

Regulatory Guidelines for Marketing FGD Gypsum

Jim Meiers
Duke Energy

**Agricultural and Industrial Uses
of FGD Gypsum Workshop**

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Federal Program Initiative

- The Coal Combustion Products Partnership (C2P2) joint initiative with government and industry to promote the beneficial reuse of CCP.

This is EPA's effort to find flexible yet more protective ways to conserve valuable natural resources through recycling.



Regulatory Framework

- In 2000 Bevil Determination, EPA found that current management practices for CCP were determined to be adequate and do not require federal oversight under Subtitle C.
 - Agricultural use was considered as part of the determination.
 - In the preamble to the Bevil Determination, EPA states:
 - Agricultural applications of CCP creates no adverse environmental impacts and EPA did not find any damage cases associated with this practice.
 - Agricultural use of these wastes has significant technical and economical benefits.
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Regulatory Framework

- Federal controls would be unnecessarily costly and would create a barrier for research and development on this practice.
 - Existing regulatory controls are sufficient to control any risks from this practice.
 - FGD Solids are regulated by the states under Subtitle D non hazardous waste program.
 - Some states exempt the beneficial reuse of these materials from solid waste regulation.
 - Some states can't use because of statutory definitions.
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Federal Guidance

EPA - Industrial D Guidance 2003

- Contains guidelines for designing a land application program.
 - Can be used by state regulators to develop a program or by generator to develop a management plan.
 - Provides guidance to reduce risks to ground water and surface water.
 - Waste characteristics.
 - Determining agronomic application rate.
 - *Soluble salts, nutrients, calcium carbon equivalent.*
 - Site characterization – soil properties (physical characteristics) and climate.
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Regulatory Framework for Industrial Uses

□ The regulation of industrial uses of gypsum will generally fall under the states' waste regulatory structure.

□ Exemptions

- Raw material feed stock
- Characteristics non toxic



Regulatory Framework for Agricultural Uses

- The agricultural use of gypsum will generally fall under the states' water regulatory structure.
 - The state specific regulations are usually developed using the Land Application of Sewage Sludge rules found in Section 503 of the Clean Water Act.
 - The function of a land application rule is to protect ground water and surface water. A permit is typically approved considering:
 - pollutant loading of soil.
 - application rate (biosolid or industrial waste).
 - purpose (beneficial reuse or waste disposal).
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Land Application “defined”

Land Application means the beneficial use of a biosolid, industrial waste product, pollutant bearing water by:

1. Spraying or spreading onto the land surface.
 2. Injection below the land surface.
 3. Incorporation into the soil.
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Land Application Permit

- Waste characterization
 - Pollutant limits criteria will depend on various factors.
 - Beneficial reuse versus disposal.
 - Application rate.
 - Site specific versus non-site specific permits.
 - Criteria for site specific permits.
 - Ceiling concentrations. mg/kg
 - Cumulative pollutant loading rates. lbs/acre
 - Maximum annual loading rates. lbs/acre
 - Criteria for non site specific permits; Marketing and Distribution permits.
 - Pollutant concentrations. mg/kg
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Pollutant Limits

<i>Pollutant</i>	<i>Ceiling Concentration mg/kg</i>	<i>Cumulative loading rates lbs/acre</i>	<i>Maximum Annual loading rates Lbs/acre</i>	<i>Pollutant concentrations mg/kg</i>
Arsenic	75.0	36.0	1.8	41.0
Cadmium	85.0	4.5–18.0	0.45	39.0
Copper	4,300	1,338	66	1,500
Lead	840	267	13.4	300
Mercury	57.0	15.0	0.7	17.0
Molybdenum	75.0	N/A	N/A	75
Nickel	420	374	18.7	420
Selenium	100.0	89.0	4.4	100.0
Zinc	7,500	2,499	124.9	2,800

Land Application Permit

- General requirements for a non site specific “Marketing and Distribution permit”
 - Five year permits.
 - Certified wastewater treatment plant operator (biosolids); or
A person with at least 1 year experience in land application management practices and procedures (industrial wastes or pollutant bearing water).
 - The person who applies a material to the land must provide information to comply with management practice to the owner or lease holder.
 - User Information Sheet
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Land Application Permit

- Typical User Information Sheet
 - Chemical composition
 - Approved uses - Duke
 - 1. *Soil Amendment for Reducing Soil Erosion*
 - 2. *Nutrient Addition*
 - 3. *Mitigation of Acid and Sodic Soils*
 - 4. *Additive to Fertilizer and Composting Materials*
 - Application rate
 - Storage considerations
 - Source contact information
 - Must contain statement that application of the industrial waste is prohibited except in accordance with the instruction on user information sheet.
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Land Application Permit

- General requirements (continued)
 - Annual or monthly reporting
 - Total tons distributed.
 - End user list; (Co-Op distribution center, farmer, etc.)
 - Characterization testing; frequency required is based on tons distributed.
 - All reports and recordkeeping must be signed by a responsible company official or his authorized designated representative.
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Land Application Permit

□ Management Plan

- How the industrial waste will be marketed.
- Quality control measures.
- Storage at the source.
- Procedures for addressing non-complying practices by end users.



Land Application Permit

Storage Considerations

- Site restrictions or setbacks (end users)
 - 300 ft from surface waters
 - 300 ft from residence
 - 200 ft from a potable water well
 - 50 ft from property line
 - Design and construction of storage structures (source)
 - Storm water controls
 - Location criteria (floodplain, slopes, etc.)
 - Nuisance control measures (fugitive dust)
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State Department of Agriculture

Fertilizer or Soil Amendment License

- Registration or application
- Reporting requirements
- Fees or taxes based on tons sold.

