

“Gunny Gold” Compost Outreach Initiative

The City of Gunnison Wastewater Treatment Plant and Regional Water Lab



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Background Information

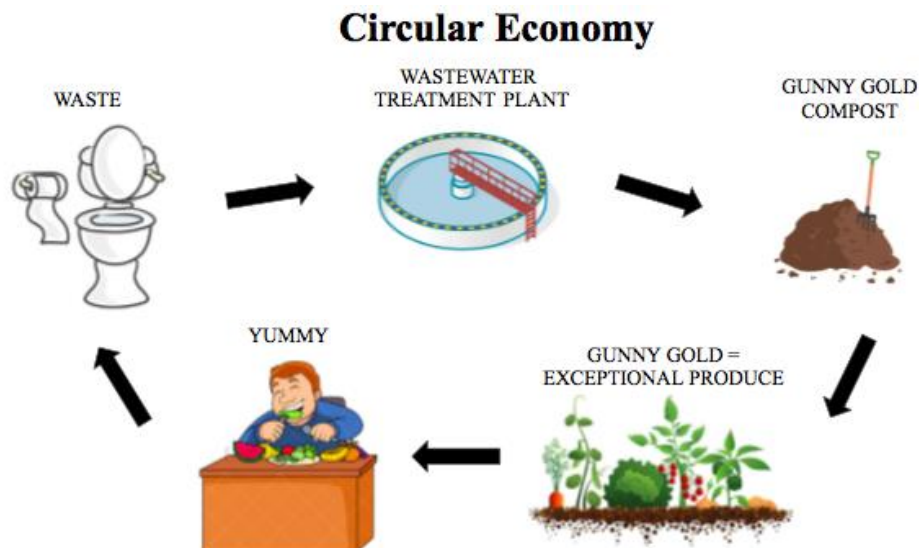
What is Our Story?

The Wastewater Treatment Plant was built in 1987 with the help of an Environmental Protection Agency (EPA) grant. Initially, the plant did not have a formal composting operation for sewage sludge. Waste solids were stored in ditches and turned with turbines to provide oxygen to the piles throughout the Winter. This keeps the compost from producing methane, a harmful greenhouse gas. In the Summer, the sludge would be applied with a truck on local ranches and farms.

Where Are We Now?

Currently, the Wastewater Treatment Plant is producing compost using wood chips from the tree dump and sludge that would otherwise be taken to the landfill. We are working on a circular economy and producing a viable product for community use.

Figure 1. Circular Economy



Where Are We Going?

The Wastewater Treatment Plant is currently undergoing an expansion focusing on modernization and energy efficiency improvements. By the end of this expansion we will be able to produce compost more efficiently and provide more compost to the community.

What is Gunny Gold, and How is it Produced?

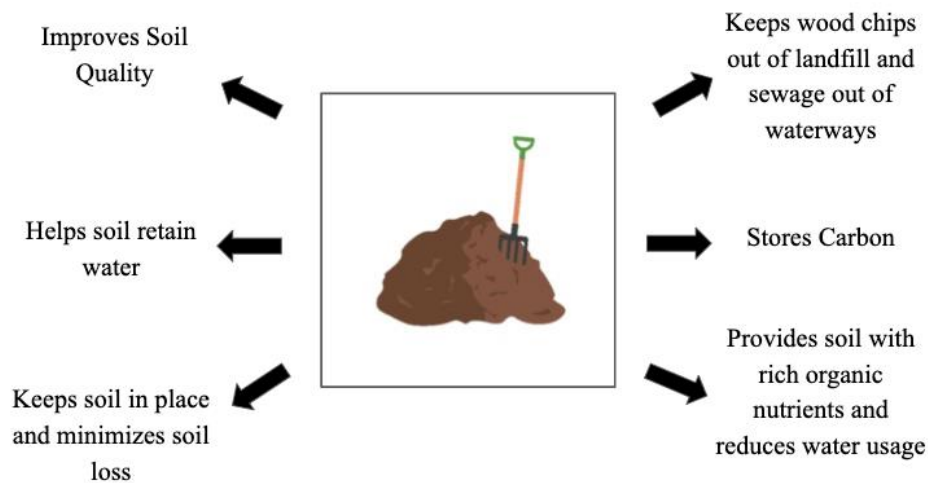
“Gunny Gold” Compost is a nutrient-rich soil additive made from city sewage byproducts and wood chips by the City of Gunnison Wastewater Treatment Plant and Regional Water Lab.

Simply using a gravity filtration system, the microbial byproducts of the city sludge are dried and then mixed with wood chips, and over time, create a compost product of food chain quality.

Why is Gunny Gold Good for the Environment?

- Improves soil quality by adding important nutrients for plant growth.
- Helps soil retain water to reduce water usage.
- Keeps soil in place and minimizes soil loss.
- Keeps useful wood chips out of the landfill and sewage out of waterways.
- Moves carbon dioxide (a greenhouse gas) back into the soil for healthier, more productive land.

Figure 2. Environmental Benefits of Gunny Gold



How Does Gunny Gold Help the Community?

Gunny Gold is a product created from human waste product which creates a net profit when sold. The money generated goes directly to the general fund, which is distributed between all city facilities to use. Gunny Gold even provides some small, Gunnison-based businesses with economic value. Nurseries, Garden Centers, Landscapers, and Retailers all benefit from using Gunny Gold in their operations. Some compost has even been donated to master's students, like Alexia Cooper, for research projects on compost and pasture improvements.

Nutrient Levels

How Do I Know that Gunny Gold is Safe to Use?

- The City of Gunnison has its own water testing lab on site at the wastewater treatment plant. All of the compost is tested for “pathogens”, or potentially harmful bacteria, and heavy metals.

- Gunny Gold is labeled as a “Class A” product, meaning the compost piles are heated to 131 degrees Fahrenheit for at least 15 days or longer with the piles being turned at least 5 times within that period (Bastian, 1995). Some bacteria are present in the compost but at very safe, normal levels.

Nutrient Levels in Gunny Gold:

<i>CHEMICAL REPORT (Tested April 11th, 2019)</i>		
	Gunny Gold, reported in parts per million (ppm)**	Ideal Nutrient Levels, reported in parts per million (ppm)**
<u>MAJOR AND SECONDARY NUTRIENTS</u>		
<i>Total Nitrogen</i>	7,790	Above 2000
<i>Phosphorus</i>	2,765	Above 1,500
<i>Calcium</i>	6,371	Below 40,000
<i>Magnesium</i>	634.8	Below 12,000
<i>Sulfur</i>	1,770	Below 5,000
<i>Sodium</i>	124.2	Below 1,200
<u>MICRO NUTRIENTS</u>		
<i>Zinc</i>	199.3	Between 10 and 400
<i>Iron</i>	2,091	Below 15,000
<i>Manganese</i>	634.8	Below 600
<i>Copper</i>	154	Between 5 and 200

**1 mg/kg = 1 ppm

Application

How Do I Use Gunny Gold?

Recommended compost amounts depend on the type of soil you have!

- For **Sandy Soils**: Dig in 3-4 inches of Gunny Gold
- For **Heavy Clay**: Dig in 3 inches of Gunny Gold
- For **Sandy Loam**: Dig in 2 inches of Gunny Gold

Looking to use compost for specific plants?

- **Individual Beds**: Dig in recommended amount of Gunny Gold into soil and top dress with 1 inch more of the compost.
- **Trees & Shrubs**: To encourage deep rooting, dig 1-2 inches deeper than the actual root ball. Mix 1 part Gunny Gold with 1 part of existing soil to fill the first 1-2 inches of the hole, then add an additional 1-2 inches of additional soil. Place the root ball in the hole, surround and cover it firmly with a mixture of 1 part Gunny Gold and 2 parts soil. After watering and settling, top dress with an additional 2 inches of Gunny Gold.
- **New Lawns**: Spread recommended amount for soil type, till lightly and seed.
- **Established lawns**: Every 3-4 years, cut lawn to medium height, spread $\frac{1}{2}$ - $\frac{3}{4}$ inch of Gunny Gold, irrigate, and rake.
- **Lawns Under Evergreens**: Seed lawn directly into 1 inch of Gunny Gold and spread under evergreens. Apply $\frac{1}{2}$ inch Gunny Gold annually to counteract the acidity of the fallen evergreen needles.
- **Flowers & Berries**: Top dress with 2-3 inches of Gunny Gold in the Spring or early Summer.
- **Potted Plants**: Top dress with 1 inch of Gunny Gold initially and or when replanting
- **Bulbs and Tubers**: Apply a handful of Gunny Gold when planting each bulb or set and top dress with 1-2 inches of the compost.
- **Roses**: Mix 1 part Gunny Gold with 1 part existing soil when planting, then irrigate and top dress with 1-2 inches of the compost.

How Much Does It Cost?

Gunny Gold is approximately \$20.00/cubic yard.

Contact Information:

- Phone Number: 970-641-8040.
- Location: Wastewater Treatment Plant, 524 County Road 32, Gunnison, CO, 81230.
- Please call ahead prior to picking up your compost or inquiring about a facility tour. Employees will help load up your truck.

References

Bastian, R. K. *Biosolids Management Handbook*. Environmental Protection Agency.

Boguski, T. K. (2006). Understanding Units of Measurement. *Center for Hazardous Substance Research*, (2), 2.

City of Gunnison Wastewater Treatment Plant and Regional Water Lab. (2016). Retrieved September 15, 2019, from http://www.gunnisonco.gov/departments/public_works/wasterwater_treatment_plant/index.php

City of Gunnison Wastewater Treatment Facility and Regional Water Lab. *Gardening & Landscaping with Gunnison “Black Gold” Compost*.

Compost Guide. (2010). Using Compost. Retrieved September 9, 2019, from Compost Guide website: <https://compostguide.com/using-compost/>

Photo Library



Dewatered Sewage Sludge
(Dannah Leeman for Scale)



Wood Chips and Biosolids Ready to be Mixed



Wood Chips after the composting process



Compost screening machine



Aeration Pipes



Cured, finished Gunny Gold compost



Alexia Cooper's Master's Project: Applying Gunny Gold to Ranch Land