



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NYS's Current Solid Waste Disposal Regulatory Framework for Gas Development Wastes

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SWANA Technical Conference
Albany Marriott
June 13, 2013

Focus

- Discussion on wastes acceptable for disposal at landfills in New York State
 - Conventional drilling wastes generated within New York State
 - Conventional and/or HVHF drilling wastes generated outside New York State
- Beneficial Use Determinations (BUDs) for drilling wastes



Gas Extraction Process – 3 stages

- Drilling
 - Drill Cuttings, Drilling Muds
- Fracturing
 - Flowback Water, Solid Residuals
- Production
 - Production Brine, Solid Residuals



Production Brine

- Fluids naturally present in some shale formations. Generated from the well during production.
- BUDs for roadspreading have been issued for brine generated from conventionally drilled wells both inside and outside NYS
 - 38 BUDs issued to date
- No petitions for HVHF brine have been received by the Department



Flowback Water

- Frac Water generated from the well after fracturing is complete.
 - Either recycled or disposed
 - No BUD for roadspreading would be available because the material is not an effective substitute.



Solids Disposal Restrictions

General Wastes prohibited from disposal at solid waste landfills

- Regulated Hazardous Waste
- Industrial or Commercial Wastes, except for those with specific Department authorization
- Regulated Radioactive Waste
- Sludges with <20% solids
- Bulk Liquids



Drilling Waste Status

- Exempt from regulation as a Hazardous Waste
 - 371.1(e)(2)(v) – “Solid wastes which are not hazardous wastes. The following solid wastes are not hazardous wastes: drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy;”
- Excluded from definition of Industrial Waste
 - 360-1.2(b)(88) – “... This term does not include oil or gas drilling, production, and treatment wastes (such as brines, oil, and frac fluids); overburden, spoil, or tailings resulting from mining; or solution mining brine and insoluble component wastes.”
- Conditionally excluded from regulation as Radioactive Waste
 - 380-1.2(e) – “This Part does not apply to NORM or materials containing NORM unless processed and concentrated.”



Drill Cuttings Disposal

- Air- or Water-based drilling method
 - Uncontaminated rock and soil
 - May be disposed of as C&D debris at a C&D Debris Landfill or MSW Landfill
- Oil- or Polymer-based drilling method
 - Requires disposal at MSW Landfill
- May require dewatering/bulking to meet 20% solids requirement



Drill Cuttings Disposal (cont.)

- Radioactivity (if present) in Drill Cuttings considered NORM
- Dewatered Drill Cuttings \neq “Processed and Concentrated”
- Dewatered Drill Cuttings not prohibited from disposal in solid waste landfills
- Concern – mixture of regulated radioactive wastes with Drill Cuttings



Drilling Mud

- Drilling Mud are typically reconditioned for reuse
- Must meet 20% solids to be accepted for disposal
- Dewatering/bulking \neq Processed & Concentrated
 - not prohibited from disposal in solid waste landfill
- Any additive? MSW Landfill for disposal



Solid Residuals

- Result from the treatment of liquid drilling wastes
 - Examples: Filter cake, sludge, concentrate
 - Processed and Concentrated
 - Therefore, a Regulated Radioactive Waste
 - Requires disposal in Part 380 Landfill or out-of-state equivalent



Piping/Tanks with Scale Buildup

- Processed and Concentrated
- Above 50 microR/hr: requires radioactive materials license and disposal in compliance with Part 380.



2012 Disposal of Drilling Waste at Landfills in New York State

C&D Debris Landfills

Chemung County C&D Landfill (Region 8)	16,282 tons (80% waste disposed)
Hakes C&D Landfill (Region 8)	38,590 tons (17% waste disposed)

MSW Landfills

Chemung County Sanitary Landfill (Region 8)	65,902 tons (37% waste disposed)
Allied Waste Niagara Falls Landfill (Region 9)	59,645 tons (9% waste disposed)
Hyland Landfill (Region 9)	9,033 tons (4% waste disposed)



Current Industry Practice

- All landfills in New York State that accept drilling wastes:
 - Utilize radiation detectors
 - Screen wastes for hazardous characteristic
 - Approve each waste using industrial waste approval process



Moving Forward - Policy

- DEC is currently drafting a Program Policy for landfills accepting drilling wastes for disposal
 - Radiation detectors
 - Standards for radiation detection operations
 - Trigger settings, calibration, training, response criteria
 - Screen wastes for hazardous characteristic
 - Utilize industrial waste acceptance criteria
 - Monitor leachate for constituents of concern



Thank You

Questions?

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