



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

---

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

Richard Clarkson  
Division of Materials Management  
New York State Department of Environmental Conservation

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 ≠ “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?

Richard Clarkson

Facilities Section, Division of Materials Management

625 Broadway, Albany, NY 12233-7260

[reclarks@gw.dec.state.ny.us](mailto:reclarks@gw.dec.state.ny.us)

518-402-8678



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION