

August 11, 2022

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Dear Jeremy & Hila,

I am writing to propose changes to our operating plan. With your approval, Grimm's proposes to make changes to two sections of the Plan: **ASP composting operations** and **Temperature and Oxygen regulation** (page 3). Attached is a draft of the proposed modified Operating Plan which clearly shows those changes. If approved, we will finalize the Plan and provide Metro and the DEQ with updated copies. Also attached is a letter from Jeff Gage, Senior System Designer for Green Mountain Technologies (GMT) which summarizes his thoughts on the issues.

Bio-cover:

We propose to modify the requirement to cover all active compost piles with 12" of finished compost or composted overs. The active piles would be covered as needed to minimize odors. Special consideration would be given to the odor potential of the incoming materials and the time of year. For example, history shows that the month of October is particularly problematic when it comes to odors at composting facilities. Our reasons for making these changes are numerous:

1. **Need:** Grimm's Fuel Company primarily composts yard debris, some horse manure and incidental quantities of pre-consumer vegetative food waste. These materials are benign and have less odor potential than food waste. Thus, using the ASP process, the need to continually cover the active compost zones is not critical to reducing odors. **Two recent tests, months**

apart, of composting without bio-cover have shown no change in off-site odors and resulted in no odor complaints.

2. **Expensive and Time Consuming:** The requirement to use 12 inches of finished compost or woody overs as a bio-filter is extremely expensive and is unnecessary. Finished compost as a filter media is a very efficient but 12 inches is extremely expensive. Covering just 1 zone with finished compost requires 408 cubic yards of compost. The retail value on 408 yards of compost is \$11,850.

Covering **each zone** with 12 inches of finished compost is a full-time job and requires 1-1.5 people to cover each zone. Thus, the labor cost to cover each zone is approximately \$420. Furthermore, it is nearly impossible to find qualified people to fill this position given today's employment situation.

3. **Health Concerns:** Compost zones are hot. They routinely reach temperatures of 150 degrees. This heat dissipates out the top of the zones making for an uncomfortable working environment for those working on top of the zone while applying the bio-filter. During the winter months when workers are exposed to the elements - rain, snow, etc. - it turns into a simply miserable job.
4. **Capacity:** Zone height is limited to 14 feet. The existing requirement to cover using 1 foot of finished compost detracts from the amount of raw material that can be placed in the system, lessening overall capacity of the system by 7-14 percent.
5. **Water:** The 3 most important factors is composting are temperature, oxygen, and moisture. In the summer, keeping the compost zones moist is a challenge. We water the zones every day and apply extra water to zones that are scheduled for turning. The 12" bio cover acts as a blanket and blocks the downward migration of the water. Instead of the water flowing down into the active compost zone, it puddles on the surface and evaporates due to the heat. This is not the case with uncovered zones and the water flows down into the zone where it its needed.
6. **Oxygen:** Studies show that the bio-cover is having a negative impact on air movement thru the zone. GMT states that, "...our data shows a likely 25% to 39% reduction in air flow reaching the surface using a bio-cover, and a reduction in oxygen levels in the piles below the surface." (See attached) This is likely the reason that we see significantly higher temperatures in the zone when running in "reverse mode". The fans simply cannot suck enough air through the bio-cover and into the zone to moderate the temperature.

Oxygen Readings:

We propose to decrease the frequency of oxygen readings from daily to weekly. Our permit requires us to, "Build and operate a continuous aeration system that provides adequate aeration to maintain a minimum oxygen level of 10% in the active compost pile." The system was designed by GMT to provide a minimum oxygen level of 13%. Over the last 2 1/2 years we have conducted over 1,000 oxygen readings and data shows that we have always exceeded the 10% minimum requirement and the 13% design parameters. Historical data shows an average oxygen reading of 18.2%, the current Zone Oxygen Report averages 17.5% (see attached). It is the opinion of GMT that, "...the ongoing requirement for daily oxygen readings is excessive and unnecessary." (See attached)

The ASP system is running as designed, offsite odors have been dramatically reduced. Our two tests without bio-cover have demonstrated no change in offsite odors or odor complaints.

Please contact me if you need further data that supports our request for modification of the Operating Plan using bio-cover as required and weekly oxygen readings.

Respectfully,

Jeff Grimm | General Manager

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