



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 10 2008

OFFICE OF
WATER

The Honorable Barbara Boxer
Chairwoman
Committee on Environment and Public Works
United States Senate
Washington, DC 20510

Dear Madam Chair:

As you and your colleagues consider sewage sludge issues, it's important for you to know the facts, the science, and the work the Environmental Protection Agency (EPA) is doing to ensure protection of human health and the environment. This letter and enclosures provide an update on the management of biosolids and EPA's action plan for continued effective management of biosolids.

Today over 16,000 sewage treatment facilities serve more than 220 million Americans as well as thousands of commercial and industrial facilities. Everyday, these facilities treat nearly 34 billion gallons of wastewater, producing clean discharges and generating over seven million tons of sewage sludge biosolids annually for use or disposal. And this number will continue to increase with population growth. It is critical that we have effective and protective sewage sludge biosolids management options to continue to support our Nation's needs for clean water.

In response, EPA has established a protective regulatory framework to manage the use and disposal of sewage sludge and to provide the flexibility and accountability contemplated by the Clean Water Act (CWA).

EPA in partnership with States and Local governments has made important progress in managing and reducing the levels of industrial pollutants in treated water and biosolids through industrial pretreatment requirements. In addition, EPA has established regulations that govern final disposal or use of biosolids which are land applied to condition the soil for vegetation, land disposed, and burned in a sewage sludge incinerator. EPA's risk assessment methodologies for biosolids have received extensive scientific review and public input both during their development and subsequently. The National Academy of Sciences (NAS) concluded that properly treated and managed biosolids presents little risk to crops, consumers, and the environment. The NAS has also



emphasized however, the need for additional scientific work to address some remaining uncertainty about potential adverse human health effects.

EPA's goal is to address the need for additional information while continuing to ensure that the biosolids program provides safe, effective use and disposal of biosolids that protects public health and the environment. We believe the current regulations are protective. But we recognize that uncertainty persists and new challenges are emerging, so we are working proactively to strengthen the science and fill the gaps in our knowledge. Over the past several years, EPA has increased its efforts in a number of areas to better understand the science and technologies associated with biosolids. We are focused on learning more about the occurrence of contaminants in biosolids. In addition, we are working to better understand the effectiveness of treatment technologies in removing or stabilizing contaminants in biosolids to help direct our course of action. We are developing analytical methods to improve pollutant detection and quantification capabilities. We are conducting national studies and surveys. For example we are looking for new pollutants such as pharmaceuticals through the Targeted National Sewage Sludge Survey and POTW study. We are also partnering with government agencies, stakeholders, and the private sector on research and outreach.

Since 2003, our biosolids work has been guided by the 14 point Action Plan EPA developed in response to NAS recommendations in 2002. In each of these 14 areas, work is completed or in progress. As we look ahead, we are focusing on a three-part blueprint for action:

- Implementing EPA's statutory obligations under the Clean Water Act (CWA);
- Advancing the State of the science; and
- Communicating the best available information.

Enclosed is a more detailed description of our activities in each of these areas.

As we focus on implementing this three-part blueprint and look ahead, we also recognize the importance of providing accurate information about current and past practices. An example of this is the enclosure providing information on issues highlighted in misleading media reports about biosolids application in East Saint Louis, Illinois in 2001.

In conclusion, better sewage collection, effective pretreatment of industrial wastewater, improved sewage treatment and collection systems, and appropriate sewage sludge management have combined to benefit our Nation's waterways and support public health. EPA continues to support biosolids management in compliance with Federal and state regulation and is committed to ensuring that the sewage sludge regulations protect public health and the environment. We believe EPA's biosolids management regulations are protective, but also acknowledge there is more we can and will do to reduce uncertainty in our knowledge. Good science and information must and will continue to drive our decisions. We will continue to evaluate health effects, occurrence, treatment,

and risk reduction strategies so that we can make sound decisions to protect public health. We will continue to use an open and deliberative process. We will continue to work with states, local government, industry, and the public to ensure the safety of the nation's biosolids.

If you have questions or if you need any further information, please contact me or have your staff call Christina Moody (202-564-0260) or Denis Borum (202-564-4836), in EPA's Office Congressional and Intergovernmental Relations.

Sincerely,

A handwritten signature in black ink, appearing to read "B. H. Grumbles", with a stylized flourish at the end.

Benjamin H. Grumbles
Assistant Administrator

Enclosures

cc: The Honorable James Inhofe, Ranking Member

Enclosure 1

EPA Actions on Biosolids:

As we complete the earlier 2003 Action Plan, we are looking ahead and following a three-part blueprint for continuing action into the future. EPA will be:

- Implementing the statutory obligations under the Clean Water Act;
- Advancing the state of the science; and
- Communicating the best available information.

Each of these is discussed below.

Implementing Statutory Obligations

EPA is committed to fulfilling its statutory obligations under the CWA and working to ensure biosolids are managed and used to protect public health and the environment. EPA is required to collect and analyze available data not less than every two years, for the purpose of determining whether there are new pollutants in biosolids that should be regulated. Beginning with the 2003 Biennial Review, EPA has conducted the required biennial reviews of Part 503 to identify additional pollutants of potential concern in biosolids. We will initiate work next year on the 2009 Biennial Review.

Our focus on developing new analytical methods is enabling our recent Biennial Reviews to focus on a much larger number of contaminants in biosolids. Our newly developed methods have enabled us to analyze for an additional 145 contaminants including certain metals, organic chemicals, inorganic ions (e.g., nutrients), polybrominated diphenyl ethers (PDBEs or flame retardants), pharmaceuticals, personal care products, steroids, and hormones.

Advancing understanding of treatment and potential risks of land application:

Sound science and reliable information must be the foundation for any Agency decision. For biosolids, as noted by NAS and others, work is needed particularly in the areas of risk assessment, occurrence of contaminants in biosolids, and treatment effectiveness. We are working and making progress in each of these areas.

- *Risk Assessment* – We are investigating different microbial risk assessment models, particularly quantitative microbial risk assessment, to help determine the best way to conduct microbial risk assessments with biosolids.
- *Analytical Methods* – As noted above, we are working to develop analytical methods that will allow us and others to reliably detect and quantify contaminants in biosolids, which are a very complex and technically challenging material to analyze. We have:
 - Developed new, state-of-the-art analytical methods for pharmaceuticals, personal care products, steroids, hormones, PBDEs (flame retardants), and a number of pesticides.
 - Developed and validated methods for measuring fecal coliform and salmonella in sewage sludge, two indicators for which monitoring is required under the Part 503 regulations.
 - Working to develop new molecular methods for rapidly detecting helminth ova and human enteric viruses in sewage sludge.
- *Research and Studies* – we are conducting or are planning to conduct, research targeted at strengthening our understanding of occurrence, exposure or treatment effectiveness, including:
 - Conducting the Targeted National Sewage Sludge Survey of 74 randomly selected wastewater treatment plants to determine whether specific contaminants may occur in biosolids, and if so at what concentration. We will complete this study this fall.
 - Carrying out a study of PPCPs at nine wastewater treatment facilities to better understand what is going into the plant for

treatment and what is coming out in the discharge and in biosolids (sludge). We expect to complete this study by December 2009.

- Funding external research projects to assess occurrence, including a grant to the University of Florida to study the fate and transport of emerging contaminants like triclocarban and triclosan (antiseptics widely used in soaps and other products) in biosolids, and a grant to Duke University to study the presence, fate and treatability of steroid and hormone contaminants in wastewater and biosolids.
- Determining the feasibility of developing predictive tools based on wastewater modeling to determine pollutant occurrence in a more cost-effective way.
- Partnering with the United States Department of Agriculture on a field-scale evaluation of biosolids application to assess releases of pollutants to air and soil. A report is being developed.
- Partnering with external groups such as the Water Environment Research Foundation (WERF) to ensure that treatment of biosolids is effective, including evaluating whether pathogens reactivate or regrow in biosolids following certain types of treatment.
- Working with WERF, the Centers for Disease Control and Prevention, and others, EPA is providing technical support for the development of a surveillance and investigation system for illnesses reported by neighbors of biosolids land application sites.

Communicating the Best Available Information

One of the most difficult tasks we face as public health and environmental officials is communicating risks in the face of uncertainty. We know that it is

critical that we share information with the public in a timely way as it is generated. It is important to communicate with the public so that they can help shape effective public policy in this area and make informed choices. However, we also know that we must identify the best way to communicate that information to the public so that it can be clearly understood. This is a role we share with state and local agencies, researchers, and industry. We will continue to work with all of our stakeholders to better communicate issues associated with biosolids.

Additionally, EPA has been working to get the best available information to wastewater professionals, such as that needed to develop and implement voluntary environmental management systems (EMS). These systems are non-regulatory procedures and management practices that allow organizations to analyze a full range of environmental impacts and reduce these impacts over time through pollution prevention and continual improvement of their operations. The EMS program for biosolids is designed to assist treatment facilities, biosolids managers and contractors improve their overall compliance and operations. The National Biosolids Partnership (WERF, the National Association of Clean Water Agencies, and EPA) has developed guidance and tools to help organizations adopt EMS.

Enclosure 2

E. St. Louis Biosolids Project

An Associated Press (AP) article, dated April 13, 2008, entitled: *Sludge fertilizer program spurs concerns*, erroneously reported on the use of sewage sludge in "...poor, black neighborhoods in Baltimore and East St. Louis" and made numerous misleading statements regarding what was done. The U.S. Department of Agriculture (USDA) and the U.S. Department of Housing and Urban Development (HUD) conducted that study. The Environmental Protection Agency (EPA) was not involved in the Baltimore, MD study but was involved in the E. St. Louis project. This document summarizes what occurred in the E. St. Louis project.

In the East St. Louis study no human experimentation with sewage sludge of any sort was conducted. No human subjects were exposed to any experimental sewage sludge procedures or any sewage sludge risks, and no homes or residential neighborhoods were exposed to sewage sludge of any sort. Human experimentation was never contemplated or planned for this study.

Two important clean-up activities were conducted by EPA, and others, in the East St. Louis study to protect human health and welfare from the detrimental effects of lead contamination in urban soils. First, lead contaminated soils were removed by EPA from selected urban sites using the traditional clean-up procedure of removing the contaminated soil. And in the second activity, a site remediation project was conducted to determine how well the lead in the contaminated soils could be cleaned-up using a Class A (the highest quality) biosolids compost material to help grow a thick turf cover over the soil.

The biosolids compost used in this study (and in Baltimore, MD) was not raw sewage sludge, but was a highly processed and tested organic material, mixed with wood chips and saw dust, that is required to meet specific EPA standards of cleanliness before any kind of use. The Class A biosolids compost, which was used on an industrial site in E. St. Louis to clean up the lead contamination, is routinely used as a fertilizer and soil conditioner in agricultural operations around the Country, on parklands, ball fields and have even been used on the White House grounds. Class A biosolids compost is readily available at your local home improvement store, or garden nursery, in bags for every day use in gardens and on residential lawns.

More specifically, through blood screening conducted in the 1990's by the Illinois Department of Public Health (IDPH) and St. Mary's Hospital, an alarming rate of blood lead poisoning among the youth within certain neighborhoods in the Metro-East area of St. Louis was identified. In 1999, the IDPH determined through soil sampling that several urban sites, predominantly bordering on, and including former industrial locations, had soils that contained lead levels in excess of U.S. EPA guidelines and that these were a contributing source to the high blood lead levels in the children.

In 2000, as part of the joint Metro-East Lead Collaborative, EPA worked with the Illinois USDA Natural Resources Conservation Service (USDA-NRCS) to implement the demonstrative lead remediation project. EPA provided scientific advice and technical support through the participation of three scientists stationed in our Chicago regional office at the time. EPA did not provide funding or any grant resources. The USDA-NRCS provided \$50,000 in funding.

The biosolids compost remediation study was conducted on a vacant industrial site - the former location of Western Forge Works - a former metal forging operation and the suspected source of the contaminated soils there. The site had restricted access through fencing, gates and signage, and project staff were present on-site during the day time, preventing residents of East St. Louis from gaining access to the site. A report entitled: *East St. Louis "Biosolid" Lead Remediation Project*, explains the entire project in detail.

As a result of the study, the Collaborative was able to show that high concentrations of lead in soil could be reduced significantly with biosolids compost being applied and tilled into the soil to grow a healthy turf layer over the top. This study shows that a site, so treated, could cost-effectively reduce human exposure to lead in soil, thereby reducing blood lead levels in urban children and adults.

The Agency is committed to ensuring that biosolids use around the Country is done so in a safe and effective manner. EPA maintains standards (the Part 503 biosolids regulations) for biosolids use that are protective of public health and the environment. Section 405(d) of the Clean Water Act requires that EPA review the Part 503 regulations not less than every two years for purposes of reviewing and adding new, or newly-recognized, pollutants to the list of regulated pollutants in biosolids and ensuring these safeguards reflect the latest scientific information.