

NATURAL RESOURCES CONSERVATION SERVICE
VIRGINIA ENGINEERING TECHNICAL NOTE #316 (TN-316)
A REVIEW OF ANIMAL MORTALITY LAWS IN VIRGINIA

ALLOWABLE METHODS OF MORTALITY DISPOSAL IN VIRGINIA

As of October 2008, there are only specific regulations for the disposal of dead poultry. This covers all types of birds raised in captivity in flocks greater than 500 birds. Allowable methods for both daily and catastrophic mortality disposal are landfilling, incinerating, rendering, or composting. Burial or disposal pits cannot be used for daily mortality unless an individual VPA permit is obtained. A permit for emergency burial of non-disease catastrophic mortality can be obtained but the guidelines for site selection may make this option impractical.

There are no specific regulations for disposal of dead animals. However, the general regulations for solid waste disposal are to be used. This means that burial is not a viable option for daily mortality and probably will not be a practical option for catastrophic mortality.

PERMITS

Landfilling. A legal landfill may be used to dispose of dead animals and poultry. In the case of catastrophic mortality of poultry, it is specifically mentioned in the regulations that a bona fide contract for disposal must be made before this method can be used.

Incinerating. Although the owner of a poultry incinerator must fill out the application for permit for an incinerator (DEQ Form 7), this is more for the purpose of registering the equipment. The operator will not be subject to regulatory review unless an air quality complaint is registered. The owner of an incinerator used for swine or other animals must obtain a permit.

Rendering. A rendering plant may be used to dispose of dead animals and poultry. In the case of catastrophic mortality of poultry, it is specifically mentioned in the regulations that a bona fide contract for rendering must be made before this method can be used.

After April 27, 2009, rendering plants must remove the spine and brain from cows before rendering in order to avoid possible contamination with mad-cow disease. The spine and brain must be disposed of in accordance with the appropriate EPA guidelines. For this reason, Valley Protein will not accept dead cows after March 1, 2009.

Composting. Mortality composting facilities are required to have a permit from DEQ. There is a proposed change in regulation that would allow an exemption for composting of mortality generated on-site. Vegetative material and products of animal husbandry such as manure and bedding are exempt from composting regulations.

If the permitting requirements are changed, this Technical Note will be updated.

COMPOSTING

This information is a brief summary of information needed for composting activities. A complete list is available from DEQ in 9VAC20-80-330 Compost Facilities. Much of this is the same information required in the DESIGN and CHECK data in the Standard.

SITING

In addition to the siting requirements listed in the Standard for composting, there some general considerations for locating an animal mortality facility.

- Facilities need to be adjacent to or have direct access to roads that can withstand the anticipated load limits.
- Sites should have sufficient room to minimize traffic congestion and allow for safe operation.

DESIGN/CONSTRUCTION

1. Virginia is a zero discharge state. Leachate from a composting facility must be controlled, preferably by recirculating it within the facility. The other method would include directing the leachate to a waste treatment area. However, a leachate problem on the site of a composter is an indicator of composting problems that need to be addressed.
2. For windrow composting sites, there needs to be consideration of:
 - a. Springs, seeps, and other ground water intrusions;
 - b. Gas, water, or sewage lines under the active areas; and
 - c. Electrical transmission lines above or below the active areas.
3. Roads should be of all-weather construction.
4. Auxiliary power, standby equipment, or contingency arrangements need to be part of the O&M plan.
5. Sizing of surface water control features should be based on the 10-year, 1-hour storm frequency.

OPERATIONS

1. Material that is not suitable for composting shall be disposed of in an appropriate location.
2. There should be a testing plan that includes identifies the frequency and method of testing that will be used to measure:
 - a. Compost stability
 - b. Pathogens, including parasites, bacterial pathogens, and fecal coliform
 - c. Metals

3. Maintain the designated buffer zones.
4. The Operation and Maintenance Plan should contain:
 - a. A description of the type of waste that will be managed at the facility.
 - b. A discussion of the composting process including:
 - i. A copy of the O&M plan and drawings and specifications of the composting unit
 - ii. A discussion of requirements for power, water supply, and wastewater removal, and the steps taken to accommodate these requirements.
 - iii. Windrow or static pile composting facilities shall also have a description of the composting process, including compost pile formation, sizing and orientation, provisions for water supply, provisions for wastewater disposal, and an equipment/materials list with proposed sources.
 - iv. Procedures and frequency of moisture and temperature monitoring and aeration.
 - c. A discussion of the method and frequency of final product testing.
 - d. A schedule of operations.
 - e. Anticipated daily traffic flow.
 - f. Procedure for unloading trucks (including frequency, rate, and method).
 - g. A contingency plan detailing corrective or remedial action to be taken in the event of equipment breakdown; air pollution (odors); and undesirable conditions such as fires, dust, noise, vectors, and unusual traffic conditions.
 - h. Special precautions or procedures for operation during wind, heavy rain, snow, and freezing conditions.
 - i. A description of the ultimate use of the finished product, method for removal from the site, and a plan for use or disposal of the finished compost that cannot be used in the expected manner due to poor quality or change in market conditions.
 - j. A plan for site inspections.
 - k. A discussion of records to be maintained.
5. Maintenance
 - a. Facility components shall be maintained and operated in accordance with the intended use of the facility and the permit conditions, as needed.
 - b. Adequate equipment shall be available on site to meet the intended use.
 - c. Self-inspection by the operator shall include monitoring and inspecting for malfunctions, deteriorations, operator errors, and discharges that may cause a release to the environment or a threat to human health. These problems shall be remedied promptly.
6. Recordkeeping

- a. Operational records shall be maintained at the facility. As a minimum, these records shall contain temperature data and quantity of materials processed.
- b. Self-inspections shall be recorded in an inspection log. These records shall be maintained for three years from the date of inspection. They must include the date and time of the inspection, the name of the inspector, a description of the inspection including the identity of specific equipment and structures inspected, the observations recorded, and the date and nature of any remedial actions implemented or repairs made as a result of the inspection.
- c. Records of all monitoring information shall be maintained for three years.

CLOSURE

1. Closure standards. The facility shall be closed in a manner that minimizes the need for further maintenance, and controls, minimizes or eliminates the post-closure escape of uncontrolled leachate, surface runoff, or waste decomposition products to the ground water, surface water, or to the atmosphere. This shall be done to the extent necessary to protect human health and the environment.
 - a. Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste or leachate.
 - b. After all reasonable efforts have been made to remove or decontaminate the site, if the subsoils cannot be practically removed or decontaminated, the operator shall install a water monitoring system and make provisions for monitoring.
2. Closure plan and amendment of plan.
 - a. The operator shall have a written closure plan. This plan shall identify the steps necessary to completely close the facility.
 - b. This plan can be amended at any time during the life of the facility.
 - c. Other requirements are listed in the DEQ regulations.
3. The facility shall be closed within six months of receiving its final volume of wastes.

REFERENCES

1. On-Farm Composting Handbook, Northeast Regional Agricultural Engineering Service, Cooperative Extension, NRAES-54, 1992.
2. USDA-Natural Resources Conservation Service. National Engineering Handbook – Part 650, Engineering Field Handbook.
3. ACI 360R-06 – Design of Slabs on Grade
4. USDA-Natural Resources Conservation Service. National Engineering Handbook, Part 637, Chapter 2, Composting

5. NRCS GM 420 Part 401 – Cultural Resources
6. “Composting for Mortality Disposal on Hog Farms.” Virginia Cooperative Extension. Publication 414-020, 2003.