GHG Permitting and Biogenic CO₂
An Update on EPA Air Rules Impacting the Landfill Industry

By: Brandon Mogan, PE
Geosyntec Consultants
1331 Elmwood Avenue, Suite 310
Columbia, SC 29201
GHG Permitting & Biogenic CO₂

- What is PSD and why is it a big deal?
- GHG permitting under PSD.
- The status of Biogenic CO₂ issues.
- How will GHG permitting and biogenic CO₂ issues shake out?
- What would happen if I have to count my Biogenic CO₂ emissions?
GHG Permitting & Biogenic CO2

- What is PSD and why is it a big deal?
- GHG permitting under PSD.
- The status of Biogenic CO2 issues.
- How will GHG permitting and biogenic CO2 issues shake out?
- What would happen if I have to count my Biogenic CO2 emissions?
HG Permitting:

- What is PSD and why is it a big deal?
- GHG permitting under PSD.
- The status of Biogenic CO2 issues.
- How will GHG permitting and biogenics play out?
What is Prevention of Significant Deterioration (PSD)?

- Modeling must account for your facility, plus other nearby facilities.
- Total modeled concentration + background can't exceed the NAAQS.
- Pre-construction permitting program for major sources and major modifications at existing major sources.
- Major source thresholds of 100/250 tons per year for traditional pollutants.
- Once a facility is a major source, future modifications are subject to PSD permitting at much lower thresholds.
What is Prevention of Significant Deterioration (PSD)?

- Modeling must account for your facility, plus other nearby facilities.
- Total modeled concentration + background can't exceed the NAAQS.
- Total impact on air quality can't exceed the allowable increment.
- Once the increment is consumed at a particular location, there is no more room for additional emissions.

Requires the application of the best available control technology (BACT)
What is Prevention of Significant Deterioration (PSD)?

- Modeling must account for your facility, plus other nearby facilities.
- Total modeled concentration + background can't exceed the NAAQS.

- Total impact on air quality can't exceed the allowable increment.
- Once the increment is consumed at a particular location, there is no more room for additional emissions.

Requires the application of the best available control technology (BACT)
Requires the application of the best available control technology (BACT)
• Requires air dispersion modeling to demonstrate that the facility will not "cause or contribute" to a violation of the NAAQS at any off-site receptor.
- Modeling must account for your facility, plus other nearby facilities.
- Total modeled concentration + background can't exceed the NAAQS.

- Total impact on air quality can't exceed the allowable increment.
- Once the increment is consumed at a particular location, there is no more room for additional emissions.

Requires the application of the best available control technology (BACT)
• Total impact on air quality can't exceed the allowable increment.
• Once the increment is consumed at a particular location, there is no more room for additional emissions.
Additional Requirements:
- Consideration of impacts to visibility, soil, and vegetation.
- Public participation
GHG now factor into the equation, further complicating an already complicated program.
What is PSD and why is it a big deal?
GHG permitting under PSD.
The status of Biogenic CO2 issues.
How will GHG permitting and reporting roll out?
What could be a surprise?
GHG Regulatory Timeline

2005
- Petition for rulemaking for GHG emissions from motor vehicles.
- EPA said no.
- DC Circuit upheld EPA's denial.

2006
- Supreme Court agrees to hear the case.
2007
- Mass. v. EPA
- EPA must go make an "endangerment finding"

2009
- EPA makes endangerment finding
- EPA must regulate GHG emissions from motor vehicles.
2010
- EPA interprets "air pollutant" under Title II of the CAA to mean "regulated NSR pollutant" under the PSD rules.
- EPA promulgates the "Tailoring Rule" to avoid absurd results of applying statutory thresholds to GHG.

2011
- PSD permitting requirements for GHG take effect.
• What is PSD and why is it a big deal?
• GHG permitting under PSD.
• The status of Biogenic CO2 issues.
• How will GHG permitting and biogenic issues be handled?
• What would happen if I have to count biogenic emissions?
Biogenic CO2 Regulatory Timeline

2011

- EPA publishes a draft biogenic CO2 accounting framework.
2012

- SAB comments on EPA's draft biogenic CO2 accounting framework.
2013

- The Deferral Rule is vacated.
- Vacature is appealed by EPA.
- Supreme Court decides to hear UARG vs. EPA.
- Appeal period is extended until UARG vs. EPA is decided. Thus, the Deferral Rule is left intact.
• What is PSD and why is it a big deal?
• GHG permitting under PSD.
• The status of Biogenic CO2 issues.
• How will GHG permitting and biogenic CO2 issues shake out?
• What would happen if I have to count my Biogenic CO2 emissions?
2014
(and beyond)

GHG Permitting—In General

- UARG v. EPA will be decided in the coming weeks.
- Question: Is it permissible for EPA to determine that regulation of GHG under Title II of the CAA (motor vehicles) required under PSD?
- GHG permitting under PSD will continue.
- If UARG wins, GHG permitting under PSD will go away.
GHG Permitting, In General

- UARG vs. EPA will be decided in the coming weeks:
  - Question: Was it permissible for EPA to determine that regulation of GHG under Title II of the CAA (motor vehicles) required them to regulate GHG emissions under PSD?

- If UARG wins, GHG permitting under PSD will go away.

- If EPA wins, GHG permitting will continue under PSD (nail in the coffin).
- Regardless of the outcome of EPA's appeal, the Deferral will sunset on July 21, 2014 (additional rulemaking notwithstanding). Biogenic CO2 becomes subject to regulation under PSD.

- The EPA's biogenic CO2 accounting framework will become final on ___??? It will inform us on how biogenic CO2 emissions are to be counted towards PSD thresholds.

- Draft framework suggests landfills should have a BAF = 0 (no biogenic CO2 counted towards PSD thresholds). The SAB didn't have too many issues with this assumption.
Biogenic CO2 and PSD

- Regardless of the outcome of EPA's appeal, the Deferral will sunset on July 21, 2014 (additional rulemaking notwithstanding). Biogenic CO2 becomes subject to regulation under PSD.

- The EPA's biogenic CO2 accounting framework will become final on _______?? It will inform us on how biogenic CO2 emissions are to be counted towards PSD thresholds.

- Draft framework suggests landfills should have a BAF = 0 (no biogenic CO2 counted towards PSD thresholds). The SAB didn't have too many issues with this assumption.
• What is PSD and why is it a big deal?
• GHG permitting under PSD.
• The status of Biogenic CO2 issues.
• How will GHG permitting and biogenic CO2 issues shake out?
• What would happen if I have to count my Biogenic CO2 emissions?
Example Landfill

- 16 MM ton (capacity)
- Two 2,500 scfm flares
- Currently not a major source under PSD for GHG (<100,000 tpy CO2e) or traditional NSR pollutants (<250 tpy).
- Biogenic CO2 becomes "subject to regulation" on July 21, 2014, the landfill is now a major source under PSD for GHG (>100,000 tpy CO2e).
- Future projects that may require PSD permitting:
  - Addition of one 2,500 scfm flare (major modification for CO and GHG).
  - Addition of one 2,500 hp LFG-fired engine (major for CO).
GHG Permitting and Biogenic CO₂
An Update on EPA Air Rules Impacting the Landfill Industry