

LMOP Quick Reference Sheet: Regulations and Proposals Affecting Landfills and LFG Energy Projects*



July 2021

GHG Reporting Rule (final rule published 10/30/09) – MSW landfills are required to report if annual methane (CH₄) generation ≥ 25,000 metric tons CO₂e. Subject landfills report CH₄ generation, emissions and associated data. For the final rule, a landfill information sheet, FAQs, an applicability tool and data reported by subject landfills, see: epa.gov/ghgreporting and epa.gov/ghgreporting/subpart-hh-municipal-solid-waste-landfills.

Major Source Boiler and Process Heater NESHAP (final rule published 3/21/11; amended 1/31/13 and 11/20/15) – The NESHAP established air toxic standards for new and existing industrial, commercial and institutional boilers and process heaters at major source facilities. A unit used as a control device to comply with another MACT standard is exempt from the rule if ≥ 50% of its average annual heat input over a 3-year period is from the gas stream regulated under that standard.

Otherwise, LFG-fired units will be subject to tune-up work practices if they:

- Operate infrequently or at very low loads (as specified in the rule), or
- Have a design heat input capacity < 10 MMBtu/hr, or
- Fire a gas stream that either meets a minimum CH₄ content or heating value or does not exceed the maximum Hg concentration.

Units not meeting the above criteria would be subject to emission limits for PM (or non-Hg metals), HCl, Hg and CO. For more information, see: epa.gov/stationary-sources-air-pollution/industrial-commercial-and-institutional-boilers-and-process-heaters.

Internal Combustion Engine NESHAP (final rule published 8/20/10, amended 1/30/13) **and NSPS** (promulgated 1/18/08, amended 6/28/11 and 1/30/13) – The NESHAP established emission standards, monitoring, recordkeeping and reporting requirements for LFG-fired internal combustion engines at major and area sources of HAP. Existing, non-emergency, spark ignition, LFG-fired engines:

- ≥ 100 HP and ≤ 500 HP at major sources: limit of 177 ppmvd CO at 15% O₂.
- any size at area sources: management practice standards in lieu of a CO limit.

Previous NESHAP in 2004 and 2008 set standards for other LFG-fired engines.

The final Spark Ignition NSPS contains emission standards, monitoring, recordkeeping and reporting requirements for new spark ignition engines (including LFG-fired). New spark ignition engines which commenced construction after 6/12/06, and modified or reconstructed engines which commenced modification after 6/12/06, must meet specific emission limits for criteria pollutants (NO_x, CO, VOC). However, performance testing is not required for spark ignition engines that have been certified by the manufacturer and are operated and maintained according to the manufacturer's instructions with maintenance records kept to demonstrate compliance.

For the final rules and other information, see: epa.gov/stationary-engines.

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NSPS and EG for MSW Landfills (final rules published 3/12/96, 8/29/16, 3/26/20, 5/21/21) – The NSPS and EG established standards for MSW landfill emissions of non-methane organic compounds (NMOCs) as a surrogate for LFG. Landfills with a design capacity greater than or equal to 2.5 million Mg and 2.5 million cubic meters and estimated NMOC emissions of at least 34 Mg per year must reduce their emissions of LFG.

- The updated NSPS apply to landfills constructed, modified or reconstructed after July 17, 2014.
- The updated EG apply, through EPA-approved state plans or the federal plan, to landfills constructed, modified or reconstructed on or before July 17, 2014. Existing landfills that closed on or before September 27, 2017 are subject to an NMOC threshold of 50 Mg per year instead of 34 Mg per year.
- The federal plan to implement the 2016 EG for any landfill not covered under an approved state plan was published in 2021.
- Amendments to the NSPS and EG were published in 2020 (as part of the MSW Landfills NESHAP amendments) to allow landfills to demonstrate compliance with certain provisions of the NSPS and EG by following the corresponding requirements in the NESHAP.

For the final rules and other information, see: [epa.gov/stationary-sources-air-pollution/municipal-solid-waste-landfills-new-source-performance-standards](https://www.epa.gov/stationary-sources-air-pollution/municipal-solid-waste-landfills-new-source-performance-standards).

NESHAP for MSW Landfills (final rules published 1/16/03, 3/26/20) – The NESHAP established standards for HAP emissions from MSW landfills. Landfills with design capacities of at least 2.5 million Mg and 2.5 million cubic meters and estimated uncontrolled emissions of NMOCs of at least 50 Mg per year are required to collect and treat or control emissions of LFG. Subject landfills that operate part or all of the landfill as a bioreactor must install collection and control systems for the bioreactor earlier than would be required by the NSPS. The NESHAP also require semi-annual compliance reporting, instead of the annual reporting required by the NSPS. Amendments to the NESHAP were published in 2020 as part of the MSW Landfill Risk and Technology Review.

For the final rule and other information, see: [epa.gov/stationary-sources-air-pollution/municipal-solid-waste-landfills-national-emission-standards](https://www.epa.gov/stationary-sources-air-pollution/municipal-solid-waste-landfills-national-emission-standards).

Criteria for MSW Landfills (final rule published 10/9/91) – As required under the Resource Conservation and Recovery Act (RCRA), this regulation established minimum national criteria for all MSW landfills, including location restrictions; design and operating standards; ground water monitoring requirements; corrective actions; financial assurance requirements; and migration control, closure requirements and post-closure requirements.

For the final rule and other information, see: [epa.gov/rcra/resource-conservation-and-recovery-act-rcra-regulations#nonhaz](https://www.epa.gov/rcra/resource-conservation-and-recovery-act-rcra-regulations#nonhaz) and [ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr258_main_02.tpl](https://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr258_main_02.tpl).

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For More Information

LMOP LFG Energy Project Development Handbook, Chapter 5. Landfill Gas Contracts and Permitting
[epa.gov/lmop/landfill-gas-energy-project-development-handbook](https://www.epa.gov/lmop/landfill-gas-energy-project-development-handbook)

EPA Climate Change site
[epa.gov/climatechange/](https://www.epa.gov/climatechange/)

Clean Air Act
[epa.gov/laws-regulations/summary-clean-air-act](https://www.epa.gov/laws-regulations/summary-clean-air-act)

Track EPA Rulemakings
[epa.gov/laws-regulations/regulations#track](https://www.epa.gov/laws-regulations/regulations#track)