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

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Focus

• Discussion on wastes acceptable for disposal at landfills in New York State
  – Conventional drilling wastes generated within New York State
  – Convention 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 ≠ “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 ≠ 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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