Obtaining Regulatory Approvals for Soils-Based Applications

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DIVISION OF WASTE MANAGEMENT

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for Soils-Based Applications

Solid Waste Section
Regulates safe management of solid waste through technical assistance, regulations, permitting, environmental monitoring, compliance evaluation, and enforcement.

Waste types handled:
- municipal solid waste
- industrial waste
- construction and demolition waste
- land-clearing waste
- scrap tires
- medical waste
- compost
- septage
- electronics

Solid Waste in Land Application

- Protect Public Health and the Environment
- Lower agricultural inputs
- Lower production costs
- Improves soil fertility
- Diverts beneficial waste from landfills

Solid Waste Regulatory Requirements

- NCGS 130A-309.04(a) Policy of the state to promote methods of solid waste management that are alternatives to disposal in landfills...
- NCGS 130A-309.05 Regulated Wastes; certain exclusions—Recovered material is not subject to regulation as solid waste under this Article.
- Rule 15A NCAC 13B .0201: Permit required (a) No person shall treat, process, store, or dispose of solid waste or arrange for the treatment, processing, storage or disposal of solid waste except at a solid waste management facility permitted by the Division for such activity, except as provided in G.S. 130A-294(b).
Types of Materials Managed in Land Application Systems

- Tobacco dust
- Ash
- Gypsum
- Limestone byproduct
- Septage (domestic, grease, portable toilet waste)

Approval Requirements for Utilizing Materials in Land Application Programs

- Soil Evaluation to determine depth to SHWT
- Background Soil Sample with Metals
- Annual Soil Sample with Metals
- Land Application Method
- Erosion and Runoff Control Plan
- Nutrient Management Plan

Approval Requirements for Utilizing Materials in Land Application Programs

- Waste Characterization
  - Nutrient Content
  - CCE
  - Metals
  - Particle Size
  - Consistency
  - Other – Waste dependent
- Minimum 4 Samples of Waste

Application Requirements Continued

- Benefit Justification
- Application Method
- Application Time
- Setbacks
- Nuisance Issues
- Farm Storage
- Record Keeping and Reporting
Nutrient Management Plan

- Application rate based on limiting factor
- Rate Determination Method
  - Soil Samples
  - Calculation Examples
  - Who Calculates?
- Equipment Calibration

Craven Wood Energy

- Wood Ash is produced after burning wood for energy production.
- Craven Wood Energy produces approximately 12,000 tons per year
- Material is land applied at 3 ton /acre
- 3 tons wood ash = 1 ton ag lime
- Ag Lime at $48 / ton, net savings are approx $200,000 in lime and approx $350,000 in landfill costs

Septage

- Solid waste that is a fluid mixture of untreated and partially treated sewage solids of human or domestic origin.
- Septic tank waste
- Grease traps
- Portable toilets
- 505 septage firms

Composting

- Growing sector in Solid Waste
- 40 Solid Waste compost facilities
- Food waste, agricultural byproducts, and sludges are managed
- 49,000 tons of food waste and food residuals composted in FY 2013-2014
- Class A and B compost is often land applied

Large Type III Compost Facility in Goldston, NC
More information available on web at: http://portal.ncdenr.org/web/wm/sw

Or contact:
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Regulatory Framework

- NCGS 143-215.1
  - Requires a permit for disposal of sludge from the operation of a treatment works
- 15A NCAC 02T .1100 – Rules specific to residuals management
  - Covers waste generated from:
    - a wastewater facility,
    - water supply treatment facility, or
    - air pollution control facility.
  - Does not include:
    - Coal ash
    - Hazardous wastes

Types of Residuals Programs

- Land Application –
  - Beneficial reuse of residuals (soil amendment for agriculture)
  - Must meet specified requirements:
    - Maximum and cumulative metals limits
    - Pathogen and vector control (biological wastes)
    - Setbacks
    - Operation restrictions
    - Agronomic rates
- Surface Disposal
  - Must meet specified requirements:
    - Metals limits
    - Vector control
    - Setbacks
    - Operation restrictions
    - Modeling to show protection of GW
Permit Requirements

- Residuals Characterization
- Non-Hazardous material demonstration
- Metals Limits
- Nutrient management
- Setbacks (If fields are permitted)
- Operation restrictions
- Monitoring and reporting

Pathogen and Vector Attraction Reduction

- Required for Biological Wastes
  - Class A: <1,000 MPN or < 3 Salmonella per 4 grams
  - Class B: <2,000,000 MPN
- If no Pathogens in waste stream (e.g. no domestic WW)
  - Reduced pathogen monitoring
  - No demonstration of processes to reduce pathogens
  - No demonstration of vector attraction reduction
- Must not create nuisance conditions

Annual Report

- March 1 of every year.
  - Characteristics of Residuals (Metals, nutrients, pathogens, etc)
    - Meet quality requirements
  - Amount of residuals applied or distributed
    - Permits with fields must report applications to each field
  - Intended use
  - Signed by a certified operator and permit holder

Industrial Solids

- Paper manufacturing/recycling byproducts (high pH, pathogen testing false positive)
- Residuals ash (metals, expand beneficial uses)
- Enzymes
- Brewery waste (sell as feed, no pathogens)
- Canning/food processing (biological, pathogens)
- Textiles (high N, check TCLP, crop inhibition)
More information available on web at:
http://portal.ncdenr.org/web/wq/aps/lnu

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