

Information about

Treated Sewage Sludge/Biosolids And Its Application To Land In San Luis Obispo County

Protecting Our Land



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What is treated sewage sludge/biosolids?

Treated sewage sludge, also known as biosolids (TSS/B), is a material formed when wastewater is processed at a treatment plant. Sewage sludge contains nutrients and organic matter that are useful to plants. It can be treated, processed and used as a soil amendment and nutrient source to improve and maintain productive soils and stimulate plant growth. However, contaminants including metals such as arsenic, cadmium, and mercury, organic chemical pollutants and disease-causing organisms are also present in the material.



How are biosolids treated?

When sewage enters a wastewater treatment facility, it goes through many processes. Typically, wastewater enters the treatment plant through screens, where large and heavier materials like sand, gravel, rags and diapers are removed.

After the initial screening, the sewage goes through a process where the wastewater is slowed down and smaller solids are allowed to settle out. This is called primary clarification. The solids, called sludge at this stage, are often sent to a digester, which breaks down and decomposes organic matter. The liquids that went through primary clarification are treated with microorganisms that consume the nutrients in the wastewater. After the microorganisms have done their work, they must be removed from the system just as the primary solids were. This process is called secondary clarification. The resulting sludge may also be sent to a digester, and this process then is called secondary digestion.

The products resulting from primary and secondary digestion have value as nutrients and soil conditioners. When sludge has been treated and meets standards to be applied to land, it is then called biosolids.

It is important to understand that there are many wastewater treatment and sludge

treatment processes, and that they are combined in many different ways. If you want to know how your local treatment plant works, call and ask for a tour.

How much treated sewage sludge do San Luis Obispo County residents generate and how is it managed here?

Approximately 10,000 dry tons of treated sewage sludge/biosolids are produced each year in San Luis Obispo County. San Luis Obispo County has 17 wastewater treatment facilities, of which, approximately 1/3 produce treated sewage sludge/biosolids for land application. Just one facility land applies within the county, the other facilities export their treated sewage sludge to other counties.

Additional use and disposal practices for local biosolids include sending the material to local landfills as either waste or soil amendment and composting with other organic materials.

How can this material be managed responsibly?

The way to assure the safety and welfare for our lands, water, animals and people for current and future generations is to take a cautionary approach and have local control over the uses of treated sewage sludge/biosolids, according to a local TSS/B taskforce coordinated by the San Luis Obispo County Environmental Health Services Division. With a biosolids management program including strict standards, conditions, and prohibitions, the task force and the County of San Luis Obispo believe that the appropriate mechanism will be in place to assure the health, welfare and safety of all.

What Is Changing?

Prior to the development of the task force and ordinance, there was no management plan or local controls for where, how, when, what kind or how much biosolids could be applied in the county. Now we will be able to

implement a program so that only biosolids that meet strict requirements that assure the health, safety and welfare of people, animals, soil and water quality are applied, and only on approved land classifications with ongoing specific testing, notification and monitoring. These changes amount to much more protection than state or federal requirements yet still provide the capability to use the material within the county for those who would like to do so.

How will the land application of treated sewage sludge/biosolids be regulated?

San Luis Obispo County is creating an ordinance to assure local control and protection of county lands as well as assure the safety and welfare of all those who live, work and play in the county.

This ordinance will manage and closely monitor the use of treated sewage sludge/biosolids on county lands as a soil amendment and prohibit biosolids use in areas with high public contact, on certain food crops such as carrots and potatoes, and on inappropriate or sensitive ecological areas.

Each potential application site will have site-specific requirements including the testing of soils and biosolids before and after use, nutrient management plans, disclosure to the public and land owner, detailed monitoring and reporting and county-led inspections.

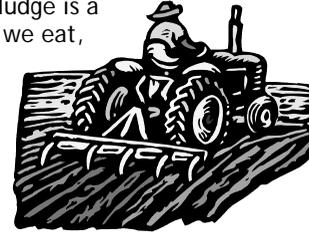
The ordinance will also incorporate a comprehensive set of constituents for setting sewage sludge quality and land accumulation limits that will be more extensive and protective than state and federal standards.

While no evidence has been found of an urgent public health risk from exposure to land-applied biosolids, studies have found that the science used to determine federal standards needs to be updated as chemicals, treatments and technologies have changed. Because of this, we will be cautious by providing additional protections and prohibitions in San Luis Obispo County.

While this ordinance is being prepared, an interim moratorium will be established so that biosolids applications are not increased beyond historical use levels.

What are the benefits of applying biosolids to land?

Since treated sewage sludge is a byproduct of the foods we eat, they contain important nutrients such as nitrogen, phosphorus and potassium as well as other nutrients such as copper, manganese, and zinc. These nutrients are essential for plant growth. Different crops and soil conditions require varying quantities of these nutrients so a nutrient management plan is important so that nutrients are applied at the rates that the vegetation will use. Excess nutrients can negatively impact groundwater.



Biosolids also improve soil structure by adding organic matter, increasing the soil's ability to absorb and hold moisture, and reducing soil erosion. They can be helpful for establishing vegetation on a site for erosion-control and land-reclamation projects.

The cost of managing our treated sewage sludge wastes falls on us as taxpayers. Applying biosolids to land costs 50-75% less than disposing the same material at a landfill. While highly contaminated treated sewage sludge should be disposed of in a landfill, land application remains a viable option for managing some of our wastes when responsible local controls are in place.

Appropriately managing the land application of biosolids and taking advantage of the beneficial aspects will insure that treated sewage sludge applications are handled in the most protective way as justified by current scientific studies and knowledge.

What are the risks of applying biosolids to land?

Treated sewage sludges are complex mixtures that can contain pollutants from household, commercial and industrial wastewaters such as metals, pathogens (which are disease-causing organisms), and chemical pollutants such as medicines and synthetic organic compounds like polychlorinated biphenyls (PCB's). At uncontrolled levels, these pollutants could accumulate in soils or crops, which could potentially affect our health, the health of animals, as well as the longstanding health of our lands and waters. However, pollutant levels can be controlled and one must recognize that fertilizers and pesticides also pose similar types of risks.

Generally, we can manage these risks by:

- ❖ promoting proper pollutant source control and disposal of household and business hazardous wastes,
- ❖ assessing treated sewage sludge quality,
- ❖ assuring appropriate land types and use for application while verifying compatibility with surrounding areas,
- ❖ determining appropriate soil, landscape, and crop or vegetative conditions for biosolids use or restriction,
- ❖ monitoring and overseeing transport, storage, application and land use during and after application, and
- ❖ limiting harvest or grazing until appropriate time periods have elapsed.

These components are all included in the coming local ordinance as well as additional protections such as water well analyses, public and landowner notification, liability protection, and recordkeeping.

Who Was the Task Force?

The Treated Sewage Sludge/Biosolids Task Force was a volunteer group charged by the San Luis Obispo County Board of Supervisors to determine the best way to manage the land

application of biosolids in SLO County. The task force was composed of a very diverse group of individuals representing many segments of the community including the agricultural industries, biosolids generators, applicators, and processors, environmental protection groups, the agricultural extension and commissioner's offices, environmental health specialists, microbiologists, water quality specialists and the general public. The Department of Public Health, Environmental Health Division is coordinating the task force efforts and will be implementing the ordinance.

After 20 meetings over the course of a year, the task force decided by majority vote to create a local ordinance with more stringent standards than those utilized at the state or federal level.

For more information...

Please see the San Luis Obispo County Environmental Health website at www.slopublichealth.org/environmentalhealth or call (805) 781-5544.