

Summary of Written Comments on Draft Strawman Proposal (Version 1 - June 19, 2009)

Reviewer #1:

Definitions

Agricultural Waste: Means the waste from customary and generally accepted activities, practices, and procedures that farmers adopt, use, or engage in during the production and preparation for market of poultry, livestock and associated farm products; and in the production and harvesting of agricultural crops which include agronomic, horticultural, and silvicultural crops and wastes resulting from aquaculture activities. The term does not include special wastes such as waste oils or other lubricants, unused fertilizers, or pesticide containers or residues. [Should specifically state if manure is covered as an agricultural waste. Also, does this include animal mortality or not?]

Compost Feedstock: Means any compostable material used in the production of compost. Feedstocks shall not be considered as either additives or amendments. Nonhazardous industrial waste are presumed unacceptable for composting. [Perhaps this should say, "Non-hazardous wastes not specifically addressed in this rule are presumed unacceptable for compost unless specifically approved by EPD. I would hope that wastes such as gin trash and food waste could be considered feedstocks.] An applicant may overcome that presumption by submitting technical data with the application or otherwise demonstrating that the waste can be successfully treated by composting.

Compost Leachate: Means a liquid that has percolated through or drained from feedstock categories B through D during the composting, mixing, storage, processing, unloading and/or curing stages. [Might consider eliminating the curing stage. At this point, pathogen reduction should be fairly complete and it is a near finished product that could be land applied. The loads coming from a pile would clearly be lower than those from a spread product.]

Compost Wastewater: Means a liquid that has percolated through or drained from feedstock category A during the composting, mixing, storage, processing, unloading and/or curing stages. No treatment and/or collection activities of compost wastewater are required. [Wastewater typically means the runoff from a composting operation. I do not think it makes sense to define it this way. Does this mean that categories B through D do not produce any wastewater?]

Types of Feedstocks

Feedstock Category A

Yard waste, garden waste, land-clearing debris, on-farm agricultural waste other than animal manures or mortality generated and processed by farming or agricultural operations, silvicultural waste, untreated and unpainted wood, or any combination thereof.

Feedstock Category B

Source separated pre-consumer organics (i.e., food processing waste -- meat-free and dairy-free -- and soiled paper); vegetative agricultural waste processed off-site; animal manures or other wastes that are low in pathogens and other contaminants.

Feedstock Category C

Food waste, [Is this different than food processing wastes in B?] ~~agricultural waste~~, sewage sludge/biosolids or other wastes that are high in pathogens.

Feedstock Category D

Waste derived from processing fats, oils and greases; waste with ~~C:N:N~~ ratio of less than 16:1; septage; municipal solid waste; municipal solid waste leachate; industrial wastes; or other wastes which are high in pathogens or other contaminants.

Prohibited Feedstocks

Wastes prohibited from disposal at ~~solid waste disposal~~ composting sites:

- (a) Asbestos containing materials
- (b) Biomedical wastes
- (c) Any other prohibited wastes defined in Georgia Rules 391-3-4-.04 (6)

Criteria for Siting a Composting Facility

Any person involved in the composting of solid waste, other than category A, which is excluded from regulation as a solid waste handling facility, or a facility covered by a Permit-By-Rule, shall comply with the permit requirements for a solid waste handling facility. Chapter 391-3-4-.02: Solid Waste Handling Permits and Chapter 391-3-4-.05: Criteria for Siting for a site proposed as a solid waste handling facility. [Regulations need to use the name “composting,” not solid waste. Solid waste has the connotation of landfills and tends to provoke public opposition]

5. A map of the topographic setting depicting features including all upstream and downstream drainage areas affecting or affected by the proposed site, floodplain, gullies, karst conditions, wetlands, unstable soils and percent slope (Rule 391-3-4-.05(1)(k)(4)). [Shouldn't this require that runoff be diverted around the composting facility and that it be in a well-drained area?]

For facilities composting feedstock categories C and D, the following criteria must be met:

1. A hydrological assessment shall be submitted, as required by Rule 391-3-4-.05(1)(k). The bottom of the pad shall be constructed at least 5 feet above the seasonal high water table. [This is way too much. What about using the NRCS soil surveys to show seasonal high water table is < 5 feet. This is the case with well-drained soils and could be done with soil surveys maps and a hand boring confirmation rather than having to drill. Who can do these? Again, shouldn't we just require that runoff be contained and clean water diverted around the facility?]
2. A groundwater monitoring system shall be installed for composting operations not located within a totally enclosed setting. The groundwater monitoring program must include sampling and analytical methods that are appropriate for the feedstock proposed for composting. [This again is way too restrictive. I do not think groundwater monitoring is needed if surface water is diverted and either a clay or fly ash pad is used to restrict leaching. Also could use C:N ratio of feedstocks to reduce potential for nitrate leaching.]

A site assessment report addressing the criteria listed above shall be prepared by a geologist registered in Georgia or a geotechnical engineer and submitted to the Environmental Protection Division for review at the time of submitting a permit application for the proposed composting facility. [Way overly restrictive and limiting. We want to encourage composting and this will hinder it. Don't need a geologist, could use a soil scientist.]

Design and Operation Criteria for Composting Facilities

Class 1 Composting Facilities

Facilities composting, grinding, chipping, and/or mulching of Feedstock Category A [and B](#), only, does not require a solid waste permit. Class 1 composting facility must submit a minor modification prior to operation if it is located at a solid waste handling facility. The use of farm animal manure, such as cow, horse, mule, hog, and poultry, and other herbivores will be allowed and will not require permitting.

[Would like to see more than just “A” here. This appears to be no different than our current regulations, which definitely discourage composting.]

Class 2 Composting Facilities

The following facilities may operate under permit-by-Rule:

1. Facilities composting no less than 75%, by weight, compostable feedstock generated at the permit-by-Rule facility location or facilities owned by the same person who owns the property containing the permit-by-rule facility.
2. Facilities composting feedstock category [A or B](#) only that are limited to 5,000 CY of feedstock, in-process and bulking material onsite at any one time (finished qualified product does not count toward this total).

Class 3 Composting Facilities

Class 3 composting facilities may compost feedstock categories A & B.

Class 3 Design Standards:

1. The composting facility must be designed by a professional engineer registered to practice in Georgia. [Why? Below, you are requiring the pad to be approved by PE. What else in the facility needs detailed design? Don't see why you need this.]
2. A compost pad shall be constructed under all areas proposed for composting and curing. The composting pad is to be designed to [collect](#) ~~promote drainage to a~~ leachate ~~collection~~ and contain [it in the ment](#) system. The composting pad shall be capable of maintaining structural integrity under operating conditions, collecting all liquids and solids generated by composting process and be capable of supporting vehicular traffic on the pad. The composting pad shall be inspected for uniformity, damage, and imperfections during construction. Prior to receiving feedstocks, the Division must be provided with written certification by a professional engineer licensed to practice in Georgia, that the facility has been constructed in accordance with the approved permit. Unless notified otherwise by the Division, within 15 days of receipt of the written certification, the facility owner or operator may commence composting operations.
3. Composting pad may be constructed of concrete, asphalt, a composite liner system (outlined in Rule 391-3-4-.07(1)(d)1.c) or earthen material with a permeability coefficient of no more than 1×10^{-7} cm/sec in the uppermost six inches of the pad and a permeability coefficient of no more than 1×10^{-5} cm/sec in the twelve-inch base as confirmed by on-site testing. The compost pad is to be sloped to prevent ponding of compost leachate. Stormwater runoff onto the compost pad shall be prevented. [Why can't fly ash stabilization be used? This would be a significant cost savings and relatively low risk. It seems that everything in this bullet is designed to limit permeability. If we are going to limit permeability, why are we also requiring them to collect leachate?]

Class 3 Operating Standards:

1. The composting facility shall be operated only under the direct supervision of a trained operator who is present during operating hours.
2. During operation, the composting pad is to be inspected annually by a Georgia registered Professional Engineer providing a written assessment as to the integrity of the pad and recommending repair, as needed. [Excessive. Agree. I thought the regs were to protect the environment, but make composting easier.]

...

9. Non-compostable waste residue shall be removed from the feedstock and compost, stored in a roll-off container, and disposed of at permitted municipal solid waste landfill within 7 days. [Why 7 days? If it is not organic, it shouldn't cause odor or vector concerns.]

...

12. Before any waste is placed in the facility, the Permittee shall fully satisfy all applicable financial responsibility requirements including both closure and post-closure care, as provided by Chapter 391-3-4-.13. [Excessive, can't we just require them to maintain the permit until closure is complete?]

Class 5 Composting Facilities

Class 5 composting facilities may compost feedstock Categories A, B, C & D. Class 5 composting facilities shall comply with design and operational standards for class 4 composting facilities and the additional design and operational standards listed below. [Suggest combining 4 and 5.]

General Comments

I applaud you and EPD for looking into the compost rules. I really feel that we need to change the rules to encourage more composting in Georgia. Currently the lack of clear requirements inhibits the development of new operations. These rules have the opportunity to change that but a lot more work is needed.

I am afraid that the EPD might be making it more difficult rather than easier for composting in the state. Typical government right.

I hope these will change significantly, because I do not think this structure will increase composting in the state. I wish you could use the word compost instead of solid waste in the regulation titles. Solid waste tends to be a red flag for the public.

Reviewer #2:

Definitions

Composting: Means the controlled biological decomposition of organic matter into a stable, ~~odor-free~~ ~~humus~~ soil amendment. [Compost is not odor free, but has a pleasant odor!]

Compost Leachate: Means a liquid that has percolated through or drained from feedstock categories B through D during the composting, mixing, feedstock storage, processing, unloading and/or curing stages, but not finished compost or product storage areas.

Types of Feedstocks

[My suggestion would be 3 categories:

- A) Woody wastes, leaf wastes, and other high carbon materials
- B) Source-separated organics (not including septage or sewage)
- C) Mixed municipal wastes, septage and sewage]

Feedstock Category A

Yard waste, garden waste, land-clearing debris, on-farm agricultural waste generated and processed by farming or agricultural operations, silvicultural waste, untreated and unpainted wood, or any combination thereof.

Feedstock Category B

Source separated pre-consumer organics (i.e., food processing waste, meat-free and dairy-free, and soiled paper); vegetative agricultural waste processed off-site; or other wastes that are low in pathogens and other contaminants. [I do not believe there is any empirical evidence for the pre- and post-consumer distinction, not for the meat and dairy distinction. These are artifacts left over from home composting instructions that have no place in industrial-scale operations. Food processing waste in this category is defined, while in Feedstock category C, there is no definition. A definition is needed to differentiate between categories, as well as some scientific rationale.]

Feedstock Category C

Food waste, agricultural waste, sewage sludge/biosolids or other wastes that are high in pathogens. [Given that these were safe enough to eat, they are probably lower in pathogens than the typical leaf collection. How are these different than those in A?]

Feedstock Category D

Waste derived from processing fats, oils and greases; waste with ~~N:C~~~~C:N~~ ratio of less than 16:1; septage; municipal solid waste; municipal solid waste leachate; industrial wastes; or other wastes which are high in pathogens or other contaminants. [Most of the feedstocks in B, C, and D can be high in pathogens, so this doesn't seem to be a useful criteria.]

Criteria for Siting a Composting Facility

For facilities composting feedstock categories C and D, the following criteria must be met:

3. A hydrological assessment shall be submitted, as required by Rule 391-3-4-.05(1)(k). The bottom of the pad shall be constructed at least 5 feet above the seasonal high water table.
4. A groundwater monitoring system shall be installed for composting operations not located within a totally enclosed setting. The groundwater monitoring program must include sampling and

analytical methods that are appropriate for the feedstock proposed for composting. [If groundwater monitoring will be required, details need to be provided up front. Depending on the number of wells (I'm assuming sub-surface sampling), constituents to sample, frequency of sampling, etc., the costs may be prohibitive. The feedstock proposed for composting should not necessarily be the key criteria, e.g., distance to groundwater, surface waters, etc. There should also be a timeline for sampling after which the composter can submit a 3rd party review of the data and request that sampling requirements be eliminated or reduced if the data shows no adverse impact to ground or surface waters.]

Design and Operation Criteria for Composting Facilities

Class 1 Composting Facilities

Facilities composting, grinding, chipping, and/or mulching of Feedstock Category A, only, does not require a solid waste permit. Class 1 composting facility must submit a minor modification prior to operation if it is located at a solid waste handling facility. The use of farm animal manure, such as cow, horse, mule, hog, and poultry, and other herbivores will be allowed and will not require permitting. [Neither poultry, nor hogs are herbivores.]

Class 3 Composting Facilities

Class 3 composting facilities may compost feedstock categories A & B.

Class 3 Design Standards:

3. Composting pad may be constructed of concrete, asphalt, a composite liner system (outlined in Rule 391-3-4-.07(1)(d)1.c) or earthen material with a permeability coefficient of no more than 1×10^{-7} cm/sec in the uppermost six inches of the pad and a permeability coefficient of no more than 1×10^{-5} cm/sec in the twelve inch base as confirmed by on-site testing. The compost pad is to be sloped to prevent ponding of compost leachate. Stormwater runoff onto the compost pad shall be prevented. [From PA's source-separated permit: The composting pad shall be constructed a minimum of four (4) feet above the seasonal high water table. The composting pad shall be constructed of concrete, asphalt or remolded asphalt. Composting pads constructed of earthen materials are also permitted provided they are no more permeable than 1×10^{-6} cm/sec in the upper most six (6) inches as confirmed by on-site testing. The composting pad shall be sloped to prevent the ponding of liquids.]

In addition to the comments I submitted earlier, I would strongly recommend EPD consider adopting the general guidelines for Composting Technology Groups and Operation characteristics contained in the Test Methods for the Examination of Composting and Compost (TMECC). These contain the five basic technology groups (piles, windrows, piles and tunnels, windrows trenches beds and bays, tunnel and vessel systems) and six types of source materials commonly composted: food processing residuals; manure and agricultural by-products; forestry and forest product residuals; biosolids or sewage sludge; leaves, brush and yard trimmings; and source-separated organic waste (SSOW).

The five technology categories and six types of source materials commonly composted are based on the predominant composting unit operation characteristics, a technology classification system devised and peer-reviewed for the Composting Facility Operating Guide, US Composting Council, 1994. Information contained in the Composting Facility Operating Guide dovetail with the TMECC and is the very basis for operator training currently being conducted throughout the United States by SWANA and the USCC. This will be very important, as the USCC is developing and expanding the training programs and will ultimately provide continuous education unit (CEU) credits for operator training and certification.

I would also strongly consider adopting the EPA 503 Rule for PFRP and vector attraction and weed seed kill. You might even want to consider the rule for heavy metals. This is a very generous rule and easy to comply with. The time and temperatures found in the rule are also contained in the Composting Facility Operating Guide.

The TMECC (page 01.00-5 Sect 4.7) contains Compliance with Compost Safety Standards. This paragraph discusses “General Use Compost,” a compost product that meets the minimum standards for safety and suitable for use as a soil amendment, and “Designated Use Compost,” a composted product that does not meet the suggested minimum standards, which may be marketed with specific restrictions on its use appropriate to its characteristics. I see value in considering using these terms in future discussions on curing and maturity for compost end uses. Paragraph 4.8.3 General Use Compost classification is shown as the source of supply for three grades of compost, namely Raw Compost, Refined Compost, and Cured Compost. These three grades of compost are manufactured for reliable and sustainable end markets.

FYI the Composting Facility Operating Guide also contains an Annex with definitions you might want to consider. Many of these definitions I noted were adopted in the states definitions you provided earlier. Some states made minor alterations of these definitions to make them more suitable for their purposes.

Reviewer #3:

Definitions

Feedstock: Means any [once-living organic](#) ~~compostable~~ material used in the production of compost. Feedstocks shall not be considered as either additives or amendments.

Industrial waste: [Any non-organic hydrocarbon-based or mineral-based byproduct or residual from a manufacturing operation that cannot be re-used or recycled.](#)

Types of Feedstocks

Feedstock Category A

Yard waste, garden waste, land-clearing debris, on-farm agricultural waste generated and processed by farming or agricultural operations, silvicultural waste, untreated and unpainted wood, or any combination thereof. [Also included: sawdust, shavings, and shredded solids from the manufacture of wooden products; shredded organic disaster debris.](#)

Feedstock Category B

Source separated pre-consumer organics (i.e., food processing waste -- meat-free and dairy-free -- and soiled paper); vegetative agricultural waste processed off-site; [distillers grains](#); or other wastes that are low in pathogens and other contaminants. [\[Egg shells? Cotton linters? Salvage and dust from paper converting operations? Salvage and dust from manufacturing of fabrics from organic materials? Ash from wood-burning boilers or power plants?\]](#)

Feedstock Category C

Food waste, agricultural waste, sewage sludge/biosolids or other wastes that are high [\[needs precise definition\]](#) in [\[defined/identified\]](#) pathogens.

Feedstock Category D

Waste derived from processing fats, oils and greases; waste with C:N ratio of less than 16:1; septage; municipal solid waste; municipal solid waste leachate; ~~industrial wastes~~; or other wastes which are high in pathogens or other contaminants.

Reviewer #4:

Definitions

“Food Scraps” means any material that was intended for animal or human consumption that are source-separated and not contaminated with municipal solid waste. Food Scraps includes but not limited to food processing facilities, food storage areas, grocery stores, institutional cafeterias, restaurants, residential homes, bakeries, vegetables gardens and produce centers. Any materials such as cooking oils, greases and liquids in the production or preparation are included in the definition of Food Scraps. Not included in the definition of Food Scraps are packaging materials, eating utensils, food containers and contaminated waste.

“Yard Debris” means any naturally occurring organic materials that are source-separated and not contaminated with municipal solid waste. Yard Debris includes but not limited to leaves, twigs, grass clippings, tree branches, limbs and trucks, row crops, wood chips and sawdust from processing untreated wood products, clearing of uncontaminated lands and animal bedding. Not included are any organic materials derived from industrial processing, industrial cleanup properties, treated wood, construction wood that does not have nails removed or contaminated with other types of construction or demolition waste and livestock bedding materials.

“Agricultural Residues” means any poultry or animal manure and residual materials in liquid or solid generated in the production and processing of poultry, livestock, fur-bearing animals, livestock bedding materials and associated by-products from such operations.

Class 3 Design Standards should list Soil Cement as feature that can be used as a Composting Pad.

Reviewer #5:

Definitions

Composting: Means the controlled biological decomposition of organic matter into a stable, ~~odor-free~~ humus.

Compost Feedstock: Means any organic ~~compostable~~ material used in the production of compost. Feedstocks shall not be considered as either additives or amendments. ~~Nonh~~Hazardous industrial waste are presumed unacceptable for composting. An applicant may overcome that presumption by submitting technical data with the application or otherwise demonstrating that the waste can be successfully treated by composting.

Compost Leachate: Means a liquid that has percolated through or drained from feedstock categories B through D during the composting, mixing, storage, processing, unloading and/or curing stages. Liquid from finished product storage areas is not compost leachate.

~~Compost Wastewater: Means a liquid that has percolated through or drained from feedstock category A during the composting, mixing, storage, processing, unloading and/or curing stages. No treatment and/or collection activities of compost wastewater are required.~~

Types of Feedstocks

Feedstock Category A

Yard ~~waste~~trimmings, garden waste, land-clearing debris, on-farm agricultural waste generated and processed by farming~~fanning~~ or agricultural operations, silvicultural waste, untreated and unpainted wood, or any combination thereof.

Feedstock Category D

Waste derived from processing fats, oils and greases; waste with N:C ratio of less than 16:1; septage; municipal solid waste; municipal solid waste leachate; industrial wastes; or other wastes which are high in pathogens or other contaminants.

Prohibited Feedstocks

~~Wastes prohibited from disposal at solid waste disposal sites:~~

- (a) Asbestos containing materials
- (b) Biomedical wastes
- (c) Any other prohibited wastes defined in Georgia Rules 391-3-4-.04 (6)

Criteria for Siting a Composting Facility

Any person involved in the composting of solid waste, other than category A, which is excluded from regulation as a solid waste handling facility, or a facility covered by a Permit-By-Rule, shall comply with ~~the permit requirements for a solid waste handling facility.~~ Chapter 391-3-4-.02: Solid Waste Handling Permits and Chapter 391-3-4-.05: Criteria for Siting for a site proposed as a solid waste handling facility.

The following criteria from Chapter 391-3-4-.02 and Chapter 391-3-4-.05 must be met for a ll composting facility:

For facilities composting feedstock categories C and D, the following criteria must be met:

...

8. Airport safety restrictions, as required by Rule 391-3-4-.05(1)(c) [and applicable Federal regulations](#).

Design and Operation Criteria for Composting Facilities

Class 3 Composting Facilities

Class 3 composting facilities may compost feedstock categories A & B.

Class 3 Design Standards:

2. A compost pad shall be constructed under all areas proposed for composting and curing. The composting pad is to be designed to promote drainage ~~to a leachate collection and containment system~~. The composting pad shall be capable of maintaining structural integrity under operating conditions, collecting all liquids and solids generated by composting process and be capable of supporting vehicular traffic on the pad. The composting pad shall be inspected for uniformity, damage, and imperfections during construction.

...

4. ~~Composting pad may be constructed of concrete, asphalt, a composite liner system (outlined in Rule 391-3-4-.07(1)(d)l.e) or earthen material with a permeability coefficient of no more than 1×10^{-7} cm/sec in the uppermost six inches of the pad and a permeability coefficient of no more than 1×10^{-5} cm/sec in the twelve inch base as confirmed by on-site testing. The compost pad is to be sloped to prevent ponding of compost leachate.~~ Stormwater runoff onto the compost pad shall be prevented.
5. ~~Site survey control shall be provided and maintained.~~ [An as-built survey of the facility shall be prepared](#) by a Georgia registered site surveyor to ensure compliance with the approved Design and Operational Plan.

5. ~~Compost leachate~~ [Runoff](#) generated at the facility shall be [detained](#) ~~stored in an tank, container, or lined impoundment designed to retain the.~~ ~~The compost leachate collection capacity shall be designed for 25 year, 24 hour storm event.~~ [Compost leachate Runoff](#) may be used in the composting operation for moisture addition. ~~Excess compost leachate and compost wastewater shall be disposed in accordance with the Georgia Rules for Water Quality Control.~~

Class 3 Operating Standards:

~~During operation, the composting pad is to be inspected annually by a Georgia registered Professional Engineer providing a written assessment as to the integrity of the pad and recommending repair, as needed.~~

2. Food waste must be transported and stored in ~~closed~~, leak proof containers prior to composting.

Class 4 Composting Facilities

Additional Class 4 Design and Operational Standards

~~Receiving area of compost operation must be constructed on asphalt, concrete, or a composite liner system (outlined in Rule 391-3-4-.07(1)(d)l.e). The area is to provide for compost leachate collection. An annual inspection of this area should be included in the compost pad inspection written report.~~

2. Installation and implementation of an approved groundwater monitoring plan.

General Comments

The Rules still need a good bit of work.

This letter is to formalize comments on the initial draft of rule changes that were distributed the last meeting of the Compost Rule Stakeholders Group. Our comments are both general and specific.

General Comments

The May 8, 2009 letter from Jennifer Kaduck inviting us to participate in this stakeholders group stated that, "This is an important component in EPD's multi-pronged approach to divert food residuals and other organics from landfills." At previous Georgia Chapter of SWANA meetings Ms. Kaduck has reiterated the need to encourage more composting and food waste diversion. It is our opinion that the direction the draft rule changes for composting have taken to date will discourage additional food waste diversion and composting facilities. In fact the food waste compost facility just permitted by EPD this year would not meet the current draft rules with regards to design standards for "Class 3 Facilities." Specifically this brand new facility does not meet the proposed design standards for the compost pad or for "compost leachate" storage in a tank, liner, or lined impoundment. The facility also does not have a groundwater monitoring system. Construction to the proposed standards would likely cause composting to be cost prohibitive.

The approach taken in the draft rules to protect groundwater and the environment seems to be primarily focused on the construction of impervious compost pads and collection and containment of "compost leachate." The requirements for composting of sewage sludge/biosolids in the proposed rules are much more stringent than requirements to land apply these wastes. The proposed rules require that compost pads for facilities composting feedstock categories C and D be constructed five feet above the seasonal high water table. These facilities must also install a groundwater monitoring system. This approach to protection of the groundwater and the environment is reasonable and should be used in lieu of the proposed compost pad and compost leachate storage requirements.

Specific Comments

Specific comments are included in the attached.

[NOTE: These comments are included above from Reviewer #5.]