

# CITY OF TULSA BIOSOLIDS PROGRAM

The City of Tulsa's Water & Sewer Department staff is responsible for managing the wastewater that is generated by residential, commercial and industrial customers. Every day, our team makes sure that wastewater — on average 55 million gallons each day — is processed, treated and safe to discharge into local streams and rivers.

Wastewater is produced whenever people use water to flush their toilets or take showers, run dishwashers and washing machines or use garbage disposals. This wastewater contains solids that undergo treatment processes to first remove them from the wastewater and then to make them safe for disposal.

The by-products removed from the wastewater during treatment are further processed into a product called "biosolids." These biosolids contain nutrients and can be used by ranchers as a beneficial soil amendment to enhance the fertility of soils. Applying biosolids on agricultural land is a safe, cost-effective and an environmentally responsible way to recycle wastewater by-products and put them to beneficial use.



## How are biosolids made?

Biosolids are produced at the City of Tulsa's Northside and Southside wastewater treatment plants.

- First the solids are separated from the water being treated. These solids then undergo a number of processes to destroy potential disease-causing organisms such as bacteria, viruses and parasites, called pathogens.
- Once treated, the biosolids may undergo further processing to remove excess water. Depending how much water remains, the biosolids may have the consistency of a thick liquid or soil.

## What happens to the biosolids that the City of Tulsa produces?

Tulsa produces approximately 20 million pounds of biosolids each year. State regulations require that this material be beneficially reused or disposed of in a landfill. Tulsa chooses beneficial reuse because it is cost effective and reduces the burden placed on our landfills. This lowers the cost for our customers and provides a benefit to local ranchers.

## How do biosolids benefit ranchers?

Biosolids are used by local ranchers to improve the soil quality of their pastures.

- The landowners that we work with have told us that using biosolids results in improvements in pasture quality and rate of growth.
- Using biosolids also lowers production costs for ranchers by reducing the need to buy more expensive chemical fertilizers.

## Are biosolids safe for humans and pets?

Research and experience have shown biosolids are safe for people, animals and the environment when properly treated and applied onto land.

- The City of Tulsa staff conducts tests to ensure that biosolids meet strict government regulations for safety and quality. That testing closely monitors the level of nutrients, pathogens and metals to ensure that all are within acceptable levels.
- The City of Tulsa follows all government regulations regarding how biosolids are treated, monitored and land applied.

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## Are biosolids safe for the environment?

Research and experience have shown that biosolids are good for the environment. They are biodegradable and release nutrients into the soil to improve soil quality and promote plant growth.

- Biosolids contain natural materials that act as a “sponge” to help reduce runoff and soil erosion and increase water conservation. They also trap carbon dioxide (CO<sub>2</sub>), which naturally occurs in biosolids, in the soil.
- Biosolids can be especially useful to improve poor quality land and turn it back into usable green space, because they add back valuable nutrients that have been depleted and stimulate plant growth.

## Why do biosolids smell?

Like other fertilizers used to add nutrients to agricultural land, biosolids do have some odor. This odor is typically caused by naturally occurring sulfur and ammonia, which are nutrients for plants. Typically this odor goes away once the biosolids have had a chance to mix in with the soil, usually a day or two after the application.

- They may also have an odor if it rains before the biosolids have had a chance to be fully mixed in with the soil, and this too will go away in a day or two.
- Research on the safety of biosolids has concluded that these odors do not mean that the biosolids present any danger to people or the environment.

## Where are biosolids applied in the Tulsa area?

The City of Tulsa team applies biosolids to pasture land in Tulsa, Osage, Creek, Muskogee, Okmulgee, Rogers and Wagoner counties. Biosolids are applied only on land that has been specially permitted by the State of Oklahoma to receive biosolids.

## Where do I learn more about biosolids?

We would be happy to speak with you further about the City of Tulsa’s Biosolids Program. For more information, visit [www.cityoftulsa.org/government/departments/water-and-sewer/wastewater/biosolids-program](http://www.cityoftulsa.org/government/departments/water-and-sewer/wastewater/biosolids-program) to contact us and see if your land qualifies for the program.