



Sewage Sludge Use and Disposal Rule (40 CFR Part 503) -- Fact Sheet

The Sewage Sludge Use and Disposal Regulation (40 CFR Part 503) sets national standards for pathogens and 10 heavy metals in sewage sludge. It also defines standards (or management practices) for the safe handling and use of sewage sludge. This rule is designed to protect human health and the environment when sewage sludge is beneficially applied to the land, placed in a surface disposal site, or incinerated. The rule was developed in accordance with the 1987 Amendments to the Clean Water Act.

The rule is also the product of EPA's most comprehensive risk assessment to date, in that it considers the full range of potential impacts sewage sludge could have on public health and the environment. It is based on the most current scientific information and is the first rule published by EPA that considers *potential* ecological effects. Although developed by EPA's Office of Water under the authority of the Clean Water Act, this rule is multi-media in nature and seeks to protect surface water, ground water, air, and land.

The scientific research used to develop this rule shows that most sewage sludge can be safely and beneficially used in a wide variety of ways. It can be applied safely to agricultural land, lawns and gardens, golf courses, forests and parks, and is a valuable resource for land reclamation projects. This rule is designed to protect human health and the environment at an equal margin of safety for any of the regulated use or disposal practices. It sets standards for pathogens and limits for 12 pollutants which have the potential for adverse effects, and explains why limits are not needed for 61 other pollutants that were considered. Additionally, it contains a comprehensive set of management practices to ensure that sewage sludge is beneficially used or disposed of properly.

Where Does Sewage Sludge Come From?

- Sewage sludge is a by-product of treating wastewater from homes, businesses and some industries. In some older cities where sanitary sewers are connected to storm sewers, sewage treatment facilities may also receive runoff from streets, parking lots, and yards.
- Wastewater treatment facilities are designed to separate solids from water to allow the water to be safely discharged. They are also designed to treat the solids to reduce the level of disease-causing bacteria, viruses, and parasites so that the remaining solids can be safely and beneficially used.
- Sewage sludge is a slurry that is 80% to 99% water. The rest is a mixture of organic and inorganic solids and dissolved substances. Sewage sludge contains nutrients

(e.g., nitrogen, phosphorus) and pathogens (e.g., bacteria, viruses, and parasites). Some sludges may also contain small amounts of organic chemicals (such as chloroform) and inorganic chemicals (such as iron).

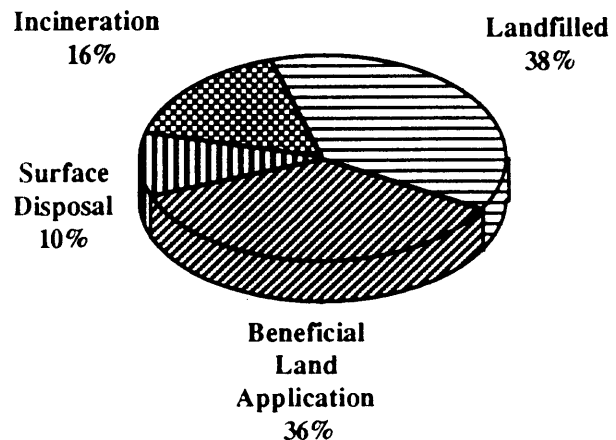
- Sewage sludge must be treated to improve its quality before it can be used or disposed. This treatment involves biological, chemical, physical and/or thermal processes primarily designed to remove water, reduce the level of pathogens, stabilize volatile solids, and make it less attractive to rodents, insects, and other animals.

How Much Sewage Sludge Is There?

- A typical family of four generates up to 400 gallons of wastewater per day. After this wastewater has been treated, about one pound of sludge on a dry weight basis is produced.
- There are approximately 13,000 to 15,000 publicly owned treatment works in the United States which generate 110-150 million wet metric tons of sewage sludge, annually.

How is Sewage Sludge Beneficially Used or Disposed of?

- Sewage sludge has been used with great success on agricultural lands throughout the world for decades. Today, approximately 36% of the United States' sewage sludge is beneficially applied to land, 38% is landfilled at municipal sites, 10% is surface disposed, and 16% is incinerated.



- The numbers are changing, however. The 48% of sludge that is being disposed in landfills or sludge-only disposal sites is decreasing as landfill space has tightened. More and more communities are turning to beneficial applications. New and innovative uses of sewage sludge have been developed in recent years and the science behind established practices has greatly improved.

How Can Sewage Sludge Be Used?

Sewage sludge can be used in many ways. The organic nutrient content as well as its soil enhancing properties make it a practical choice for farmers, landscapers, foresters, and homeowners.

- **Farmland**—Sewage sludge has been beneficially used on farmland for many years. It typically contains \$30 - \$60 worth of nitrogen per ton and is an excellent soil amendment. While it is not a complete replacement for chemical fertilizers, it does do some things chemical fertilizers cannot do. It promotes necessary bacterial activity and improves the structure of soil allowing it to absorb more water, thus reducing dangerous runoff. It is also less expensive than chemical fertilizers.
- **Homes and Gardens**—High quality sludge can be processed (usually composted) into a dry granular substance that is easily handled by landscapers and homeowners. It is also less expensive than commercially available peat moss or top soil. Homeowners and landscapers across the United States - from Philadelphia to Milwaukee to Seattle - have been using sludge derived products for many years. Treated sludge has also been widely used on municipal golf courses and national, historic landmarks such as the grounds of the White House and Mount Vernon.
- **Forests**—Sewage sludge has been used successfully for many years on forested areas to reduce runoff and enhance tree growth. There have been many studies documenting two to three-fold growth increases where trees have been grown with treated sludge.
- **Land Reclamation**—Sewage sludge has also been used with dramatic success to reclaim lands destroyed by strip mining, erosion, and construction. In Pennsylvania, sewage sludge has been used to help reclaim thousands of acres of land at abandoned strip mine sites. Sewage sludge is also being applied to revegetate the side of a severely eroded mountain that

was highly contaminated by a zinc smelting operation in Palmerton, PA.

How Safe Is Sewage Sludge?

- The research conducted for this rule validates the long-standing use of sewage sludge on the land as both safe and beneficial. Sewage sludge is a valuable resource that can be safely recycled back into the land. It has, in fact, been used on farmland for many years with no documented adverse affect on human health.
- The rule contains incentives for communities to produce cleaner sludge and to consider changing from wasteful disposal practices such as landfilling to beneficial projects. The regulation also prescribes how communities may incinerate or otherwise dispose of sludge safely.

Who Is Affected and How?

- The rule includes standards that apply to publicly, privately, and Federally owned facilities that generate or treat sewage sludge, as well as any person who uses or disposes of sewage sludge or septage. These standards consist of pollutant limits, management practices, and operational standards. The regulation establishes pollutant limits for sewage sludge that is applied to the land or disposed of by either placing it in a surface disposal site or by firing it in an incinerator. The regulation also includes requirements for reducing pathogens in sewage sludge that may cause disease. The other requirements of the regulation address the frequency of monitoring, record keeping, and reporting.
- This rule is designed, for the most part, to be self-implementing, meaning that anyone who uses or disposes of sewage sludge must comply with all of the provisions of the regulation whether or not they have a permit. The rule requires compliance with monitoring and record keeping requirements 150 days after the rule is published in the Federal Register. The rule also requires compliance with other standards as soon as possible but no later than 12 months from the date of publication (or 24 months if construction is required).
- EPA intends to include the requirements of this rule in National Pollutant Discharge Elimination System (NPDES) permit applications. Permit application deadlines are being phased in; the first applications being due six months after this rule is published and the rest becoming due over the next several years.