Composting: Compliance Guidance

Solid Waste Delegation Agreement Webinar
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For more information visit:
www.azdeq.gov/composting
www.azdeq.gov/permits
Agenda

- Composting: The Basics
- Regulatory Requirements
- Benefits & Risks
- Best Management Practices (BMPs)
What Is Composting?

- A soil amendment that is created from the decomposed remains of organic material.
- When organic materials such as yard waste, food scraps, and animal waste decompose in aerobic conditions, compost is created.
The Basics

- 3 basic ingredients

**Greens**
- Food scraps
- Grass clippings
- Egg shells
- Garden weeds
- Aquatic weeds
- Farm animal manure

**Browns**
- Leaves
- Straw
- Wood Chips
- Saw Dust
- Dead Plants
- Coffee/Tea

**Water**
Composting: Regulatory Definition

Arizona Administrative Code R18-13-312 (3)

**Composting** -- This method of disposal is acceptable to the Department under the following conditions:

a. That plans and specifications and other information necessary to evaluate the project are submitted to the Department and approval received prior to start of construction.

b. That provisions are made for the proper disposal of all refuse not considered suitable for composting.

c. Skilled personnel shall be provided to assure the proper operation and maintenance of the facilities in a nuisance-free manner.
Do composting facilities require a solid waste permit?

Arizona Revised Statutes 49-762.07

• Owners or operators of solid waste facilities that begin operations after September 1, 1996 shall submit a notice to the director containing the following information no later than thirty days before beginning operation of a solid waste facility.
Solid Waste Requirements

http://www.azdeq.gov/composting
Under A.R.S. § 49-762.07 solid waste facilities must submit to ADEQ a notice that contains the following information:

- Facility name and mailing address.

- Legal description by township, range and section and county assessor's book, map and parcel number.

- Description of waste storage and treatment equipment and methods of waste management, including types and volumes of waste handled and time the waste remains on site.

- Description of waste management practices used at the facility including measures taken to protect the environment and to protect the public health.

- A diagram of the property showing the location of the solid waste facility or facilities.
A *Determination of Applicability (DOA)* may be necessary dependent on facility activities.

**MAY** need to obtain an:

- Aquifer Protection Permit, or APP (if a facility discharges a pollutant either directly to an aquifer, to the land surface)
- Agricultural Best Management Practice Permit Record (intended to reduce dust)
Benefits

- Enriches soil
- Reduces need for chemical fertilizers
- Reduces carbon footprint
- Reduces amount of waste going to landfills
Risks

- Fire Hazard
- Vector Breeding
- Discharge to surroundings
- Wind Blown Litter/Dust
Fire Hazards

- ~54% due to spontaneous combustion
- ~20% due to equipment failure
- ~26% Other

Spontaneous Combustion

Note what’s burning (it’s not the windrows)
Spontaneous Combustion

- Most common cause of fires at compost facilities
- No external energy/spark required
- Result of a chain reaction of several heat-generating processes
- Common in industries where organic materials are stockpiled
- Not well understood by Industry
Fire Hazards

Spontaneous Combustion

Temperature Change = Heat generation - Heat loss

Smaller piles = more heat loss = lower temperatures

Larger piles = less heat loss = higher temperatures

Moist piles = more heat loss = lower temperatures

Dry piles = less heat loss = higher temps
Spontaneous Combustion

Heat generation > Heat Loss

1. More heat generated than lost
2. Chain reaction of several heat-generating processes:
   - Biological self-heating (160° - 185° F)
   - Chemical reactions release heat - bridging the gap between biological heat and ignition
   - Pyrolysis, adsorption, chemical oxidation
   - Water boils away, temp. exceeds 212° F
   - Ignition happens @ 300° - 400° F
   - Limited oxygen = smoldering fire
   - With oxygen = flaming fire
Risks

Vector breeding

- Mosquito
- Rodents
- Flies
Risks

Vector breeding

- Turn piles frequently.
- Wet the piles.
- Cover piles, if possible.
- Reduce standing water.
BMPs

- Keep pile sizes manageable (under 12 ft.)
BMPs

- Adequate Spacing Between Piles
BMPs

- **Fire Hazards**
  - Have a pull-out area.
  - Readily accessible fire suppression near piles.
- Have an emergency response plan for your facility and make sure your employees understand how to use it and where it’s located.

- WORK WITH YOUR LOCAL FIRE AUTHORITY!

Is this your current plan?
Alternatives to Composting Yourself

The Biocycle Portal
Composting, Anaerobic Digestion Sites + Organics Collection Services in the U.S. + Canada

http://findacomposter.com/
Thank you for your time!
Questions?
Please contact me with any questions in the future!

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