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Landfill Gas Regulation in Michigan

Presenter: Margie Ring, DNRE



History of Landfill Gas Regulations

- ❑ Act 641- 1981 administrative rules required the landfill design to ensure methane or landfill gases couldn't travel laterally from the site or accumulate in structures.



Act 641- 1993 Rules Update

- ❑ 1993 rules update required operator to monitor the landfill to ensure landfill gases not accumulating in structures or migrating off-site.
- ❑ If gas is detected above 25% LEL in facility structures or at 100% LEL at facility boundary – facility required to install an active gas collection system.
- ❑ General guidance on gas collection system requirements.



Part 115...

- ❑ No change to explosive gas control and monitoring rules since 1993.



Federal Regulations

- ❑ Subpart WWW – Standards of Performance for Municipal SW LFs & Emissions Guidelines, Subpart Cc- Promulgated on March 12, 1996.
- ❑ Subpart HH – Green House Gas Reporting Requirements – Promulgated on October 30, 2009.



Greenhouse Gases

- ❑ Michigan's Climate Action Plan sets goals for reduction of Green House Gas (GHG) generation in Michigan.
- ❑ Goal is to achieve a reduction of 20% of 2005 levels by 2020 and an 80% reduction below 2005 levels by 2050.
- ❑ Approximately 3% of GHG generated in Michigan attributed to landfills.



GHG cont.

- ❑ Projection is that this percentage will not increase over time, but will hold steady or decrease due to diversion of organics from landfills.
- ❑ Grass-to-Gas Bills under consideration allow landfills to accept yard clippings if facility is a Landfill Energy Production Facility – increasing organics in landfills.



Landfill Gas Usage in Michigan

- ❑ Currently 37 of 50 Type II landfills have active gas collection systems.
- ❑ 17 sites generate a total of 92.9 megawatts of electricity.
- ❑ 7 provide methane directly to off-site users.
- ❑ 5 use gas to power leachate evaporators.
- ❑ 8 collect and flare methane.
- ❑ 3 sites planning to install or add capacity.



What do we know about efficiency of these systems?

- ❑ How much gas is captured and how much escapes to the atmosphere?
- ❑ Calculated emission rate vs. measured?
- ❑ How accurate are the models used to estimate gas generation rates?
- ❑ How accurate are the available measurement methods?



Guidance Documents

- ❑ Air Quality Division (AQD) and Waste Management Division published a guidance document for an interagency review process for landfill gas collection and control system design plans on August 7, 1998.
- ❑ AQD to review control systems; WHMD to review collection systems.



Guidance Document

- ❑ WHMD staff are working on an update to the 1998 guidance document.
- ❑ Intend to provide specifications on design and spacing of gas wells; specifications for piping, headers, and condensate handling; and provisions for measurement of gas generated and collected.
- ❑ Goal is to incorporate guidance into Part 115 rules.



Workgroup

- ❑ Currently have an internal work group looking at landfill gas management plan reviews.
- ❑ Considering expanding this workgroup to include stakeholders and/or landfill engineers from industry.



Landfill Gas Management Goals

- ❑ Ensure that landfills are operated to be protective of public health, safety, and the environment by preventing the migration of landfill gas from the facility.
- ❑ Minimize release of greenhouse gases.
- ❑ Encourage use of landfill gas as a renewable energy source.

Margie Ring

e-mail: Ringm@Michigan.gov

