Nutrient Management Plan Special Conditions for Voluntary Nutrient Management Plans Developed for Non-permitted Operations

September 2011

The following management practices will be utilized for <u>dairy/beef operations</u> not requiring a VPA or VPDES permit:

1. Soil samples for manure application fields will be analyzed at least once every three (3) years for pH, phosphorus, potassium, calcium, and magnesium in order to maximize the efficient utilization of nutrients. A representative soil sample of each field will be comprised of at least twenty (20) cores randomly sampled throughout the field. Soil sampling core depth will be from 0-4 inches for land which has not been tilled within the past three (3) years, or 0-6 inches for land that has been tilled within the past three (3) years. Soil pH will be maintained at appropriate agronomic levels to promote optimum crop growth and nutrient utilization.

2. Soil test analysis will be performed by one of the laboratories listed below. Soil phosphorus levels must be determined using the Mehlich I or Mehlich III procedure.
   - A&L Eastern Laboratories
   - Agri-Analysis Testing Laboratory
   - AgroLab
   - Brookside Laboratories
   - Logan Labs
   - Midwest Laboratories (must request Mehlich III)
   - Spectrum Analytical Laboratories
   - Virginia Tech Soil Testing Lab
   - Waters Agricultural Laboratories (GA)

3. Representative manure samples should be analyzed at a minimum of once per year for liquid manure and once every three (3) years for semi-solid manure for the following: total nitrogen or total Kjeldahl nitrogen (TKN), ammonium nitrogen, total phosphorus, total potassium, calcium, magnesium, and percent (%) moisture. Separate samples should be taken from all manure sources to be used for application (i.e. liquid, solid, etc.). All manure analyses shall be performed using laboratory methods consistent with *Recommended Methods of Manure Analysis*, publication A3769, University of Wisconsin, 2003 or other methods approved by the Virginia Department of Conservation and Recreation (DCR). Manure analysis results will be used to determine actual manure rates that do not exceed the nitrogen and phosphorus application rates specified in the nutrient management plan using either the most recent manure analysis results (not greater than 1 year old) or the facility's average results based on actual manure analysis. Dairy manure coefficients for organic nitrogen availability in manures (found in Table 8-2 of *Virginia Nutrient Management Standards and Criteria, Revised October 2005*) shall be used for beef manure.

4. All crops will be planted and harvested in a timely manner using commercially acceptable management practices.

5. Make manure applications at or near planting or to existing actively growing crops to ensure that nutrients are properly utilized. Utilize the spreading schedule contained in the nutrient management plan and the spreading schedule in #21 of this document to determine appropriate manure application times and rates. Additional commercial fertilizer applications (especially nitrogen) should be made as a split application separate from the manure applications, either as a sidedress or topdress application.

6. For permanent hay or pasture, an adequate stand of hay and/or pasture crop species will be established prior to land application of manure. Commercially acceptable stands of the listed species will be maintained and other weeds and grasses controlled. All hay crops will be harvested in a timely and regular manner, removed from fields, and utilized for a suitable purpose.

7. Manure will be applied to application sites in a uniform manner.

8. Do not spread manure within the following setback areas:
   - 100 feet from wells or springs
   - 50 feet from surface waters (25 feet if injected or incorporated)
   - 50 feet from sinkholes*
   - 50 feet from limestone rock outcrops
   - 25 feet from other rock outcrops
   - 10 feet from agricultural drainage ditches (5 feet if injected)

   *Waste shall not be applied in areas subject to concentrated flow generated by runoff from storm events such that it would discharge into sinkholes in the area.

9. To avoid manure runoff from application fields*:
   - Do not spread manure on soils that are saturated.
   - Do not apply liquid manure (above 85.5% moisture content) or commercial fertilizers to frozen, ice or snow-covered ground.

   *If runoff is observed, reduce the application rate immediately to prevent overland flow, which reaches buffer areas or accumulates in low-lying areas.

10. For odor control and to reduce drift, avoid spreading on windy days.

11. Liquid irrigation systems will be operated in a manner to prevent runoff into buffered areas and low-lying areas. Use a liquid application rate at or below the specified maximum hydraulic application rate for each field per application. Traveling guns used for irrigation of effluent should be operated in a <u>full circle pattern</u> whenever possible to allow for maximum infiltration. A small wedge shaped area may be left dry ahead of the gun to reduce soil compaction.

12. Spreader calibration is extremely critical to ensure proper application rates. Calibration of equipment or verification of actual equipment application rates should occur at a minimum of once per year.

13. New waste storage facilities should be designed, constructed and operated in accordance with the USDA-NRCS *Field Office Technical Guide* and other appropriate NRCS design criteria.

14. Earthen waste storage structures should be regularly inspected and repaired if leaks, slope failures, excessive embankment settlement, eroded banks, or burrowing animals are detected. A protective cover of appropriate vegetation should be established and maintained on all disturbed areas (lagoon and storage pit embankments, berms, pipe runs, etc.). Vegetation such as trees, shrubs and other woody species are limited to areas considered to be appropriate such as wind breaks or visual screens, and are not to be present on lagoon and storage pit embankments, berms, or pipe runs.

15. Waste handling structures, piping, pumps, etc. should be inspected on a regular basis to prevent breakdowns, leaks and spills.

16. Composting of animal mortalities will be conducted in accordance with the latest guidance developed by Virginia Cooperative Extension.

17. State water control law does not allow discharge of waste to state waters (ground or surface) except as specifically authorized by a permit issued by the Virginia Department of Environmental Quality (DEQ). To minimize the risk of waste discharge, and fully utilize this nutrient management plan, it is recommended that 120-180 days of waste storage capacity be installed in most situations.

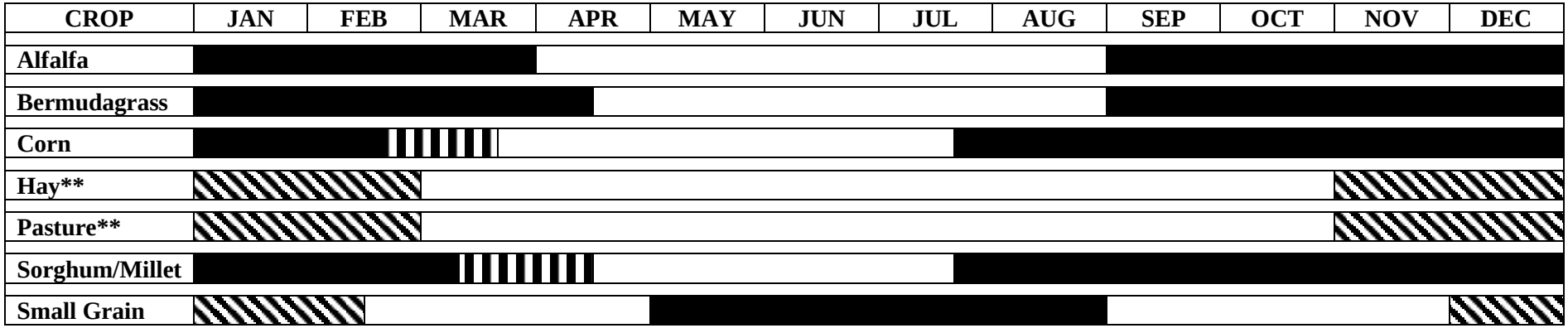
18. Nutrient management plans that contain fields in which row crops will be grown will be revised at least once every three (3) years. Nutrient management plans that contain only hay or pasture fields will be revised at least once every five (5) years.

19. This nutrient management plan should be amended or modified if animal numbers increase above the level specified in the plan; animal types including intended market weights are changed; additional imported manure, biosolids, or industrial waste that was not identified in the existing plan is applied to fields under the control of the operator; available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan; and/or manure application fields have Mehlich I soil phosphorus levels at or above 55ppm (110 lbs/acre) where either cropping systems, rotations, or fields are changed.

20. These conditions do not override any more restrictive plan requirements if required by other specific legislative, regulatory or incentive programs which apply to a specific operator.

21. Manure spreading schedule:

DAIRY/BEEF MANURE SPREADING SCHEDULE*



*** Do not spread liquid manure, dry or semi-solid manure, or parlor effluent on soils that are saturated.**

*** Do not spread liquid manure/effluent (above 85.5% moisture content) on frozen, ice or snow-covered ground.**

*** Application of dry or semi-solid manure (85.5% moisture content or less) should be avoided on frozen, ice or snow-covered ground. If necessary, applications may be made to fields that have: (i) slopes not greater than 6.0%, (ii) 60% uniform ground cover from crop residue or an existing actively growing crop such as a small grain or tall fescue with an exposed plant height of ≥ 3 inches, (iii) a minimum 200 foot vegetated or adequate crop residue buffer between the application area and all surface water courses, AND (iv) soils characterized by USDA as "well drained."**

**** Cool season grasses only: Fescue and/or Orchardgrass**

Spread liquid manure, dry or semi-solid manure and parlor effluent at the rates and times specified in the nutrient management plan.

Do not spread liquid manure, dry or semi-solid manure and parlor effluent during these shaded months.

Manure applications will not be made earlier than 30 days prior to planting on environmentally sensitive sites.

On fields not listed as environmentally sensitive:

- **Liquid manure applications will not occur more than 60 days prior to spring planting.**
- **Applications of semi-solid beef manure (85.5% moisture content or less) or semi-solid dairy manure (85% moisture content or less) for operations using straw or sawdust (not sand) bedding will not occur more than 90 days prior to spring planting on fields having (i) slopes less than 7% throughout the application area or (ii) having at least 60% uniform ground cover from crop residue.**

Manure applications are not recommended during this period. If necessary, uniformly apply a maximum of 3,000 gallons per acre per application. If using an irrigation system, apply up to a maximum of ¼ inch per acre per hour. Do not exceed 40 lbs of plant available nitrogen per acre during this entire period. Allow sufficient drying time between applications. Fields must have greater than 60% uniform live cover with plant height greater than 3 inches.