Washington's Landfill Methane Emissions Regulation

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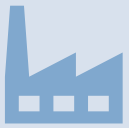
Chapter 173-408 WAC – Landfill Methane Emissions

Impacts municipal solid waste (MSW) landfills that received solid waste after Jan. 1, 1992



MSW landfills subject to new requirements, including reporting, monitoring, installation & operation of a gas collection and control system

Initial reporting of waste in place and heat input capacity determine further applicability to rule (due Sept. 11, 2024, Ecology still accepting reports)

Implementation Timeline

DEPARTMENT OF ECOLOGY
State of Washington

May 13, 2024
Rule Adopted

June 13
Effective date of rule

July 18
Initial reporting guidance published

August 21
Electronic reporting guidance published

Sept. 11, 2024
Initial Reports Due

Sept - Oct
Receive reports

Oct - Nov
Review reports

TBD
Applicability determinations

Jan. 1, 2025
Law's Methane concentration limits go into effect

Methane Concentration Limits (RCW 70A.540.050)

- Surface methane concentration limits set by the authorizing law
- Beginning January 1, 2025 (with exceptions), no location on a MSW landfill surface may exceed the following limits:
  - 500 ppmv – determined by instantaneous SEM
  - Average of 25 ppmv – determined by integrated SEM
- Exceptions to this timeline include:
  - New system startup or modification of existing system to meet requirements
  - Accommodation provided for significant technological improvements (e.g., installation of energy recovery devices)

Comparison of Requirements

Requirement	Federal	State
Surface emissions monitoring	30-meter intervals	25-foot intervals (same as CA, OR, and MD)
Monitoring exceedances	10 days corrective action(s) & remonitoring (1st and 2nd) 120 days for 3rd	Same + notification to Ecology or local clean air agency within two days of corrective action(s) and remonitoring
Design plan (for landfills without a GCCS)	Within 1 year after first NMOC emission report showing ≥34 Mg per year (active) or ≥50 Mg (closed)	Within 1 year of effective date of rule (June 13, 2025) or detecting leak of >200 ppmv surface methane

Comparison of Requirements (cont'd)

Requirement	Federal	State
Installation and operation of a GCCS	Within 30 months after NMOC emission report shows ≥34 Mg per year (active) or ≥50 Mg (closed)	18 months after effective date of rule (December 2025) 30 months after effective date of rule (December 2026) (with exceptions)
Shutdown/Removal of a GCCS	Minimum 15-year operation; NMOC emission rate ≤ 34 Mg/year (active) or ≤ 50 (closed) for 3 successive test dates; closure report	Minimum 15-year operation; No SEM exceedances (≤ 500 ppmv) for 3 successive dates; closure report; provisional shutdown and 8 quarters SEM no exceedances

Third-party Owners or Operators

- Entities that own stationary equipment for collection, treatment and/or combustion of LFG, or purchase or obtain untreated LFG from MSW landfills
- May be subject to requirements if they own/operate a portion of a GCCS or an energy recovery device (e.g., boilers, ICEs)
- Requirements may include monitoring of gas control system equipment and collection components, and methane destruction efficiency minimums:
  - Energy recovery devices must achieve a destruction efficiency of at least 97% by weight
  - Treatment and processing systems must achieve a leak rate of ≤ 3% by weight
  - Requirements ensure that leaks in the system are found, and corrective actions are taken to resolve them
- A few MSW landfills in the state partner with “third-party owners or operators” and route their LFG to these entities for energy recovery or treatment and processing

Treatment of LFG at MSW Landfills

- MSW landfills 3rd largest source of anthropogenic methane emissions in US (~ 14 % of emissions in 2022 – EPA)
- Chapter 173-408 WAC allows for flaring of LFG to destroy methane (must meet 99% destruction efficiency)
- Energy recovery is preferred:
  - Energy recovery devices (internal combustion engines, boilers, turbines, process heaters, etc.)
  - Treatment and processing of LFG for vehicle fuel and/or injection into pipeline.

Possible Barriers to RNG Development

- Economic feasibility
  - How much gas generated/quality of gas at site
  - Location – e.g., proximity to an existing gas pipeline
- Operational efficiency of GCCS
  - Gas collection equipment leaks
  - Cover property management
  - Leachate management
  - Uncertainty in modeling – e.g., assumed gas collection efficiency

EPA – Landfill Methane Outreach Program (LMOP)

- Voluntary program
- Provides technical assistance, guidance and software to help industry assess feasibility of LFG projects
- Fosters partnerships and identifies financing for biogas projects

Email: lmop@epa.gov
Website: https://www.epa.gov/lmop

Ecology Landfill Methane Grants Update

- Grants to help landfills meet compliance with rule (including design planning and installation of a GCCS)
- Application period closed on October 1, 2024
- Currently scoring grant applications
- Awards out in November (anticipated)
- Contact: janee.zakoren@ecy.wa.gov

Contact & Resources

Contacts

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Resources

- Implementation Guidance Webpage: https://www.ezview.wa.gov/site/alias__1962/41956/landfill_methane_emissions_guidance.aspx
- Secure Access Washington (SAW) Portal: https://secureaccess.wa.gov/myAccess/saw/select.do
- Rulemaking Webpage

Thank you!

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Ecology's vision and mission

Our Mission

To protect, preserve, and enhance Washington's environment for current and future generations.

Our Vision

Our innovative partnerships protect and sustain healthy land, air, and water in harmony with a strong economy.

Ecology's strategic goals

Support and engage our communities, customers, and employees

Reduce and prepare for climate impacts

Prevent and reduce toxic threats and pollution

Protect and manage our state's waters