

New Rules for Landfills

The new rules will ultimately replace the existing NSPS rule (40 CFR Part 60, Subpart WWW) and EG rules (40 CFR Part 60, Subpart Cc and state-equivalent rules).

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The USEPA landfill gas (LFG) rules were published in the Federal Register on August 29, 2016. These include an Emission Guideline (EG) rule (under Title 40 Code of Federal Regulations (40 CFR) Part 60, Subpart Cf) and a New Source Performance Standards (NSPS) rule (under 40 CFR Part 60, Subpart XXX). Both rules will affect newly defined NSPS sites (i.e., landfills that are new or expanded in capacity after July 17, 2014) and EG sites (i.e., existing landfills that have not been expanded or were not newly constructed after July 17, 2014), respectively.

The new NSPS rule takes effect 60 days from publication in the Federal Register. States and local air jurisdictions have nine months from publication to prepare their EG rules. EPA has an additional four months to approve or disapprove of the state/local EG rules. Thus, for existing sites subject to the new EG rule, there will be a time lag before the EG rule becomes effective in their jurisdiction.

What's New

The major component of both rules is that the 50 mg/year of non-methane organic compounds (NMOCs) emission threshold, which triggers the need for an LFG collection and control system (GCCS), will be lowered to 34 mg/year for all landfills—with one exception. Existing, closed sites, as defined in the rule under the closed landfill subcategory (sites that are already closed or close within 13 months of publication), can continue to use the 50 mg/yr threshold. This appears to be the centerpiece of EPA's

plan to create additional NMOC and methane reductions from landfills nationally.

Other Key Components

Treatment Definition. The definition of LFG treatment has reverted to the original NSPS definition of filtration, dewatering and compression, without numeric limits or special monitoring, which has been in common use in the industry. EPA has added a notation that beneficial use can include technologies beyond combustion, such as vehicle

Surface Monitoring. All penetrations to the landfill cover must now be monitored during each quarterly surface emission monitoring (SEM) event. This is in addition to monitoring the required serpentine path across the landfill surface, the path around the perimeter of the landfill, and for areas where visual observations suggest a potential leak. Monitoring penetrations can add significant time and cost to quarterly SEM events. EPA considers penetrations to be the largest source of surface emission

exceedances, and so they are mandating additional monitoring. However, at the industry's request, EPA has provided some guidance on penetrations to define what they are and what they aren't. Per EPA, LFG wellheads are a regulated penetration type while, for example, fence posts are not. Also, latitude and longitude must be recorded for each exceedance location within +/-4 meter accuracy. The use of handheld global positioning system (GPS) devices for flagging SEM exceedances

should satisfy EPA's proposed requirements for location data.

Tier 4. A new Tier 4 methodology has been added to the rules to assess whether a GCCS is required once NMOC emissions exceed 34 mg/year. The voluntary procedure includes four quarters of SEM with no allowed exceedance of the 500 parts per million by volume (ppmv) threshold for methane and then quarterly SEM for active sites and annual SEM for closed sites after the initial monitoring period. Monitoring under Tier 4 must be conducted during wind conditions less than 4 mph average and 10 mph instantaneous, and wind



fuels, pipeline quality gas, etc. This is a major victory for the LFG-to-energy (LFGE) industry, which was concerned that a rigid definition of treatment could negatively impact existing and new LFGE projects with additional costs and new compliance issues. However, the rules include a requirement for each regulated landfill to develop a treatment system monitoring plan for approval, to address treatment criteria. However, the regulations are unclear on whether the plan has to be submitted, and if so, how. There is a lingering concern that this plan requirement could give states and local agencies the ability to require numeric limits and monitoring requirements on a site-by-site basis.

speed monitoring is required during the SEM event. If wind speeds exceed these thresholds, a wind barrier can be used, but no monitoring can occur when instantaneous wind speeds exceed 25 mph. This is generally a positive development, which should be very helpful for dry climate, or low gas-producing landfills, which only triggered the GCCS requirements due to a high NMOC concentration during Tier 2 testing and/or model defaults that over-predict LFG generation. However, the wind speed requirement, the fact that no landfill with NMOC emissions over 50 Mg/year (based on Tier 1 and 2 data) can use Tier 4, and the fact that one single exceedance can cause a failure of the Tier 4 may limit its value. The use of the Tier 4 process also includes notifications for each SEM event and annual reporting of results.

Wellhead Criteria. EPA has removed the wellhead monitoring threshold criterion for oxygen. Oxygen monitoring will still be required monthly, but no limits or exceedances will exist. Maintaining negative pressure and a temperature of less than 131°F are still requirements as in the existing NSPS and EG rules. Alternative timeline requests have been clarified as only being required if the exceedance cannot be corrected in 15 days. If this occurs, a root cause analysis must be conducted, and the exceedance remediated within 60 days. If not completed by 60 days, then the landfill must conduct a corrective action analysis and develop an implementation schedule, and complete remediation within 120 days. If more than 120 days will be necessary, the landfill must submit the root cause and corrective action analyses as well as the implementation schedule by 75 days. If more than 120 days is necessary, then Administrator approval is also required. This is one of the major issues put forth by industry and represents a success story for this rule development. Removing the oxygen requirement will eliminate a large number of wellhead exceedances and avoid the situation of operating the GCCS to meet arbitrary wellhead criteria rather than to minimize emissions.

Criteria for Removing GCCS. For removal/ decommissioning of the GCCS, the following three criteria must be met: (1) the landfill must be closed, (2) GCCS must have operated for 15 years or the landfill must demonstrate that GCCS could not operate

for 15 years due to declining flow, and (3) the calculated NMOC emission rate at the landfill is less than 34 mg/year on three consecutive test dates (50 mg/year for the closed landfill subcategory). This proposed provision provides some additional flexibility for eliminating GCCS requirements, but it is only a slight improvement over existing criteria.

Startup, Shutdown, and Malfunction (SSM) Requirements. The rule will now apply at all times, including SSM. This

would remove the former SSM exemption that was contained within the existing NSPS/EG rules and allowed landfills to avoid non-compliance during periods of SSM. In recognition of the unique nature of landfill emissions, and consistent with the need for standards to apply at all times, EPA has indicated that a work practice standard applies during SSM events. During such events, owners or operators must shut down the gas mover system and close all valves in the GCCS, which could contribute to the potential venting of the

gas to the atmosphere, within one hour. The landfill owner or operator must also keep records and submit reports of all periods when the collection and control device is not operating. The rules also contain criteria for managing SSM events for monitoring devices required for compliance with various rule requirements. By complying with the work practice standard and monitoring device SSM criteria, it is hoped that landfills can avoid potential compliance issues associated with SSM events. Specific details on how to deal with SSM events under the new criteria still have to be worked out with EPA since this is such a large departure from existing requirements.

Rule Clarifications and Minor Changes

GCCS Design Plans. Design Plans must be updated under two situations: (1) due 90 days after expansion of the GCCS into a new area, and (2) if changes made to the GCCS were not consistent with current plan. Third-party review/verification will not be required for Design Plans, as considered under the draft rules. Under the new rules, landfills must notify the state/local agency when a Design Plan has been completed and submit the signature page, stamped by a professional engineer. The agency will have 90 days to request a full copy of the plan to be submitted for review. If EPA doesn't, no submittal is required, although the landfill is still at risk for ensuring the Design Plan meets the rule criteria. If submittal is requested, the landfill is bound by requirements for working with the agency to get the plan approved and then complying with it.



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Electronic Reporting. Electronic filing will be required for performance test reports, NMOC emission rate reports, annual reports, Tier 4 reports, and liquids addition at landfills through EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). Owners or operators are allowed to maintain electronic copies of the records in lieu of hard copies to satisfy federal recordkeeping requirements. Although this may seem simple, experience with electronic reporting under the federal greenhouse gas reporting rule has been more complex and costly than originally thought.

EPA Method 25A. EPA Method 25A is now included in the rule for testing low NMOC concentrations on the control device outlet. The return of EPA Method 25A is an important allowance for stack testing of control devices for NMOC destruction demonstrations.

EPA Method 18. This method is not allowed for NMOC analysis by itself. It can, however, be used in conjunction with Method 25A.

Waste Definitions. EPA has clarified the definitions of "household waste" and "segregated yard waste" so that landfills that take these materials will not be defined as MSW landfills under the rules unless they accept other materials that would classify them as MSW. This should clear up previous confusion and avoid enforcement actions that several EPA regions attempted against C&D landfills.

Liquids Addition Landfills. EPA elected not to include any additional regulations for liquids addition landfills (i.e., those that recirculate leachate and/or accept liquid wastes); however, they are requiring specific information to be submitted as part of the electronic reporting that would help them decide how to regulate liquids addition landfills in the future.

Portable Meters. EPA has explicitly allowed the use of portable meters for compliance with EPA Methods 3A and 3C (nitrogen and oxygen). This rule change allows the continued use of portable meters commonly used in the industry.

Low-Producing Areas. EPA still requires that low-producing areas must be generating less than 1% of the NMOC emissions of the landfill as a whole before they can be removed from the gas collection and monitoring requirements. However, with the new rules, actual gas flow data and site-specific NMOC concentrations can be used in lieu of the LFG generation model for estimating NMOC emissions. This offers some additional flexibility but is much more limited than the industry had hoped for.

Industry Involvement

The landfill industry will be reviewing these rules in detail and will be providing guidance to the industry in conjunction with the Solid Waste Association of North America (SWANA) and the National Waste and Recycling Association (NW&RA). The industry will also continue to work with EPA on interpretations of the rules, and a copy of the rules and related documents is available at: www.epa.gov/ttn/atw/landfill/landflpg.html. **MSW**

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