



August 30, 2013

Mr. Brian Sierant MC-148
Texas Commission on Environmental Quality
Water Quality Division
P. O. Box 13087
Austin, TX 78711-3087

Dear Mr. Sierant:

On behalf of the Water Environment Association of Texas (WEAT) and the Texas Association of Clean Water Agencies (TACWA), we want to thank TCEQ for the well-organized and professionally conducted stakeholder meetings on odors from biosolids land application. We appreciate the agency's time and commitment of resources to ensure that all stakeholders have an opportunity to participate in this discussion.

As we noted in our letter dated June 11, 2013, the benefits of biosolids for both soil and vegetation are numerous and well recognized. While land application of biosolids offers clear benefits to farmers, we recognize that adjacent landowners may have concerns. We believe that there is a way to continue to take advantage of the benefits of biosolids land application while still being responsive to community concerns. We would like to offer the following suggestions in order of preference to meet this objective:

Proposed Options

1. **Continue with current rules, and address odor issues on a case-by-case basis.** Though well publicized, odor complaints are relatively few considering the number of biosolids programs that are operational in the state, and the volume of biosolids that are land applied in Texas annually.

As we noted previously, land application of biosolids is already well regulated and there are tools for TCEQ to use to work with utilities that have had complaints without undue new restrictions on programs that are not having complaints. There are excellent resources available that generally provide producers with a variety of tools to help reduce odors, including (but not limited to) those listed below:

Biosolid Type	Resource	Description
All	National Biosolids Partnership <i>Manual of Good Practice</i>	Provides Best Management Practices (BMPs) for both land application and for solids

		processing as well
Anaerobically-digested	Water Environment Research Foundation (WERF): Biosolids Odor Reduction Roadmap	Builds on a decade of research, provides a decision matrix and multiple options to help generators reduce biosolids odor
Lime-stabilized	<ul style="list-style-type: none"> • WEF/EPA Solids Process Design and Management Manual • DC Water Research* 	Describes impact of polymer dose, lime dose and mixing on odor generation and suggests mitigation approaches

*Summarized in WEF Proceedings, *Odor Mitigation from Lime Stabilized Biosolids* (Murthy, et al., 2001)

It may be possible to develop a guidance document for reducing biosolids odors that incorporates elements from some or all of the documents above, but is tailored to reflect Texas-specific issues and concerns.

2. **Threshold Approach** – Revise the rules to include triggers which would require development of an Odor Management Plan. This approach might also involve the development of a guidance document with BMPs that generators could use to develop their Odor Management Plans.

3. **“Odor Category” Approach** – This approach, adopted in Quebec (and later, Ontario) Canada sets odor levels for land applied materials (other than manures), including different biosolids products, and determines setbacks/limits accordingly. Generators are free to use testing to show that their material is better than the default odor assumption for their biosolids category, and therefore can apply for reduced setbacks. The Ontario “Odour Categories”, especially, reflect, to a large extent, state-of-the-art research on biosolids odors and may be the most progressive in North America. The adoption of either approach in Texas would require TCEQ to adopt new (albeit well accepted and rigorous) odor measurement methods.

Additional information on the Quebec approach can be found in the attached paper entitled “*Odor Classification of Biosolids to Mitigate Nuisances: a Québec Approach*” that was presented at WEFTEC 2010. As noted in the paper, the implementation of the approach has reduced odor complaints from land application in the province.

Odor categories listed in Ontario Regulation 267/03 are summarized below. Additional information on the Ontario approach can be found at:

http://www.omafra.gov.on.ca/english/nm/regs/nmpro/odourtoc_09.htm

Odor Category	Odor Concentration (odor units)*	Biosolids
OC1	>500	<ul style="list-style-type: none"> • Anaerobically digested liquid
OC2	500 to >1,500	<ul style="list-style-type: none"> • Aerobically digested liquid • Sewage biosolids which have been dewatered by means other than a centrifuge operated at more than 2000 rpm and stored less than 30 days after dewatering is complete

OC3	1,500 to <4,500	<ul style="list-style-type: none"> • Sewage biosolids which have been dewatered by a centrifuge operated at 2000 or higher rpm • Sewage biosolids which have been dewatered and stored for 30 days or more after the dewatering process is completed
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* Odor units are also expressed in units of “dilutions-to-threshold”. Regardless, analyses are conducted in accordance with EN-13725, the predominant odor measurement method used in the US.

Response to Comments

We would also like to take this opportunity to address several comments (shown in italics) made by participants at the public hearings that we believe are without basis in fact, or are unrelated to the focus of the stakeholder meetings.

1. *Biosolids land application has caused surface and groundwater contamination in Texas.* We are not aware of any documented water quality issues which have been tied to biosolids land application. Biosolids used for land application undergo a rigorous treatment process regulated by TCEQ for quality and safety, and have been safely applied in locations all across Texas for many years without documented water quality concerns. We believe this is a mischaracterization of the safety and application of biosolids in Texas.

2. *Biosolids used for land application contains large amounts of pharmaceuticals and other organic contaminants including hazardous waste.* While biosolids may contain pharmaceuticals, personal care products and other organics (typically grouped under the headings of Endocrine Disrupting Compounds, EDCs, or Trace Organic Chemicals, TOxCs), research has shown that they are present in very small quantities, generally found in parts per million or parts per billion concentrations (EPA, 2009; Monteith, Sterne and Dong, 2009). For perspective, a recent study (Hebert, 2010) found the pharmaceutical Carbamazepine at a concentration of 8 parts per billion – the equivalent of one pill spread out over 2.5 acres each year (some patients take one or more of these pills each day).

Research continues into the fate and transport of these compounds in land applied biosolids, and while it is important to better understand the interactions of these compounds in the environment, it is also important to note that to date, research shows that:

- 90% of EDCs in wastewater are degraded through activated sludge treatment and do not enter biosolids (Furlong, Stinson and Quanrud, 2010).
- Compounds that do enter biosolids are likely to be degraded by the large microbial populations in soils (Overcash, et al., 2005).
- Other environmental sources of these materials can far outweigh the potential exposure from biosolids.

The sources listed below contain information on the concentration of EDCs in biosolids.

- Beecher, N. (2008) PPCPs in Wastewater and Biosolids. *Clearwaters*. Available through: <http://www.nebiosolids.org/uploads/pdf/Beecher-PPCPs-08.pdf.pdf>
- EPA (2009) Targeted National Sewage Sludge Survey , EPA-822-R-08-014

- Furlong, E.T., Stinson, B., and D.M. Quanrud (2010), Fate of Estrogenic Compounds During Municipal Sludge Stabilization and Dewatering. Water Environment Research Foundation, 2010, Alexandria, VA
- Hebert, M. (2010) Biosolids Application and the Precautionary Principle: Comparison with Current Agricultural Practices. Available through www.mddefp.gouv.qc.ca
- Monteith, H., Sterne, L. and S. Dong (2009) Emerging Substances of Concern in Biosolids: Concentrations and Effects of Treatment Processes, Hydromantis, Inc., University of Waterloo, Trent University, Project No. 447-2009, Prepared for Canadian Council of Ministers for the Environment
- Overcash, M., Sims, R.C., Sims, J.L. and J.K.C. Nieman (2005) The Fate of Organic Compounds in Land-Applied Waste. *Journal of Environmental Quality* 34:29-41

We also note that the treatment facilities generating most of the biosolids are greater than 5 MGD in size. As such, they are required to implement the Federal Pretreatment Program, which regulates what industries can and cannot discharge into the sanitary sewer. Testing of wastewater occurs at the industrial level prior to entering the treatment facility, during the treatment process to insure treatment is maximized, and at the end of treatment to insure the products of the treatment process meet all regulatory requirements.

3. *Millions of tons of biosolids generated outside of Texas are being disposed of in Texas.* Biosolids from New York City were land applied on a west Texas ranch in the 1990's. Operators of this project ceased this practice after several years due to the high cost of transporting the material to Texas. See <http://thewatchers.us/wef/WestTX-factsheet.pdf> for information on the benefits of this land application project on soils.

4. *Florida has banned land application of biosolids.* This is an inaccurate statement. Florida has, in fact, recently issued new rules for the management of biosolids and one of the stated goals of the new rule is to increase public confidence in the beneficial use of biosolids. That being said, the rules (Chapter 62-640, Florida Administrative Code) do include a prohibition against land application in the Wekiva Study Area, as well as prohibitions that reflect existing statutory restrictions in the Lake Okeechobee, St. Lucie River, and Caloosahatchee River watersheds. These areas have historically had significant nutrient issues, and it should be noted that the prohibitions in these areas alone are intended to support comprehensive efforts to reduce nutrient loads in these specific watersheds.

5. *Professionals in the wastewater treatment industry cannot be trusted to operate plants correctly and protect the environment.* This is a gross mischaracterization of the capabilities and trustworthiness of the outstanding public servants working in the wastewater treatment operations industry in Texas. As the primary spokesperson for the two organizations representing the wastewater treatment community, I would like to point out that the thousands of members within our organizations have a long history of working cooperatively with state and federal regulators, engineering firms, academia and the public to resolve issues related to wastewater treatment dating back to 1929. In fact, the vast majority of improvements in human health over the last century are directly correlated to advances in water and wastewater treatment operations and the dedication of the fine men and women who work daily to ensure safe clean water for our environment. Our goal is to find solutions based on sound science and not speculation and rumor. We believe that the accusations made during the course of these meetings that the dedicated and licensed public servants who operate wastewater treatment plants are dishonest and not to be trusted are totally without merit and uncalled for in this setting.

Thank you for the opportunity to participate in this stakeholder process. WEAT and TACWA stand ready to assist the agency with whatever technical support is needed in its evaluation process. We are available to meet with the agency at any time to discuss the options presented here in further detail.

If you have any questions or need additional information, feel free to contact me at 512-924-2102 (carol@weat.org) or Lynne Moss at 512.346.1100 (mosslh@cdmsmith.com).

Sincerely,

A handwritten signature in cursive script that reads "Carol Batterton".

Carol Batterton
Executive Director
Water Environment Association of Texas
Texas Association of Clean Water Agencies
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