


Obtaining Regulatory Approvals for Soils-Based Applications


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 DIVISION OF WASTE MANAGEMENT







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
- Lowers agricultural inputs
- Lowers 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)
15A NCAC 13B .0800




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**



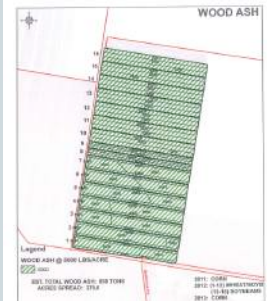
Application Requirements Continued

- 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



The map shows a rectangular field divided into sections. A legend in the bottom left corner includes: 'WOOD ASH @ 3000 LBS/ACRE', 'SOIL TOTAL NUTRIENT CONCENTRATION', 'AGRIC. USE', and 'AGRIC. SOURCE'. The field is labeled 'WOOD ASH' at the top right.

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



Septage dewatering facility in Craven Co

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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Division of Water Resources Non-Discharge Permitting

- Wastewater irrigation and infiltration
- Closed loop recycle systems
- Reclaimed water systems
- Residuals application
- Coal combustion products Distribution (residuals only)

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
 - Meet or exceed 40 CFR requirements
 - 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/lau>

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