



Stockpiled sludge contaminates groundwater. Credit: Mike Eggleston

The Sludge Scam Part 2

by Christopher Rueggeberg
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Part One documented how EPA is working with industry to promote sludge spreading, despite increasing evidence that the practice can harm living organisms and the environment. Part Two describes the legislative battles between those who believe that sludge farming policies are neither sustainable, scientific, or safe, and those who continue to promote and defend this controversial practice.

Sludge Farming in New Hampshire

Spreading treated municipal sewage sludge and industrial wastes

on New Hampshire farms and forests is especially risky. Many of our soils are shallow, acidic, and often excessively drained. Acid precipitation, high and fluctuating water tables, sloping land surfaces, and a cool, moist climate facilitate pathogen regrowth and mobilization of numerous sludge pollutants that can then impact soils, crops, and the state's valuable water resources.

In addition, the more frequent and intense wind and rainstorms, resulting in unprecedented flooding, alternating with droughts, as well as unpredictable winter thaws, all associated with climate change, present additional challenges to those spreading sludge under the state's unprotective management rules.

Greenland NH - A Wake-Up Call

In October 1995, 640 tons of municipal sewage sludge were dumped and chain dragged on a ten acre hayfield in Greenland, NH. Dozens of abutters in this quiet neighborhood experienced the usual symptoms associated with sludge-exposure: nausea, vomiting, rashes, burning eyes, sinus infections, and respiratory problems. Some were hospitalized. One young man died of respiratory failure.

Similar incidents happening across the country tragically dramatize the inadequacy of the federal rule, 40 CFR Part 503 [the 503s] that governs the land application of sewage sludge. Thanks to State Representative Derek Owen and an alert House Environment and Agriculture

Committee, stricter state rules were promulgated four months after Shayne Conners' death.

NEBRA and the Sierra Club Clash over the State Rules

During the next ten years, attempts by the New Hampshire Sierra Club and other conservation, farming, and health organizations to restrict land application or, to at least, up-date these rules, as new scientific information became available, were continuously thwarted by NEBRA, the trade association of the waste industry and one of the nation's most aggressive sludge lobbying groups. NEBRA (New England Biosolids and Residuals Association) received generous grants from national sewerage industry trade groups and EPA's Office of Water to promote and defend the 503 federal rules, and to resist tightening the state rules.

Manipulating Data

In 1998, Sierra Club activist, Helene Shields, while examining Department of Environmental Service (DES) files, discovered that the agency was routinely changing test results of highly polluted out-of-state sludges, so they could legally be land applied in New Hampshire. The Sierra Club took the state to court for manipulating data. This resulted in a reduction of sludge spreading, especially of sludges generated in other states.

Gravel Pit Sludging at 500-1000 Tons Per Acre

Sludge farming has never been popular in New Hampshire. With more "incidents" being reported across the nation, and mounting evidence that current land application policies are not based on sound science, it became increasingly difficult for sludge brokers to find disposal sites. So they targeted mined sand and gravel pits, using huge amounts of this contaminated waste for "reclamation" as well as for making "artificial top soil."

For sludge FARMING, the legal application rate is 3-10 tons per acre; but for RECLAMATION of disturbed sites, such as sand pits, it is perfectly

legal to apply sludge at 500 to 1000 tons per acre! Since sludge brokers receive \$40 to \$60 for each ton of sludge they remove from wastewater treatment plants, gravel pit sludging at 500 to 1000 tons per acre became an extremely convenient and profitable enterprise.

Groundwater at Risk

The problem is that these excavations are generally located directly above stratified drift aquifers, sources of unpolluted drinking water. Often sand pits are mined to within inches of the water table on highly permeable soils. Repeatedly the Sierra Club warned legislators that to place ANY contaminated waste, much less huge amounts of sludges on these sensitive sites, defied all common sense. Yet NEBRA persuaded the state to help fund research that it hoped would demonstrate that if sewage sludge were mixed with paper mill sludge [an unstable industrial waste product], groundwater quality would be protected. At public meetings legislators were told that paper mill sludge "would act like a sponge and absorb all the pollutants of sewage sludge."

Warm Season Grasses

To strengthen its argument that gravel pit sludging was a sound environmental practice, NEBRA told legislators that if this contaminated waste was NOT used for reclamation, precious topsoil would have to be stripped from New Hampshire's diminishing farmland for establishing a plant cover. NEBRA, however, failed to tell legislators that since 1989, the state no longer required the use of topsoil for reclamation because warm season grasses that do not need topsoil could effectively stabilize these disturbed areas. In fact, since 1990, Ossipee Aggregates had successfully used native species of non-invasive warm season grasses to re-vegetate some of their sand pits. These grasses thrive in sandy soils, are more drought and flood resistant than sludge-grown conservation grasses, control erosion, and protect groundwater quality.

In 2000, State Representative Betty Hall introduced a bill, supported by

the Sierra Club and the state's other key conservation groups, for a one-year moratorium on gravel pit sludging. In an eight-page letter to legislators, NEBRA warned that such a moratorium "would destroy a valuable sound recycling program that served to improve New Hampshire's landscape," and accused the Sierra Club of spreading "urban myths," "violating scientific protocol," and disseminating "outright falsities."

The Sierra Club responded to these unwarranted attacks with a carefully researched paper, *Policy Driven Water Pollution: the Dangers of Using Sludge to Reclaim NH Gravel Pits*, documenting why this practice could not be defended on scientific grounds.

UNH Research Vindicates the Sierra Club Position

Two years later, the final result of the NEBRA/UNH research vindicated the Sierra Club position. Test results showed very high levels of nitrates, and many other sludge contaminants in several monitoring wells. One well indicated lead levels at 461 part per billion, thirty-one times the maximum level allowed in drinking water. At the same time, monitoring wells at a sludged Maine gravel pit showed high levels of arsenic. Worse, groundwater under a sludged Hooksett gravel pit had become so contaminated, that abutters could no longer use their wells, and had to be hooked up to

Manchester's Public Water system. NEBRA had misled legislators, the media, and the public with its eight-page letter that purported to provide accurate "technical" information about the benefits of gravel pit sludging.

Local Control in Jeopardy

The gravel pit fiasco prompted many more New Hampshire towns to put in place local sludge ordinances that were more protective than those of the state. By 2002, almost sixty towns had taken advantage of a provision in the state and federal rules that permitted communities to exercise local control over land application policies within their borders.

An attempt in 1999 by the sewerage industry to eliminate local control was soundly defeated by the legislature. However, NEBRA's partner, the New Hampshire Water Pollution Control Association (NHWPCA), had already in place another policy to discourage local control: In 1997 it decreed that those towns with sludge ordinances stricter than those of the state, would no longer be able to ship their septage to treatment plants, or would have to pay 50% more for such services. Several attorneys and environmental groups consider this policy discriminatory, perceiving it as a kind of blackmail. They question the legal, regulatory, or statutory authority of

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New Hampshire's Bearcamp River. Forest ecosystems such as this can be disrupted by sludge spreading. Credit: Jim Sconyers

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the sewerage industry to force unwilling rural towns to manage sludge through land application, especially sludges not generated within their borders.

The Defeat of House Bill 722

NEBRA and its partners continue to promote sludge farming as safe and sustainable. Its website absurdly claims that sludge use produces “healthier soils and crops,” posts anecdotal accounts of a farmer who is using sludge, and invites the public to tour carefully orchestrated sludge spreading events. However these last ditch attempts to rescue its failing “public acceptance campaign” appear to no longer be working. For two and half years, NEBRA lobbied intensely for what became House Bill 722, a bill that would make it easier to spread sludge on land along designated protected NH rivers. On the day the vote for House Bill 722 was scheduled, NEBRA barraged legislators with leaflets touting the benefits of sludge, and again questioned the credibility of the Sierra Club and other conservation groups. Legislators were not persuaded by this last-minute diatribe against those of us who wanted to protect this valuable farmland and in February 2006 they overwhelmingly defeated HB 722.

Toward a Waste Management Solution

Several months ago, New Hampshire’s Environmental Commissioner Mike Nolin said “what we need is to get our arms around all the solid waste stream issues in the state. Construction and demolition waste, septic waste, garbage, and sludge.” We agree. To get there, we suggest a three-stage approach:

(1) Waste reduction by encouraging or legislating residual-free composting and recycling of those items that can safely be recycled.

(2) Septage and sludge management through bioreactor landfills. Bioreactors are being built in several other states for this purpose. They actually depend on septage and

sludge to accelerate the decomposition of other wastes, thus dramatically extending the life of the landfill, while producing methane as a renewable energy source.

(3) Bioreactors are an interim solution. For clean, long term, sustainable waste management of non-recyclables, that leaves no toxic residue, produces ultraclean energy, and meets or exceeds the most stringent emission standards, we recommend state-of-the-art, high-temperature, waste-to-energy gasification. For example, a process developed in Switzerland called Pyromex is being used to build several gasification plants in this country and Europe. Pyromex was recently selected by the European Energy Environmental and Sustainable Development Program as “the only suitable system available on the market today.”

The current policies governing the disposal of sewage sludge and industrial residuals are neither scientific, sustainable, or safe. We believe that it is time to phase out incineration and land application of sludges and move the state into 21st century waste management solutions.

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- *The Sludging of New Hampshire: Answers for Local and Town Officials in New Hampshire*
- *Policy Driven Water Pollution: The Dangers of Using Sludge to Reclaim Gravel Pits in New Hampshire*

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