CONSERVATION PRACTICE STANDARD

WASTE RECYCLING

(Tons)

CODE 633

DEFINITION

The use of the by-products of agricultural production or the agricultural use of non-agricultural by-products.

PURPOSE

- Protect or improve the quality of natural resources and the environment.
- Provide or reduce energy use.

CONDITIONS WHERE PRACTICE APPLIES

Where waste can be processed and recycled to prevent a resource problem or provide a conservation benefit.

Where the intended recycling activity is identified in a waste management system plan or an equivalent plan.

CRITERIA

General Criteria Applicable to All Purposes

Comply with all federal, state and local laws, rules and regulations governing waste management, pollution abatement, health and safety shall be required. The owner or operator shall be responsible for securing all required permits or approvals related to waste utilization, and for operating and maintaining any components in accordance with applicable laws and regulations.

Perform at least one analysis of the waste to determine the characteristics that are critical to its use and base the use of the waste on the analysis. Use a laboratory certified by a State recognized program. The waste analysis shall identify nutrient concentrations for N, P, and K. Where the metal content of municipal wastewater, sludge, septage and other agricultural waste is of a concern, the analysis shall also include determining the concentration of metals in the material.

When wastes are land applied, application rates and application timing (winter application) shall be consistent with the requirements of the NRCS conservation practice standard Nutrient Management (590).

When wastes are used for animal feed the practice shall comply with the criteria in NRCS conservation practice standard Feed Management (592).

Manage residuals generated by waste processing and recycling activities in a manner that prevents degradation of natural resources and the environment.

Additional Criteria to Protect Water Quality

Wastes shall not be land-applied on soils that are frequently flooded, as defined by the Soil Survey, during periods when flooding is expected.

The application rate of liquid materials applied shall not exceed the soil intake ability and shall be adjusted to minimize ponding, to avoid runoff, and to prevent seepage to tile drains.

Additional Criteria to Protect Water Quality for Temporary Waste Field Stacking

Planned temporary stacking of wastes on fields shall be included as part of the overall waste management system plan (or CNMP) component of the conservation plan. The plan map shall show the location of all temporary storage areas, access roads to these areas, setbacks, slopes, and location of sites subject to pollution such as wells, springs, swales or

waterways, streams, drains, and sinkholes. Supporting practices such as access roads, diversions, waterways, subsurface drains, filter strips, and critical area plantings shall be used, maintained, and shown on the plan map, as required.

Location - Waste field storage shall be located:

- Where access will be practical during periods of inclement weather;
- At least 100' from the edge of the floodplain of the 100-year, 24-hour storm;
- On slopes flatter than 8%. For slopes between 3-8%, locate the temporary stacking area within 150 feet of the top of a slope, unless an upslope diversion is installed;
- Outside of natural drainage ways;
- At least 150 feet from streams, wells, springs, wetlands, karst basin intake areas, and ponds, or at least 200 feet from a well that is located down gradient from the storage area;
- Where the seasonal high water table will be no closer than 3' below the bottom of the stacked manure/litter;
- At least 100 feet from neighboring property lines;
- At least 100' from down-slope subsurface drain tiles:
- As required by local and state laws, regulations, and ordinances.

Soils and Foundation - Wastes may be stockpiled on crop fields without using an impermeable pad, liner, or cover if it will be:

- Temporarily stockpiled on an infrequent basis at different locations each year. The same location may not be used more than once every 4 years, unless phosphorous soil test levels show that more frequent use is possible.
- Limit the stacked manure in the field to the amount that later can be spread on the same field as per the nutrient management plan.
- Applied prior to the next growing season, or within 120 days;
- Placed on well drained soils and with a permeability of less than 6 inches/hour in the upper 40 inches of the soil profile;
- Waste shall be removed in a manner that effectively cleans up all the residual waste from the site.

For sites that do not meet the above listed criteria, refer to the NRCS practice standard Waste Storage Facility (313).

After the waste is removed, temporary storage sites on cropland shall be planted to a cover crop or other agronomic crop to facilitate nutrient uptake. Temporary storage sites in other locations shall be re-vegetated with grasses/legumes or other permanent vegetation, as appropriate in accordance with the NRCS practice standards for Critical Area Planting (342), Conservation Cover (327), or Pasture & Hay Planting (512).

Covering and Shaping - All field-stacked waste shall be shaped to minimize percolation of precipitation through the pile by utilizing taller, conical shaped stacks or windrows.

Field-stacked waste may be uncovered if stacked for no longer than 120 days, unless further restricted by Pennsylvania CAFO regulations. If 120 days are exceeded, field-stacked manure shall be shaped and covered with opaque plastic or poly-ethylene sheeting (minimum thickness of 6 mils), or other impermeable and equally strong material. The cover material shall provide a barrier to prevent precipitation from entering the field stacked manure and prevent runoff from the pile.

The cover for the stacked waste shall be free of tears or punctures, and shall be placed over the pile with care to prevent tearing. Weights shall be placed on the cover material to anchor it and prevent tearing and dislodging during high winds. A trench 12 inches deep shall be constructed around the waste and the edges of the sheeting buried in and through the trench. In lieu of a trench, concrete barriers or similar materials may be used to secure the cover. Covers shall be maintained during the time stacked waste is in the field.

The storage period shall be based on the timing required for environmentally safe waste utilization consistent with NRCS Practice standard Nutrient Management (590).

Additional Criteria to Protect Air Quality

The additional criteria for air quality are appropriate for use in areas when an identified or designated nutrient management related air quality concern has been identified by risk assessment tools as a potential source of atmospheric pollutants. Incorporate surface applications of solid forms of manure or other organic by-products into the soil within 24 hours of application to minimize emissions and to reduce odors**.**

When applying liquid forms of waste with irrigation equipment, select application conditions that will minimize volatilization losses into the atmosphere. The basis for applying liquid wastes under these conditions shall be documented in the nutrient management plan.

Handle and apply dry types of waste or other organic by-products when weather conditions are calm and there is less potential for blowing and emission of particulates in the atmosphere. The basis for applying waste under these conditions shall be documented in the nutrient management plan.

When sub-surface applied using an injection system, waste shall be placed at a depth and applied at a rate that minimizes leaks onto the soil surface, while minimizing disturbance to the soil surface and plant community.

All materials shall be handled in a manner to minimize the generation of particulate matter, odors and greenhouse gases.

Additional Criteria for Providing Fertility for Crop, Forage and Fiber Production and Forest Products

Where wastes (manure, biosolids, etc.) are utilized to provide fertility for crop, forage, fiber production and forest products, the NRCS practice standard Nutrient Management (590) shall be followed. A nutrient management plan developed under the PA Act 38 of 2005 regulations shall also meet this requirement.

Where municipal wastewater and solids are applied to agricultural lands as a nutrient source, the single application or lifetime limits of heavy metals as established by DEP shall not be exceeded. The concentration of salts shall not exceed the level that will impair seed germination or plant growth.

Additional Criteria for Improving or Maintaining Soil Structure

Where agricultural wastes are used to improve or maintain soil structure, wastes shall be applied at rates not to exceed the crop nutrient requirements or salt concentrations as stated above.

Residue management practices Residue Management, No-Till and Strip-Till (329) and Residue Management, Mulch-Till (345) shall be used for maintenance of soil structure.

Additional Criteria for Providing Feedstock for Livestock

Agricultural wastes to be used for feedstock shall be handled in a manner to minimize contamination and preserve its feed value. Chicken litter stored for this purpose shall be covered. A qualified animal nutritionist shall develop rations that utilize wastes.

Additional Criteria for Providing a Source of Energy

Use of waste materials for energy production shall be an integral part of the overall waste management system.

All components of the system relating to the processing of waste shall be included in the waste management plan. Provisions for utilization of residues of energy production shall also be identified in the plan.

Where the residues of energy production are to be land-applied for crop nutrient use or soil conditioning, the criteria listed above shall apply.

CONSIDERATIONS

The effect of Waste Recycling on the water budget should be considered, particularly where a shallow ground water table is present or in areas prone to runoff. Limit waste application to the volume of liquid that can be stored in the root zone.

Agricultural wastes contain pathogens and other disease-causing organisms. Wastes

should be utilized in a manner that minimizes their disease potential.

Priority areas for land application of wastes should be on gentle slopes located as far as possible from waterways. When wastes are applied on more sloping land or land adjacent to waterways, other conservation practices should be installed to reduce the potential for offsite transport of waste.

It is preferable to apply wastes on pastures and hayland soon after cutting or grazing before re-growth has occurred.

Minimize environmental impact of land-applied waste by limiting the quantity of waste applied to the rates determined using the practice standard Nutrient Management (590) or Act 38 (YEAR) regulations for all waste utilization.

Consider the net effect of waste utilization on greenhouse gas emissions and carbon sequestration.

PLANS AND SPECIFICATIONS

Plans and specifications for Waste Recycling shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The waste management plan is to account for the utilization or other disposal of all animal wastes produced, and all waste application areas shall be clearly indicated on a plan map.

OPERATION AND MAINTENANCE

Records shall be kept for at least five years and include when appropriate:

- Quantities of manure or other agricultural waste produced. Document the nutrient content and metal content if applicable.
- Soil test results on land where waste is applied.
- Dates, amounts, and locations of waste application, and the dates and amounts of waste removed from the system due to feeding, energy production or export from the operation.
- Describe general climatic conditions during waste application such as: time of day, temperature, wind conditions, and other factors as necessary.
- Waste application methods.
- Crops grown and yields (both yield goals and measured yield).
- Calibration rate of application equipment.
- A description of how the waste was recycled and the conservation benefit achieved.

The operation and maintenance plan shall include the dates of periodic inspections and maintenance of equipment and facilities used in waste utilization. The plan should include what is to be inspected or maintained, and a general time frame for making necessary repairs.