health and the environment. We support research in finding a cleaner and safer alternative to spreading potentially hazardous waste from households, industry, and hospitals on farmlands where food crops for both animals and humans are grown.

The public hearing held on May 13, 2008, drew a large number of residents (between 75-100), mainly from Alamance County. Of this number approximately twenty-seven total residents offered comments. Twenty spoke of the need for changes to the state's residuals management program. Negative experiences experienced by those who testified at the hearing ranged from fly infestations, and severe odors that "make you gag," to burning eyes, coughing, rashes and infections that "wont go away."

Concerns included contamination to ground water, private wells and surface waters, and the potential risks to the environment and public health from harmful substances both tested for and untested for in sludge. These substances include pathogens, pharmaceutical drugs, personal care products, antimicrobials, toxic metals, dioxins,

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<sup>1</sup> BREDL website: <http://www.bredl.org/>

PCBs, radionuclides, and fire retardants – among others. Studies have shown that organic wastewater contaminants in treated waste water from treatment plants concentrate in sludge.<sup>2</sup>

Approximately seven people spoke in support of land application of sewage sludge. Those in favor included staff employed by the City of Burlington Waste Water Treatment Plant, two Synagro representatives and several farmers recruited by the City of Burlington and Synagro to speak in support of using sewage sludge as a “fertilizer.”

Until a cleaner, safer method of disposal for sludge is found, we are requesting that the DWQ take the following steps to better protect human health and the environment:

1. Create a provision for extension of a permit to land apply sludge. The City of Burlington submitted an application for a renewal of its permit under the state residuals management program five years ago. According to NC General Statute, 143-215. 1(d) “Applications and Permits for Land Application of Waste,” states:  
  
(1) “If the Commission fails to act on an application for a permit, including the renewal of a permit, within 90 days after the applicant submits all information required by the Commission, the application is considered to be approved.” The manner in which the statute is worded basically gives carte blanche to any permit that the state fails to act on. More importantly, there is no provision in the current statutes for the extension of a permit, which in the case of the City of Burlington’s permit renewal has been extended indefinitely.
2. Replace the current streamlined permitting process with one that acknowledges the public’s right-to-know. The sheer number of people who turned out for this first-ever, state held public hearing on sludge attests to the need for a process that involves the public in a participatory manner, which until now has been virtually nonexistent. The current permitting system is a streamlined process that was clearly created to serve the permittee, applier and the state, and fails to involve the public in a meaningful way. Applications for permits are eventually approved, even if the state takes no action, and modifications to permits (i.e., additional acreage for sludge applications) are added to permits without the public’s knowledge.
3. Publish notices published in newspapers, libraries, and DWQ website. An improved hearing process should require DWQ to publish notices for new and renewed applications, including any modifications to permits, in local newspapers and at libraries in all counties where sludge applying will be permitted, as well as on the DENR/DWQ website.
4. Publish notices in all counties where spreading sludge is proposed under a permit. Currently, DWQ is only required to place a public notice announcing a hearing in one local newspaper where the permittee is located, in this case, Alamance County. It is

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<sup>2</sup> Survey of Organic Waste Water Contaminants in Biosolids Destined for Land Application, Kinney et al. 2006, 40, 7207-7215. Environmental Science Technology.

likely that residents of Orange, Chatham, Randolph, Caswell and Guilford Counties were unaware that a hearing would take place regarding the renewal of the City of Burlington's permit to spread sewage sludge in their counties. Publishing a notice of a public hearing in newspapers located in counties where sludge applications are proposed to be permitted would allow residents of those counties an opportunity to participate in the process. Others who could not attend (i.e., working families, elderly, handicapped, etc.) would have an opportunity to submit written comments.

5. Hold a hearing in Orange County on the City of Burlington's draft permit renewal per the request by the Orange County Board of Commissioners. We fully support the request by the Orange County Board of Commissioners and encourage DWQ to hold a hearing in the spirit of transparency and the public's right to know.
6. Provide written notification to land owners within a one-mile radius of sludge spreading of new and renewed applications for permits, and modifications to permits. As witnessed at the recent hearing, residents who own property adjacent to fields receiving sludge had a number of concerns as well as negative experiences concerning sludge applications. These included decreased quality of life; fly infestations; severe odors; runoff; concerns about contamination to private wells, surface waters and wetland areas; burning eyes, coughing, rashes, and infections; general anxiety; and other illnesses attributed to exposure to sewage sludge. Research has linked increased risks of illnesses to sewage sludge used as a fertilizer.<sup>3</sup>

We submit that owners of properties have a right to comment and/or request a public hearing on sludge spreading adjacent to their properties that may potentially impact their health, water resources, and property values. Owners of properties located within a one-mile radius of fields being spread with sewage sludge should receive a written notification from DWQ with the name of the landowner having sewage sludge applied, name of permittee, name of applier, origin and amount of sludge applied, and who to contact at DWQ in case of a problem and/or emergency or to request a public hearing.

7. Require the posting of visible signs limiting public access to sludge applied fields on private properties. According to 15A NCAC 02T.1109, OPERATION AND MANAGEMENT PRACTICES, (2)(B)"public access to land that is not a public contact site shall be restricted for 30 days after any residuals land application event."

It is unclear how this rule is being implemented and/or enforced as there are no signs, posters, or fences to indicate a field that has been spread with sewage sludge. Currently, the only signs posted by appliers such as Synagro, are the "trucks entering highway" signs with orange or red flags denoting entrances and setbacks. These do nothing to warn residents to stay clear of freshly applied sludged fields.

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<sup>3</sup> University Of Georgia (2002, July 30). Researchers Link Increased Risk Of Illness To Sewage Sludge Used As Fertilizer: <http://www.sciencedaily.com/releases/2002/07/020730075144.htm>.

As was noted at the hearing, children and teenagers living in rural areas often ride their 4-wheelers and dirt bikes through unmarked fields. Parents cannot warn their children to stay away from sludged fields as they themselves may not know where these fields are located nor do they know that restrictions are required for freshly spread fields. Signs restricting public access should post the type of application (sewage sludge), name of land owner and permittee, permit number, month and date of application, and a number to contact should a problem occur.

8. Provide an explanation of “prolonged nuisance conditions” in the permit. It was clear at the hearing that many residents do not know who to call when they experience conditions associated with the land application of sewage sludge that they deem “unacceptable.” Under the 2T Rules, 15A NCAC 02T.1109 (b) (1) “Bulk residuals shall not be applied to the land: (C): if the application causes prolonged nuisance conditions.” The rules are unclear as to what constitutes “prolonged nuisance conditions.” Many residents have complained of a decreased quality of life after sludge applications, such as odors that make them gag, fly infestations, potential violations. The permit should clearly define what constitutes “prolonged nuisance conditions” as well as what actions a resident can take if the condition persists.
9. Require injection of sludge into top soil. 15A NCAC 02T.1102; DEFINITIONS, states that injection is defined as (21) “...the subsurface application a liquid residual to a depth of 4 to 12 inches.” Currently, sludge is applied to the soil surface. While spreading alone may be a more economical means to dispose of sludge, injection of sludge into topsoil would help prevent potentially toxic particles from becoming airborne, and curb runoff into surface waters, roads and adjoining properties.

Since unknown amounts of pathogens and toxic substances may be present in the soil for decades, landowners should be required (by state law) to fully disclose the use of sludge in the event of sale or leasing of land. Such laws should also apply to disclosure of sludge use on titles or deeds for land where sewage sludge has been spread.

10. Develop regulatory limits for phosphorus levels in sludge as a potential non-point source of pollution to surface waters. Phosphorus is the nutrient that causes most surface water quality problems. Once thought immobile in soil, research studies of phosphorus mobility shows that under certain conditions phosphorus can move from the soil and into nearby waterways, particularly during wet seasons.<sup>4</sup> A 2002-05 survey conducted by NC State University and DENR showed that over 50% of fields that had land applied sewage sludge in the Haw River Watershed contained excessive

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<sup>4</sup>Influence of Flooding on Phosphorus Mobility in Manure-Impacted Soil, Journal of Environmental Quality, 31:1399-1405 (2002): <http://jeq.scijournals.org/cgi/content/abstract/31/4/1399>

levels of phosphorus.<sup>5</sup> Excessive levels of phosphorus can be detrimental to surface water ecosystems, and in particular to surface waters that are classified as “impaired,” or “severely impaired,” such as Jordan Lake, and many other rivers and streams in NC.

11. Require increased setbacks. The OEEB report references numerous instances of known nitrate contamination to drinking water wells from sludge applications. The report notes that it is not known how the current setbacks were determined for land application of sewage sludge nor does DWQ know how these setbacks were determined. Additionally, the report states that the setbacks imposed by DWQ “seem to be minimal, and it is not known whether there are any data to support these setback distances.” It adds that there is some published epidemiologic evidence that suggests that these setback distances “may not be adequate to eliminate the risk to public health.”<sup>6</sup>

Until DWQ has monitoring and testing programs in place to help determine adequate setbacks for the disposal of sludge to protect both human health and water supplies, we recommend the following increased setbacks for land application of Class B sewage sludge:

Habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site: 1,000 ft.

Habitable residence or place of public assembly owned by the permittee, the owner of the land, or lessee/operator of the land maintained as part of the project site: 1,000 ft.

Property lines: 1,000 ft.

Public right of way: 500 ft.

Private or drinking water supply: 1,000 ft.

Surface water: 1,000 ft.

Ephemeral streams, waterways, ditches: 1,000 ft.

Groundwater lowering ditches: 1,000 ft.

Wells (with exception to monitoring wells): 1,000 ft.

Bedrock outcrops: 500 ft.

Building foundations or basements: 1,000 ft.

Waterlines: 1,000 ft.

Swimming pools: 1,000 ft.

Top of slope of embankments or cuts of two feet or more in vertical height: 500 ft.

12. Require monitoring of dedicated and non-dedicated sludge sites to determine potential contamination from sludge. Because of these instances of groundwater

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<sup>5</sup>Delineating Agriculture in the Lake Jordan River Basin, NC State University, Deanna L. Osmond, Nov. 9, 2007: [http://h2o.enr.state.nc.us/nps/documents/DelineatingAgricultureintheLakeJordanRiverBasin-REVISED-DeannaOsmond\\_000.pdf](http://h2o.enr.state.nc.us/nps/documents/DelineatingAgricultureintheLakeJordanRiverBasin-REVISED-DeannaOsmond_000.pdf)

<sup>6</sup> “Human Health Risk Evaluation of the Land Application of Sewage Sludge/Biosolids,” Occupational and Environmental Epidemiology Branch (OEEB), November 2005.

contamination and the public health risks that have occurred from contamination of drinking water wells as a result of sludge, we, like the OEEB, feel that a monitoring program should be instituted to determine if land application sites are causing nitrate contamination of water sources. A monitoring program should consist of monitoring wells around the perimeter of dedicated and selected non-dedicated land application sites in order to detect possible groundwater contamination.

13. Require additional testing of sewage sludge and pretreatment for medical waste. The DWQ should go above and beyond what is required by federal law in testing for a select number emerging organic wastewater contaminants such as pharmaceuticals, antimicrobials, fire retardants and radioactive isotopes (alpha, beta, gamma, etc.) from hospitals, laboratories, and medical and research facilities and establish a baseline for these additional contaminants. Also, current regulations do not require hospitals, laboratories, and medical and research facilities to test and pre-treat medical wastes destined for WWTPs. The TCLP currently used to test for contaminants is out of date and inadequate to test for the array of emerging contaminants in sludge.
14. Create a partnership with county health departments. With perhaps the exception of the Orange County, most county health departments in NC have little or no knowledge about land application and no role in helping to manage the state's residuals management program. This is unusual considering that the practice of spreading sewage sludge on farmlands can impact the health of a county's residents, food, and drinking water, environment, and water resources. However, counties are clearly not informed about sludge spreading nor are they aware of their responsibilities under the state's residuals management program.

There is a deep disconnect between the state and county governments when it comes to sludge. Under the draft permit, item II., PERFORMANCE~STANDARDS, permit requirement number 14 states:

*“...a county or city manager shall be notified at least 24 hours prior to the initial residuals land application event to nay new land application site....and in addition, the appropriate county manager's office shall be notified prior to the initial residuals land application event on any new site so that they will not be aware that residuals land application activities have commenced on the site.”*

The requirements under this rule are simply not being followed - by either the state, the county or the permittee. Not only are county managers unaware of this requirement, but their records of land applications are years out of date. For example, Alamance County had no records of new permits for land application sites since 1994. When this was brought to the attention of DWQ, staff pointed out that it was due to a “lack of interest” on the part of counties. No matter who is “at fault,” the current system is not working and is in dire need of an upgrade.

We recommend that the state actively engage in a state-wide education program with counties that engages counties in a dialogue focusing on improved monitoring, testing, managing complaints and effectively dealing with sludge issues. A partnership between the state and local governments will benefit all residents of NC, and contribute to creating an effective state's residuals management program. Changes should include:

- a. Under draft permit requirement number 11, Noncompliance Notification, p.12, the permittee is required to report occurrences items (a-e) concerning the following: significant amounts of sludge which are abnormal in quantity or appearance; release of sludge to surface water; out-of-compliance episodes; inadequate treatment of sludges; and spillage or discharge of sludge during transport, to the Winston Salem Regional Office for sites in Alamance, Caswell, Randolph, and Guilford Counties, and the Raleigh Regional Office for sites in Orange and Chatham Counties.

This requirement should be *expanded* to require the permittee to notify county managers and/or their respective health departments of these occurrences as well as require the permittee to contact the county with a phone call and a written report concerning the occurrence(s). Counties have authority which surpasses that of the state's in protecting the health of their residents and environment, including a county's water resources. The inclusion of local government would appropriately increase the county's role in better serving their constituents, and again, in strengthening the state's residuals management program.

15. Upgrade state annual reports on land application. Compile information from the residuals land management program into one data base and produce a publicly accessible annual report which, in addition to permit information, provides a breakdown of yearly volumes of sludge applied by permittees with total volumes of sludge applied per year in NC.
16. Set up a "help-line" to record and investigate complaints. DWQ should partner with the OEEB and local health departments to record complaints from residents (i.e., illnesses, potential violations, questions, etc.) concerning sewage sludge applications. This might include a "help-line" to effectively handle odor complaints, reports of illnesses and potential violations from citizens concerning sludge applications. Currently, no such program exists.

While the DWQ has responded to questions and reports of potential violations by members of our organization, complaints from the general public concerning sewage sludge issues have not been dealt with effectively. We have found that most health departments are unaware of their responsibilities under the state residuals management program and are ineffective when dealing with complaints. There is no real system of recording complaints from the public and in many cases, written complaints and calls to DWQ have gone unanswered. A protocol developed by Steve

Wing, Department of Epidemiology, UNC School of Public Health, for recording complaints, could be utilized by DWQ for this purpose.<sup>7</sup>

17. Require the permittee to provide indemnity coverage to farmers or end-users who use sewage sludge as a substitute “fertilizer.” It should be noted that the business of land applying sewage sludge is a privatized industry whose primary interest is profit, most times to the detriment of human health and the environment. The more sludge spread, the bigger the profits for private equity firms like the Carlyle Group which purchased Synagro last year for \$772 million.<sup>8</sup>

Companies that are bought out by private equity firms are not subject to the same reporting requirements that apply to publicly traded companies, and the Carlyle purchase of Synagro effectively eliminated requirements that Synagro provide certain information about its business to the public and to federal agencies. The added secrecy makes it more difficult to obtain information on legal complaints and risk factors associated with Synagro’s sludge spreading. There have been several lawsuits filed against Synagro, many of which have ended in out of court settlements with gag orders attached. Requiring the permittee to provide insurance to farmers will help protect their livelihood should any accident, health or environmental problems arise after the Carlyle Group removes Synagro from its portfolio.

18. OEEB recommendations. In closing, we would like the DWQ to provide a response as to why none of the several recommendations made by the OEEB concerning the state’s residuals management program were considered for implementation within the 2T Rules. At the same time we are strongly recommending that the DWQ consider adding the following changes based on the recommendations in the OEEB’s report, “Human Health Risk Evaluation of the Land Application of Sewage Sludge/Biosolids:”
  - a. Increase setbacks from sludge fields to residential areas, schools, churches, private wells, surface waters and adjoining properties;
  - b. Implement a health surveillance study of property owners with private wells next to fields where sewage sludge is being applied;
  - c. Institute a monitoring program of wells at all non-dedicated sites where sewage sludge is being applied;
  - d. Assess how topographical features would be considered in the site assessment and develop criteria for acceptable and unacceptable topographical features;
  - e. Take steps to minimize or eliminate odors from land applied sewage sludge through the use of increased setbacks or buffers;
  - f. Assess whether land application at a particular site is not in excess of its capacity to absorb sludge to protect against groundwater contamination.

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<sup>7</sup> “A Protocol for Documenting & Investigating Symptoms Reported Near Biosolids Land Application Sites,” Steve Wing, Ph.D., Department of Epidemiology, UNC School of Public Health, Nov. 2008 version: [http://www.exchangeproject.unc.edu/envir-issues\\_sub/biosolids.html](http://www.exchangeproject.unc.edu/envir-issues_sub/biosolids.html)

<sup>8</sup> SEIU: Calls on Carlyle: [http://www.seiunews.org/SEIU\\_Calls\\_on\\_Carlyle\\_to\\_Disclose\\_Info\\_About\\_Its\\_Sewer\\_Sludge\\_Business.aspx](http://www.seiunews.org/SEIU_Calls_on_Carlyle_to_Disclose_Info_About_Its_Sewer_Sludge_Business.aspx)

Thank you for your consideration.

Respectfully submitted,

Sue Dayton  
Blue Ridge Environmental Defense League  
North Carolina Healthy Communities Program  
PO BOX 44  
Saxapahaw, NC 27340  
(336) 525-2003  
[sdayton@swcp.com](mailto:sdayton@swcp.com)