



State of Oregon Department of Environmental Quality

Rule Comparison - Meeting Materials 5

Landfill Gas Emissions Rulemaking 2021

Advisory committee meeting #1

Rule Comparison

Landfill gas emissions from Municipal Solid Waste (MSW) landfills in Oregon are currently regulated by several different regulatory provisions known as New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and Emission Guidelines (EGs). The federal regulations applicable to landfill gas emissions from MSW landfills are NSPS 40 C.F.R. part 60 subparts WWW and XXX which are implemented in Oregon under OAR chapter 340 division 238; NESHAP 40 C.F.R. part 63 subpart AAAA implemented under OAR chapter 340 division 244; EGs 40 C.F.R. part 60 subpart Cf implemented under OAR chapter 340 division 236. The current regulations primarily address greenhouse gases by reducing non-methane organic compounds (NMOC), which are a small component (typically less than 1%) of landfill gas.

Executive Order 20-04 states that DEQ shall regulate landfill gas emissions in alignment with the most stringent landfill gas emission regulations from a state that borders Oregon. The most stringent regulations from a boundary state comes from California. California's regulations focus directly on methane emissions from landfills¹.

Both the California regulations and the currently adopted federal regulations offer a tiered approach to site applicability and requirements. Details of these tiers and the major differences are provided in the table below. The general stepped approach is:

1. Landfill age
2. Landfill size
3. Calculated potential emission rate
4. Direct surface emission monitoring
5. Installation of a landfill gas collection and control system (GCCS)

California Air Resources Board developed a comprehensive comparison of the California regulations to the federal emission guidelines².

¹ <https://ww2.arb.ca.gov/resources/documents/landfill-methane-regulation>

² https://ww2.arb.ca.gov/sites/default/files/2020-08/CaStatePlan_Appendix-E.pdf

Step	Rule Requirement	Oregon NSPS / Emission Guideline regulations. Adopted July 2019	California Landfill Methane Regulation – adopted June 2010
	Landfill type	Municipal solid waste landfills	All landfills accepting/accepted solid waste. Exemptions: <ul style="list-style-type: none"> • hazardous waste and CERCLA landfills • all waste is inert (won't decompose) • All waste is construction and demolition waste (this exemption may be removed)
1	Landfill age	Accepted waste at any time since November 8, 1981	Received solid waste after January 1, 1977
2	Size Threshold	2.5 million megagrams (Mg) / 2.5 million cubic meters	450,000 tons / 450,000 Mg waste-in-place.
	Impact of exceeding size threshold	Calculate NMOC emission rate	Calculate landfill gas heat input capacity (based on methane generation rate)
3	Calculated Threshold	NMOC emission rate (calculated): <ul style="list-style-type: none"> • 34 Mega-grams (Mg) per year NMOC (open/active landfill) • 50 Mg per year NMOC (closed landfill) 	3.0 million British thermal units per hour (MMBtu/hr). This calculated value is based off the methane emission rate.
	Impact of exceeding additional threshold	Surface emission monitoring	Surface emission monitoring
4	Surface Emission Monitoring Spacing	30-meters	25-feet (7.62 meters)
	Surface Emission Monitoring threshold	500 parts per million by volume methane, Instantaneous	200 parts per million by volume (ppmv) methane instantaneous (single location) 500 ppmv leaks (single location) 25 parts per million average
5	Impact of exceeding surface emission monitoring threshold	Install/upgrade GCCS within 30 months	Install/upgrade GCCS within 18 months or 30 months (closed) of approval of Design Plan (active)
	Gas Capture and Control System (GCCS) requirements	Reduce NMOC by 98 percent or limit NMOC concentration to 20 parts per million by volume at equipment outlets, depending on system. OR treat the gas for use.	No leaks over 500 ppmv 99 percent methane destruction or 3,000 ppmv methane at outlet, depending on the system. Or treat the gas for use.
	Areas of landfill included in SEM/GCCS system requirements	Areas where solid waste is in place for 5 years or more (active landfill), 2 years or more (closed landfill, area at final grade).	Any area where solid waste has been buried that is not the "working face".
	Removal of GCCS	Closed landfill GCCS in operation at least 15 years or gas flow does not allow 15 years of operation NMOC emission rate less than 34 megagrams per year (50 Mg/year for closed landfill)	GCCS in operation at least 15 years or gas flow does not allow 15 years of operation Surface emission monitoring below 500 ppmv instant/25 ppmv average

Alternative formats

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