



**U.S. Environmental Protection Agency  
Office of Water**

**Office of Science & Technology**  
*... applying science & technology to protect water quality*

---

## **Final Response to the National Research Council Report**

### **Report on Biosolids Applied to Land and the Results of the Review of Existing Sewage Sludge Regulations**

December 2003; EPA-822-F-03-010

EPA is releasing a final action plan that explains the Agency's response to the recommendations in the July 2002 National Research Council (NRC) report entitled "Biosolids Applied to Land: Advancing Standards and Practices." The action plan is an important step in setting new priorities for the sewage sludge (also known as biosolids) program. EPA is also announcing the final results of its review of existing sewage sludge regulations to identify additional toxic pollutants that may need to be regulated.

---

### **National Research Council (NRC) Report**

Over the past decade, citizens and environmental organizations questioned the adequacy of the chemical and pathogen standards for protecting human health. The *Clean Water Act (CWA)* requires EPA to review the sewage sludge regulations every two years. To address these concerns and fulfill its commitments under the CWA, the Agency commissioned the NRC of the National Academy of Sciences to independently review the scientific basis of the regulations governing the land application of sewage sludge.

The NRC published "*Biosolids Applied to Land: Advancing Standards and Practices*" in July 2002. They concluded that there is no documented scientific evidence that sewage sludge regulations have failed to protect public health, but there is persistent uncertainty on possible adverse health effects. The NRC noted that further research is needed and made about 60 recommendations for addressing public health concerns, scientific uncertainties, and data gaps in the science underlying the sewage sludge standards.

In April 2003, the Agency released a preliminary multi-year strategy for public comment that responded to the NRC report recommendations. Based on public comments and research priorities from a Biosolids Research Summit held in July 2003 by the Water Environment Research Foundation, EPA developed a final action plan that has four main objectives:

- Determine potential risks of select pollutants
- Measure pollutants of interest
- Characterize potential volatile chemicals and bioaerosols from land application sites
- Understand effectiveness of water/sludge treatment and risk management practices

Due to budget constraints and competing priorities within the Agency, EPA is not able to implement all of the NRC's recommendations. Thus, in its final action plan, the Agency prioritized the recommendations based on public comment and criteria to help identify research and regulatory measures that, when implemented, will maximize public health and environmental protection.

The Agency expects to complete or begin activities, presented in the notice as "projects," within the next two to three years, with the goal of strengthening the sewage sludge use and disposal program. The sewage sludge program encompasses regulatory and non-regulatory components, as described in the projects. Five examples of these projects include:

- Biennial Review under CWA §405(d)(2)(C)
- Methods development, optimization, and validation for microbial pollutants in sewage sludge
- Sewage sludge field studies
- Targeted national survey of pollutants in sewage sludge
- Incident tracking workshop participation

### **Review of Existing Sewage Sludge Regulations**

The CWA requires EPA to review the sewage sludge regulations every two years to identify additional toxic pollutants in sewage sludge that may warrant regulation under section 405(d). EPA conducted this review by evaluating publicly available information on the toxicity, persistence, concentration, mobility, and potential for exposure of additional toxic pollutants in sewage sludge. In April 2003, EPA published a *Federal Register* notice soliciting public comment on the preliminary results of the review, which included a comprehensive list of pollutants found in sewage sludge. At that time, EPA outlined the process it used for compiling and analyzing the comprehensive list of pollutants, but did not identify any additional toxic pollutants for possible regulatory action.

Since publishing the preliminary review results, EPA further analyzed the pollutants on the comprehensive list to determine the sufficiency of available data for an exposure and hazard assessment. EPA then conducted a human health and ecological exposure and hazard screening assessment for those chemicals for which the requisite data was found.

Based on the results of the screening analyses, EPA has identified 15 chemicals for which it will conduct a more refined risk assessment and risk characterization process. EPA will update the concentration data on these chemicals by conducting a targeted sewage sludge survey. The new concentration data and results will serve as a basis for determining whether to propose amendments to the sewage sludge regulations for any of these chemicals. Today's *Federal Register* Notice includes timeframes for taking action on these pollutants.

### **Additional Information**

NRC report: [Biosolids Applied to Land: Advancing Standards and Practices \(PDF\)](#) (284 pp., 1.0) (July 2002)