## IN THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

## No. 17-1157

# NATURAL RESOURCES DEFENSE COUNCIL, CLEAN AIR COUNCIL, CLEAN WISCONSIN, and CONSERVATION LAW FOUNDATION,

Petitioners,

v.

E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, and UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Respondents.

## MOTION FOR SUMMARY VACATUR

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August 4, 2017

### CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to D.C. Circuit Rule 28(a)(1), Petitioners Natural Resources Defense Council, Clean Air Council, Clean Wisconsin, and Conservation Law Foundation certify as follows:

### (A) Parties and Amici

<u>Petitioners:</u> Natural Resources Defense Council, Clean Air Council, Clean Wisconsin, and Conservation Law Foundation.

<u>Respondents:</u> E. Scott Pruitt, in his official capacity as Administrator of the United States Environmental Protection Agency, and the United States Environmental Protection Agency.

<u>Movant-Intervenors:</u> National Waste & Recycling Association, Solid Waste Association of North America, Waste Management, Inc., Waste Management Disposal Services of Pennsylvania, Inc., and Republic Services, Inc.

### (B) Rulings Under Review

Petitioners seek review of the final action of Respondents published in the Federal Register at 82 Fed. Reg. 24,878 (May 31, 2017) and titled "Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills."

#### (C) Related Cases

Petitioners are aware of the following cases related to this matter that are currently pending in this Court:

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(1) Nat'l Waste & Recycling Ass'n, et al. v. EPA, D.C. Cir. No. 16-1371,

consolidated with D.C. Cir. No. 16-1374. These cases, which are currently held in abeyance, challenge the EPA regulation published at 81 Fed. Reg. 59,276 and titled "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills." That regulation has been stayed by EPA in the challenged action.

(2) Nat'l Waste & Recycling Ass'n, et al. v. EPA, D.C. Cir. No. 16-1372. This case, which is currently held in abeyance, challenges the EPA regulation published at 81 Fed. Reg. 59,332 and titled "Standards of Performance for Municipal Solid Waste Landfills." That regulation has been stayed by EPA in the challenged action.

## **RULE 26.1 DISCLOSURE STATEMENT**

Pursuant to Fed. R. App. P. 26.1 and D.C. Circuit Rule 26.1, Petitioners Natural Resources Defense Council, Clean Air Council, Clean Wisconsin, and Conservation Law Foundation make the following disclosures:

## Natural Resources Defense Council

Non-Governmental Corporate Party to this Action: Natural Resources Defense Council ("NRDC").

Parent Corporations: None.

<u>Publicly Held Company that Owns 10% or More of Party's Stock:</u> None. <u>Party's General Nature and Purpose:</u> NRDC, a corporation organized and existing under the laws of the State of New York, is a national nonprofit organization dedicated to improving the quality of the human environment and protecting the nation's endangered natural resources.

## **Clean Air Council**

Non-Governmental Corporate Party to this Action: Clean Air Council.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

<u>Party's General Nature and Purpose:</u> Clean Air Council is a non-profit corporation organized and existing under the laws of the Commonwealth of Pennsylvania. For 50 years, Clean Air Council has fought to improve air quality across Pennsylvania and the Mid-Atlantic Region and to protect everyone's right to a healthy environment.

## **Clean Wisconsin**

Non-Governmental Corporate Party to this Action: Clean Wisconsin.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Clean Wisconsin, created in 1970 as Wisconsin's Environmental Decade, is a nonprofit membership corporation organized and existing under the laws of Wisconsin, whose mission is to protect Wisconsin's air, water, and special places by being an effective voice in the legislature, state and federal agencies, and the courts.

## **Conservation Law Foundation**

Non-Governmental Corporate Party to this Action: Conservation Law Foundation. Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

<u>Party's General Nature and Purpose:</u> Conservation Law Foundation, a corporation organized and existing under the laws of the Commonwealth of Massachusetts, is a non-profit organization dedicated to improving the quality of the human environment in New England and the region's endangered natural resources.

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Authorities chiefly relied upon are marked with an asterisk.

# **GLOSSARY OF ABBREVIATIONS**

- Environmental Protection Agency EPA
- National Emission Standards for Hazardous Air Pollutants NESHAP

Pursuant to Federal Rule of Appellate Procedure 27 and D.C. Circuit Rule 27, Petitioners respectfully move for summary disposition and vacatur of the Environmental Protection Agency's ("EPA") administrative stay of regulations to limit emissions of landfill gas (including methane, smog-forming pollutants, and hazardous air pollutants) from municipal solid waste landfills. 82 Fed. Reg. 24,878 (May 31, 2017) (Attach. A).

## INTRODUCTION AND SUMMARY OF ARGUMENT

This case is a carbon copy of the recently-decided *Clean Air Council v. Pruitt*, No. 17-1145 (D.C. Cir. 2017).<sup>1</sup> The Administrator's action here suffers from the same flaws as the administrative stay vacated by this Court in *Clean Air Council*. The stay is premised on the supposed need for a reconsideration proceeding to cure notice failures in a prior rulemaking. But, like in *Clean Air Council*, no such notice failure occurred in that rulemaking. In the absence of a notice failure, reconsideration is not required, and the Administrator lacks authority to stay these Landfill Rules. *See Clean Air Council*, slip op. at 23. This unlawful stay must similarly be vacated.

The administrative stay suspends implementation of two 2016 EPA rules issued under section 111 of the Clean Air Act: (1) emission guidelines for existing municipal solid waste landfills, and (2) standards of performance for new and modified municipal solid waste landfills. Emission Guidelines, 81 Fed. Reg. 59,276 (Aug. 29,

<sup>&</sup>lt;sup>1</sup> Order, ECF 1682468 (July 3, 2017) (granting summary vacatur); Order, ECF 1686663 (July 31, 2017) (issuing mandate en banc).

2016) (Attach. B); New Source Performance Standards, 81 Fed. Reg. 59,332 (Aug. 29, 2016) (Attach. C) (collectively "Landfill Rules"). The Landfill Rules updated regulations issued twenty years earlier. In the 2016 rulemakings, EPA concluded that the updated Landfill Rules will significantly reduce emissions of landfill gas, a mixture produced by the decomposition of waste that includes methane, carbon dioxide, hazardous air pollutants, and volatile organic compounds that contribute to smog. 81 Fed. Reg. at 59,276 and 59,332. The 2016 Landfill Rules cover more landfills by lowering the emissions threshold above which a landfill must install and operate landfill gas collection and control systems. *Id.* The additional pollution reductions will "improve air quality and reduce the potential for public health and welfare effects associated with exposure to landfill gas emissions." 81 Fed. Reg. at 59,276.

Ignoring the benefits of these air pollution reductions, on May 31, 2017, EPA Administrator Scott Pruitt announced a stay of the Landfill Rules in their entirety for 90 days, without any showing that the statutory requirements for a stay under Clean Air Act section 307(d)(7)(B) were met. 82 Fed. Reg. at 24,878-79. The Administrator premised the stays on his decision to reconsider the rules in order to cure supposed notice defects in the prior rulemakings. *Id.* But just as in *Clean Air Council*, there were no such notice defects, and thus there is no basis for mandatory reconsideration proceedings and no authority to issue a stay. The Administrator may issue a stay only when he is *required* to open a reconsideration proceeding: when petitioners have raised objections that (a) were impracticable to raise during the public comment period (or

arose after that period) and (b) are of central relevance to the outcome of the rule. *Clean Air Council*, slip. op. at 13; 42 U.S.C. § 7607(d)(7)(B). Because the issues identified by the Administrator as the predicate for reconsideration simply do not meet these requirements, the Landfill Rules cannot be stayed or otherwise taken out of effect until EPA completes a notice and comment rulemaking and provides a reasoned and lawful basis to modify or replace them. *Clean Air Council*, slip op. at 11-12; *see* 42 U.S.C. § 7607(d)(1)-(6).

EPA's stay is a final agency action under 42 U.S.C. § 7607(b)(1), properly subject to review by this Court. *See Clean Air Council*, slip. op. at 6. This case is appropriate for summary disposition because its posture is identical to that in *Clean Air Council*. Because the objections on which reconsideration was granted do not meet the requirements of section 307(d)(7)(B), this stay is unlawful and should be vacated as "arbitrary, capricious," and "in excess of statutory . . . authority." 42 U.S.C. § 7607(d)(9)(A), (C).

#### **PROCEDURAL HISTORY**

In 1996, EPA issued standards of performance and emission guidelines to curb emissions of landfill gas (including methane, smog-forming pollutants, and hazardous air pollutants) from new and existing landfills. The original rules applied to landfills that emitted at least 50 metric tons of non-methane organic compounds<sup>2</sup> per year. *See* 61 Fed. Reg. 9,905, 9,912 (Mar. 12, 1996) (Attach. D). In 2014 and 2015, EPA proposed to update the performance standards and emission guidelines to cover additional, lower-emitting landfills by lowering the threshold at which controls are required to 34 metric tons of non-methane organic compounds per year. 79 Fed. Reg. 41,796, 41,811 (July 17, 2014) (Attach. E); 80 Fed. Reg. 52,100, 52,102 (Aug. 27, 2015) (Attach. F); 80 Fed. Reg. 52,162 (Aug. 27, 2015) (Attach. G). After receiving comments on the proposals, EPA issued the final Landfill Rules, both of which were effective October 28, 2016. 81 Fed. Reg. at 59,276 and 59,332.

Several waste industry groups<sup>3</sup> submitted a petition seeking reconsideration, new rulemaking, and an administrative stay of the Landfill Rules. Nat'l Waste & Recycling Ass'n *et al.*, Petition for Rulemaking, Reconsideration, and Administrative Stay (Oct. 27, 2016) [hereinafter "Industry Pet."] (Attach. H). The same parties re-

<sup>&</sup>lt;sup>2</sup> While the Landfill Rules regulate "landfill gas," which includes both methane and non-methane emissions, the Rules used the volume of non-methane organic compounds as a surrogate for the purpose of determining whether a landfill is subject to control requirements. 81 Fed. Reg. at 59,336.

<sup>&</sup>lt;sup>3</sup> National Waste & Recycling Association, Solid Waste Association of North America, Republic Services, Inc., Waste Management, Inc., and Waste Management Disposal Services of Pennsylvania, Inc. The same parties also challenged the Landfill Rules in this Court. *Nat'l Waste & Recycling Assoc. v. EPA*, No. 16-1371 (D.C. Cir. filed Oct. 27, 2016). Petitioners here are among the environmental and public health organizations that were granted leave to intervene in support of EPA in that case.

submitted the same petition on January 30, 2017 "in recognition of the recent change in leadership at EPA." Attach. I. The petition requested reconsideration of certain aspects of the Landfill Rules that the petitioners *claimed* to be eligible under Clean Air Act section 307(d)(7)(B). Industry Pet. at 26-27 (Attach. H). The petition also identified other issues that the petitioners acknowledged were *ineligible* for reconsideration; for these the petition requests that EPA "initiate rulemaking to address certain aspects of EPA's Final Rules that were raised in comments at proposal." *Id.* at 4-5. The petition thus conceded that the latter set of issues does not qualify for mandatory reconsideration. *Id.* A cursory examination of *all* the issues subsequently relied on by Administrator Pruitt shows that they could have been—and in fact were—raised in the original comment period.

On May 5, 2017, Administrator Pruitt sent the industry groups a letter granting reconsideration of six of the issues<sup>4</sup> in the petition, without offering any explanation of why the Administrator concluded that those issues qualified for reconsideration under section 307(d)(7)(B). Attach. J. Nonetheless, the letter assured petitioners that "EPA intends to exercise its authority under CAA section 307(d)(7)(B) to issue a 90-day stay of the effectiveness" of both Landfill Rules in their entirety. *Id.* at 2.

<sup>&</sup>lt;sup>4</sup> 1) The use of a "Tier 4" surface emissions monitoring-based alternative; 2) the annual liquids reporting requirement; 3) the procedures and timeline for undertaking corrective action to address an exceedance; 4) overlapping applicability between the Landfill Rules and other regulations; 5) the definition of cover penetration; and 6) landfill design plan approval.

The Administrator's letter to the industry groups became public only on May 22, 2017, when the notice of administrative stay was signed and posted on the agency's website, and subsequently published. *See* 82 Fed. Reg. at 24,878-79. The Federal Register notice granted reconsideration on the same six issues listed in the letter. *Id.* The notice offered only the barest assertion of a notice failure in the underlying rulemaking for only one of those issues—the use of so-called "Tier 4" surface emissions monitoring to demonstrate that a landfill's emissions are below the 34-ton applicability threshold. *Id.* at 24,879. For the other five issues, the notice offered no explanation at all of how they met the requirements of section 307(d)(7)(B). *Id.* 

Environmental and public health organizations, including Petitioners, twice demanded in writing that EPA withdraw this unlawful stay. Attachs. K, L. Administrator Pruitt declined to do so in a July 11, 2017, letter, which stated that he intended to "look broadly at the entire 2016 [Landfill Rules] during this reconsideration proceeding." Attach. M. The Administrator has submitted two proposals to extend the stay of the Landfill Rules to the Office of Management and Budget for review. Attachs. N, O. These pending proposals—like EPA's analogous proposals to extend the stay vacated in *Clean Air Council, see* slip op. at 5—suggest that the 90-day stay is only the first step toward a long-term suspension of the Landfill Rules.

### STANDING

Compliance with the Landfill Rules will reduce air pollution exposure for Petitioners' members, and many others across the country, who live in close proximity to affected landfills. Petitioners have associational standing based on the harm to their members caused by Respondents' action suspending implementation of the Landfill Rules. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).<sup>5</sup>

As waste decomposes, landfills emit harmful air pollution. These emissions include volatile organic compounds that contribute to ground-level ozone smog and particulate matter, which are associated with serious public health effects including asthma attacks, bronchitis, and heart attacks. 81 Fed. Reg. at 59,281. Landfills also emit numerous hazardous air pollutants, including cancer-causing pollutants. *Id.* These emissions threaten the health and welfare of communities near landfills. By 2025, the Landfill Rules are expected to reduce emissions of non-methane organic compounds by almost 2,100 metric tons per year. 81 Fed. Reg. at 59,280 and 59,335.

In addition to pollutants that cause localized health harms, landfills are also the country's "third largest source of human-related methane emissions," a potent greenhouse gas with 28 to 36 times more heat-trapping capacity over a 100-year period than carbon dioxide. 81 Fed. Reg. at 59,336. By 2025, the Landfill Rules are

<sup>&</sup>lt;sup>5</sup> See also Declaration of Gina Trujillo ¶¶ 4-7 (Attach. P); Declaration of Joseph O. Minott ¶¶ 3-5 (Attach. Q); Declaration of Kathryn A. Nekola ¶¶ 3-6 (Attach. R); Declaration of Sara Molyneaux ¶¶ 2-4 (Attach. S).

projected to reduce methane emissions by over 320,000 metric tons per year, in addition to over 300,000 metric tons of carbon dioxide emissions per year. 81 Fed. Reg. at 59,280 and 59,335. Combined, these reductions total approximately 8.5 million metric tons of carbon dioxide equivalent, roughly equal to one year's worth of emissions from 1.8 million passenger vehicles.<sup>6</sup>

The administrative stay delays the Landfill Rules' public health and climate benefits by suspending compliance obligations for the length of the current stay, and potentially for much longer if proposals to extend the stay are adopted (*see supra* at 6). Petitioners' members who live, work, and recreate near landfills covered by the Landfill Rules are exposed to landfill emissions and face increased risk of the associated health effects; the stay deprives them of the public health protections promised by the Landfill Rules. *See, e.g.*, Declaration of Craig Gooding ¶¶ 4-8 (Attach. T); Declaration of Susan Almy ¶¶ 10-13 (Attach. U); Nekola Decl. ¶¶ 19-21 (Attach. R). In addition, the health and well-being of Petitioners' members, and property and natural resources that they use, own, and enjoy, are presently being harmed by or are at risk of harm from climate change to which landfill greenhouse gas emissions contribute. *See, e.g.*, Declaration of Douglas I. Foy ¶¶ 17-20 (Attach. V); Gooding

<sup>&</sup>lt;sup>6</sup> See U.S. EPA, Greenhouse Gas Equivalencies Calculator (updated Jan. 24, 2017), https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Decl. ¶ 9-10 (Attach. T); Minott Decl. ¶ 18-22 (Attach. Q); Nekola Decl. ¶ 17-18 (Attach. R).

Delayed implementation of the Landfill Rules will diminish or negate the rules' public health and climate-protection benefits and exacerbate the threats to Petitioners' members' health and well-being and their use and enjoyment of their property and natural resources. This is sufficient to establish injury for standing purposes. Sierra Club v. EPA, 129 F.3d 137, 139 (D.C. Cir. 1997) (organization had standing to challenge delay in implementation of pollution-control measures that would benefit its members); see also Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc., 528 U.S. 167, 181–85 (2000) (disrupted enjoyment of natural resources and decreased property values due to pollution concerns are injuries in fact). EPA's action is the cause of this injury to Petitioners' members; their injury is redressable by a decision of this Court vacating EPA's stay and reinstating the Landfill Rules.

#### ARGUMENT

#### I. EPA's administrative stay is unlawful.

An administrative stay under section 307(d)(7)(B) is permitted only when reconsideration is required because of a notice failure in the prior rulemaking. *Clean* Air Council, slip op. at 10. For five of the six issues on which he granted reconsideration, the Administrator failed to articulate any rationale at all for why reconsideration was required. The Administrator offered a minimal explanation for only one issue, but that explanation patently fails to meet the statutory criteria.

### A. Administrative stays are unlawful absent mandatory reconsideration.

That EPA may undertake a new rulemaking to revise an existing regulation, in accordance with the procedures required by the Clean Air Act, is unchallenged. *See* 42 U.S.C. § 7607(d)(1)-(6). What the Administrator may not do is summarily stay an existing regulation while contemplating revisions to it. *Clean Air Council*, slip op. at 11-12; *see also Nat'l Family Planning & Reproductive Health Assoc. v. Sullivan*, 979 F.2d 227, 234 (D.C. Cir. 1992) ("an agency issuing a legislative rule is itself bound by the rule until that rule is amended or revoked").

A temporary stay is permissible only in the context of a mandatory reconsideration proceeding under Clean Air Act section 307(d)(7)(B). *Clean Air Council*, slip op. at 13. Section 307(d)(7)(B) specifies the limited circumstances under which reconsideration is required:

If the person raising an objection can demonstrate to the Administrator that it was *impracticable to raise such objection within such time* or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) *and if such objection is of central relevance to the outcome of the rule*, the Administrator shall convene a proceeding for reconsideration of the rule . . . Such reconsideration shall not postpone the effectiveness of the rule. The effectiveness of the rule may be stayed during such reconsideration, however, by the Administrator or the court for a period not to exceed three months.

42 U.S.C. § 7607(d)(7)(B) (emphasis added). Accordingly, reconsideration is mandatory, and a three-month stay permissible, only when both criteria are met: an

objection that was "impracticable to raise" and that is of "central relevance" to the rule. *Clean Air Council*, slip op. at 13.

The impracticability of raising an objection turns on whether the final rule is a "logical outgrowth" of the proposal—that is, where the proposed rule provided sufficient notice that stakeholders should have raised the objection during the public comment period. *North Carolina v. EPA*, 531 F.3d 896, 928–29, *modified in part on reb'g*, 550 F.3d 1176 (D.C. Cir. 2008) (reconsideration petitioner "fail[ed] to demonstrate a statutory ground that would require reconsideration" where final agency action was a "logical outgrowth" and petitioner had "not demonstrated that it was impracticable to raise such objection within the comment period"); *see also CSX Transportation, Inc. v. Surface Transportation Board*, 584 F.3d 1076, 1081 (D.C. Cir. 2009) ("a final rule represents a logical outgrowth where the [proposal] expressly asked for comments on a particular issue or otherwise made clear that the agency was contemplating a particular change.").

All of the issues on which Administrator Pruitt granted reconsideration were adequately noticed in the proposed rules, and therefore objections were not impracticable to raise—and in fact *were* raised—during the period for public comment.

# B. The stay notice fails to justify reconsideration for five of the six issues where it was granted.

In his grant of reconsideration and stay, the Administrator failed to provide any rationale whatsoever for why five of the six issues on which he granted

reconsideration meet the requirements of section 307(d)(7)(B). 82 Fed. Reg. at 24,878-79. A court "must judge the propriety of such action solely by the grounds invoked by the agency." *Sec. & Exch. Comm'n v. Chenery Corp.*, 332 U.S. 194, 196 (1947). For five of the issues, the notice provides nothing but the unsupported statement that the statutory criteria were met. 82 Fed. Reg. at 24,878-79. This total lack of explanation fails the minimum requirements for reasoned decision-making, where the agency must "articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quotation omitted). Because Administrator Pruitt provided no explanation for why reconsideration of these five issues is mandatory, a stay based on reconsideration of those issues is arbitrary, capricious, and unlawful. 42 U.S.C. § 7607(d)(9)(A).

# C. Reconsideration of the surface emissions monitoring issue is not mandatory.

The one issue for which the Administrator did minimally articulate his rationale—the availability of using "Tier 4" surface emissions monitoring to demonstrate that a landfill's emissions are below the 34-ton threshold—fails to meet the requirements for reconsideration under section 307(d)(7)(B). The Administrator claims to have found two notice defects with respect to the Tier 4 monitoring option: (1) he asserts that certain wind speed restrictions were not proposed, and (2) he

asserts that industry was not on notice that the option would be available only to lower-emitting landfills. 82 Fed. Reg. at 24,879. Neither assertion is correct.

A brief explanation of the function of Tier 4 monitoring will set the context. The Landfill Rules require landfills to install a gas collection and control system if their non-methane organic compound emissions are above 34 metric tons per year. 81 Fed. Reg. at 59,278 and 59,333-34. Under the 1996 rules, whether a landfill met the previously applicable 50-ton threshold was determined using three "tiers" of emissions modelling. 61 Fed. Reg. at 9,907. The 2016 Landfill Rules added a "Tier 4" option for landfills whose modelled emissions are determined to fall between 34 and 50 metric tons per year using the three tiers of emissions modeling methods. For these landfills, the Rules add the option to use surface emissions monitoring to demonstrate that their actual emissions rate is below the threshold, and therefore that the landfill need not install controls. 81 Fed. Reg. at 59,334.

The Administrator's stay notice claimed that certain conditions on the use of Tier 4 monitoring—"limits on wind speed, the use of barriers" and "restricting the use of Tier 4 [monitoring] to landfills with ...emission rates between 34 and 50" tons per year—"were not included in the proposal." 82 Fed. Reg. at 24,879. The Administrator's claim is plainly erroneous.

#### 1. Wind restrictions

The Landfill Rules established wind restrictions to assure that Tier 4 emissions monitoring would yield representative results. Because surface emissions

measurements can be distorted in windy conditions, the Landfill Rules require that a wind barrier must be used during Tier 4 monitoring when the average wind speed exceeds four miles per hour, or gusts are above 10 miles per hour. 81 Fed. Reg. at 59,287 and 59,344. Tier 4 measurements cannot be conducted if the average wind speed exceeds 25 miles per hour. *Id.* 

EPA first gave notice of these issues in the 2014 advance notice of proposed rulemaking that preceded the proposed rulemaking. The advance notice indicated concern with how "air movement can affect whether the monitor is accurately reading the methane concentration" and solicited comment on whether surface emissions monitoring should be allowed during periods of elevated wind speed. 79 Fed. Reg. 41,771, 41,789 (July 17, 2014) (Attach. W). Due to the concern that "conducting" surface emissions monitoring during windy periods may not yield readings that are representative of the emissions," in the 2014 proposed rule for new sources EPA again "requested public comment on surface monitoring procedures...such as...allowing sampling only when wind is below a certain speed." 79 Fed. Reg. at 41,822. EPA again solicited public comment on this issue in the 2015 proposed rule and considered "not allowing surface emissions monitoring when the average wind speed exceeds 5 [miles per hour]." 80 Fed. Reg. at 52,135-36. Industry stakeholders submitted comments in response to each of these requests. See, e.g., Waste Management, Comments on Supplemental Proposal, at 15-16 (Oct. 26, 2015) (Attach. X).

These facts show that the Administrator's current contention that the issue of wind restrictions on the use of surface emissions monitoring is plainly wrong. Reconsideration is not required where the Agency clearly requested comment on the specific issue, and stakeholders commented on the issue, as they did here. *Clean Air Council*, slip. op. at 14.

#### 2. Limitation to Under-50-Ton Landfills

The Administrator's stay notice claims that stakeholders were deprived of the opportunity to comment on the final Landfill Rules' decision to limit the Tier 4 monitoring option to landfills with modelled emissions in the 34 to 50 metric ton range. 82 Fed. Reg. at 24,879. This is both plainly erroneous and of no real-world impact.

The proposed rules included the Tier 4 monitoring option for all landfills with modelled emissions above 34 metric tons per year. The proposals requested "input on all aspects of implementing a new Tier 4 option." 79 Fed. Reg. at 41,791 and 41,824; *see also* 80 Fed. Reg. at 52,127-29. The 2015 proposal (80 Fed. Reg. at 52,137) also specifically asked for comment on how to harmonize these standards with another existing standard, the 2003 National Emission Standards for Hazardous Air Pollutants (NESHAP) for landfills established under section 112 of the Act. 40 C.F.R. § 63.1955. The 2003 NESHAP requirements were identical to those of the original 1996 New Source Performance Standards and Emission Guidelines. They all applied to landfills

with emissions exceeding 50 metric tons per year, and they required the same emission controls. *See* 81 Fed. Reg. at 59,334.

There is no question that industry commenters were aware of the NESHAP and its relationship to the section 111 Landfill Rules at issue in this rulemaking. In fact, Waste Management and others commented on the issue, urging consistency between the Landfill Rules and the NESHAP.<sup>7</sup> In response, the final Landfill Rules limited the Tier 4 option to landfills in the 34 to 50 ton range specifically to avoid any conflict with the NESHAP. 81 Fed. Reg. at 59,279 and 59,334. Because commenters recognized and actually commented upon the very issue that Administrator Pruitt identified, and because the agency response is a clearly logical outgrowth of the proposal and comments, there is no factual support for his claim that affected parties were not on notice of that issue during the original rulemakings. *See Clean Air Council,* slip op. at 23; *Nat'l Mining Ass'n v. Mine Safety & Health Admin.*, 512 F.3d 696, 699-700 (D.C. Cir. 2008) (no notice violation when comments demonstrate actual notice).

<sup>&</sup>lt;sup>7</sup> See Waste Management 2015 Comments at 45 (citing EPA's description of the interrelationship between the proposed rules and the NESHAP and expressing concerns regarding inconsistency) (Attach. X); Waste Management, Comments on Advanced Notice of Proposed Rulemaking, at 11-12 (Sept. 15, 2014) (Attach. Y) (describing potential overlap in requirements between the performance standards and the Subpart AAAA NESHAP); *see also* Republic Services, Comments on Proposed Rulemaking, at 31 (Oct. 26, 2015) (Attach. Z) (recommending "a coordinated rule with the NESHAP Subpart AAAA and NSPS/emission guidelines to ensure a consistent approach").

Finally, Tier 4 is of limited relevance to the suite of landfill regulations.

Restricting the use of Tier 4 monitoring to under-50-ton landfills has no practical effect on above-50-ton landfills—even if EPA's NSPS and emission guideline rules under section 111 allowed a landfill with modelled emissions above 50 tons to use Tier 4 and measure actual emissions, that landfill would still have to install the same controls under the section 112 NESHAP regardless of the result of the Tier 4 monitoring. Because the original section 111 standards applied to above-50-ton landfills for more than 20 years without a Tier 4 option, it is not credible to claim that Tier 4 "go[es] to the heart of the decisionmaking process," as required for a valid reconsideration. *Air Pollution Control Dist. of Jefferson Cnty. v. EPA*, 739 F.2d 1071, 1079 (6th Cir. 1984).

For these reasons, the Administrator's claim that there was a notice failure requiring reconsideration is patently meritless. Further, limiting the Tier 4 option to lower-emitting landfills is not of central relevance because it had no real-world impact on higher-emitting landfills already subject to the same requirements under the NESHAP regulations.

# D. None of the remaining issues meet the requirements for mandatory reconsideration.

As noted, the Administrator gave no explanation why the five other identified issues merited reconsideration, and thus a stay based on reconsideration of those

issues is arbitrary, capricious, and unlawful. Nonetheless, a brief summary explains how any such claim would fail.

Annual Liquids Reporting. The proposed rules requested comment on whether to impose different requirements on wet landfills or landfills that add liquid to facilitate waste decomposition. 79 Fed. Reg. at 41,784 and 41,808. Industry stakeholders commented that EPA did not have enough data to justify different compliance regimes for wet landfills. Waste Management 2014 Comments at 11-12 (Attach. Y); Waste Management 2015 Comments at 43-44 (Attach. X); Republic Services 2015 Comments at 31 (Attach. Z). In response, EPA agreed that it lacked the necessary data to impose different requirements for wet landfills at this time. The final Rules' requirement that landfills annually report the quantities of added or recirculated liquids is an obvious logical outgrowth of the proposal and the comments concerning the need for more data. 81 Fed. Reg. at 59,295-96 and 59,350-51.

*Corrective Action Timeline Procedures.* EPA specifically requested comment on the appropriateness of a schedule for landfill owners to submit an alternative corrective action timeline after a landfill exceeds emission limits. 79 Fed. Reg. at 41,793 and 41,820; 80 Fed. Reg. at 52,126-27. In response, an industry commenter recommended a "root cause analysis and corrective action procedure" as "particularly appropriate for landfills." Republic Services 2015 Comments at 13. The final Landfill Rules adopted requirements nearly identical to that recommendation—they imposed minimal analytical requirements to determine the cause of the exceedance and how to remedy

the problem, and required submission of that analysis and timeline to the Administrator for approval only if the remedy will take longer than 120 days. 81 Fed. Reg. at 59,293-94 and 59,348-50. These requirements are a logical outgrowth of the proposals, as informed by numerous comments. *See Appalachian Power Co. v. EPA*, 135 F.3d 791, 816 (D.C. Cir. 1998).

Overlapping Applicability; Definition of Cover Penetration; Design Plan Approval. As industry stakeholders themselves acknowledged, the remaining three issues do not meet the criteria for reconsideration because they "were raised in comments at proposal." Industry Pet. at 4 (Attach. H). As industry concedes, these issues do not require reconsideration, and therefore are ineligible bases for a stay, because they were noticed in the proposal and the agency received comment on them. Like the others, these three issues plainly fail to meet the criteria for mandatory reconsideration.

#### CONCLUSION

Because the Administrator identified no issue where reconsideration was required under section 307(d)(7)(B), his stay of the Landfill Rules was arbitrary, capricious, and contrary to law. The Court should grant the motion for summary disposition on the merits and vacate EPA's unlawful administrative stay. Dated: August 4, 2017

<u>/s/ Melissa J. Lynch</u> David D. Doniger Melissa J. Lynch Natural Resources Defense Council 1152 15th Street NW, Suite 300 Washington, DC 20005 Telephone: (202) 289-2403 ddoniger@nrdc.org llynch@nrdc.org *Counsel for Natural Resources* Defense Council Respectfully submitted,

Ann Brewster Weeks James P. Duffy Clean Air Task Force 18 Tremont Street, Suite 530 Boston, MA 02018 Telephone: (617) 624-0234 aweeks@catf.us jduffy@catf.us *Counsel for Clean Air Council, Clean Wisconsin, and Conservation Law Foundation* 

## **CERTIFICATE OF COMPLIANCE**

I hereby certify, in accordance with Federal Rules of Appellate Procedure 32(g)(1) and 27(d)(2)(A), that the foregoing Motion for Summary Vacatur contains 4,629 words, and thus complies with the 5,200 word limit.

This document complies with the typeface and type-style requirements of Federal Rules of Appellate Procedure 32(a)(5) and 32(a)(6) because this document has been prepared in a proportionally spaced typeface using Microsoft Word in Garamond 14-point font.

Dated: August 4, 2017

<u>/s/ Melissa J. Lynch</u> Melissa J. Lynch

## **CERTIFICATE OF SERVICE**

I hereby certify that on this 4th day of August, 2017, I have served the foregoing Motion for Summary Vacatur on all registered counsel through the court's electronic filing (ECF) system.

Dated: August 4, 2017

<u>/s/ Melissa J. Lynch</u> Melissa J. Lynch

## IN THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 17-1157

# NATURAL RESOURCES DEFENSE COUNCIL, CLEAN AIR COUNCIL, CLEAN WISCONSIN, and CONSERVATION LAW FOUNDATION,

Petitioners,

v.

E. SCOTT PRUITT, Administrator, U.S. Environmental Protection Agency, and UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Respondents.

## ATTACHMENTS TO MOTION FOR SUMMARY VACATUR

David D. Doniger Melissa J. Lynch Natural Resources Defense Council 1152 15th Street NW, Suite 300 Washington, DC 20005 Telephone: (202) 289-2403 ddoniger@nrdc.org llynch@nrdc.org *Counsel for Natural Resources Defense Council*  Ann Brewster Weeks James P. Duffy Clean Air Task Force 18 Tremont Street, Suite 530 Boston, MA 02018 Telephone: (617) 624-0234 aweeks@catf.us jduffy@catf.us *Counsel for Clean Air Council, Clean Wisconsin, and Conservation Law Foundation* 

August 4, 2017

Attach.	Title	Page			
Α	U.S. EPA, Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; <b>Stay, 82 Fed. Reg. 24,878</b> (May 31, 2017)				
В	U.S. EPA, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Final Rule, 81 Fed. Reg. 59,276 (Aug. 29, 2016) (excerpts)				
С	U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; <b>Final Rule, 81 Fed. Reg. 59,332 (Aug. 29, 2016)</b> (excerpts)				
D	U.S. EPA, Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills; <b>Final Rule and Guideline, 61 Fed. Reg. 9,905</b> (Mar. 12, 1996) (excerpts)	32			
Е	U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; <b>Proposed Rule, 79 Fed. Reg. 41,796 (July 17, 2014)</b> (excerpts)				
F	U.S. EPA, Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills; <b>Proposed</b> <b>Rules, 80 Fed. Reg. 52,100 (Aug. 27, 2015)</b> (excerpts)	51			
G	U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; <b>Supplemental Proposal, 80 Fed. Reg. 52,162 (Aug.</b> <b>27, 2015)</b> (excerpts)	61			
Н	Nat'l Waste & Recycling Ass'n, et al., <b>Petition for Rulemaking</b> , <b>Reconsideration, and Administrative Stay (Oct. 27, 2016)</b> (excerpts)	63			
Ι	Nat'l Waste & Recycling Ass'n, et al., Petition for Rulemaking, Reconsideration, and Administrative Stay; <b>Resubmission</b> (Jan. 30, 2017)	74			
J	Letter from E. Scott Pruitt, EPA Administrator, to Carroll W. McGuffey, Republic Services, et al. (May 5, 2017)	78			
K	Letter from Ann Weeks, Clean Air Task Force, et al., to E. Scott Pruitt, EPA Administrator (June 14, 2017)	81			

L	Letter from Ann Weeks, Clean Air Task Force, et al., to E. Scott Pruitt, EPA Administrator (July 10, 2017)				
М	Letter from E. Scott Pruitt, EPA Administrator, to David Doniger, Natural Resources Defense Council (July 11, 2017)				
Ν	<b>Office of Management and Budget, Notice</b> Pending EO 12866 Regulatory Review: Extension of Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (last visited July 30, 2017)				
0	Office of Management and Budget, Notice Pending EO 12866 Regulatory Review: Stay of Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (last visited July 30, 2017)				
Р	Declaration of Gina Trujillo, Natural Resources Defense Council				
Q	Declaration of Joseph O. Minott, Clean Air Council				
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W	U.S. EPA, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Advanced Notice of Proposed Rulemaking, 79 Fed. Reg. 41,771 (July 17, 2014) (excerpts)				
X	Waste Management, Comments on Supplemental Proposal (Oct. 26, 2015), Doc. No. EPA-HQ-OAR-2003-0215-0198 (excerpts)				
Y	Waste Management, Comments on Advanced Notice of Proposed Rulemaking (Sept. 15, 2014), Doc. No. EPA-HQ-OAR- 2014-0451-0037 (excerpts)	164			
Z	Republic Services, Comments on Proposed Rulemaking (Oct. 26, 2015), Doc. No. EPA-HQ-OAR-2014-0451-0176 (excerpts)	168			

# Attachment A

U.S. EPA, Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Stay, 82 Fed. Reg. 24,878 (May 31, 2017)

Ohio nonattainment area has been approved as submitted on June 29, 2016.

(e) EPA is approving the existing controls and maintenance provisions in the permit to install for the Ferro facility including the preventative maintenance plan, 0.3 tpy combined emissions limit for units P064 through P069 as well as the base control devices and upgrades, in addition the 0.009 tpy limit for P071 and all base control devices and upgrades for units P001, P071, P100, P101, and P951 as fulfilling the RACM/ RACT 172(c)(1) requirement.

#### PART 81—DESIGNATION OF AREAS FOR AIR QUALITY PLANNING PURPOSES

■ 4. The authority citation for part 81 continues to read as follows:

#### OHIO-2008 LEAD NAAQS

Authority: 42 U.S.C. 7401 et seq.

■ 5. Section 81.336 is amended by revising the entry for "Cleveland, OH:" in the table entitled "Ohio—2008 Lead NAAQS" to read as follows:

#### §81.336 Ohio.

\* \* \* \*

	Designated area				Designation for the 2008 NAAQS <sup>a</sup>	
Designated area			Date 1	Туре		
*	*	*	*	*	*	*
Cleveland, OH: Cuyahoga County (part) The portions of Cuyahoga County that are bounded on the west by Washington Park Blvd./ Crete Ave./East 49th St., on the east by East 71st St., on the north by Fleet Ave., and on the south by Grant Ave.				5/31/2017	Attainment.	
		*			*	*

<sup>a</sup> Includes Indian Country located in each country or area, except as otherwise specified. <sup>1</sup> December 31, 2011, unless otherwise noted.

[FR Doc. 2017–10968 Filed 5–30–17; 8:45 am] BILLING CODE 6560–50–P

#### ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 60

[EPA-HQ-OAR-2003-0215 and EPA-HQ-OAR-2014-0451; FRL-9963-19-OAR]

#### RIN 2060-AT62

#### Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency (EPA).

#### ACTION: Stay.

**SUMMARY:** By a letter dated May 5, 2017, the Administrator announced the convening of a proceeding for reconsideration of certain requirements in the final rules, "Standards of Performance for Municipal Solid Waste Landfills," and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills," both published on August 29, 2016. In this action, the EPA is staying subparts, which were added or revised by the two rules, for 90 days pending reconsideration.

**DATES:** Title 40 CFR part 60, subpart Cf, and 40 CFR part 60, subpart XXX, are stayed from May 31, 2017 until August 29, 2017.

ADDRESSES: Electronic copies of this document are available on the EPA's Web site at https://www.epa.gov/ stationary-sources-air-pollution/ municipal-solid-waste-landfills-newsource-performance-standards. Copies of this document are also available at https://www.regulations.gov, at Docket ID No. EPA-HQ-OAR-2003-0215 and EPA-HQ-OAR-2014-0451.

**FOR FURTHER INFORMATION CONTACT:** Mr. Peter Tsirigotis, Sector Policies and Programs Division (D205–01), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (888) 627–7764; email address: *airaction@epa.gov.* 

#### SUPPLEMENTARY INFORMATION:

#### I. Background

On July 14, 2016, the U.S. Environmental Protection Agency (EPA) Administrator signed a final rule establishing new source performance standards (NSPS) intended to reduce emissions of landfill gas from new, modified, and reconstructed municipal solid waste (MSW) landfills, thereby updating standards that were issued in 1996. In a separate action, the Administrator also signed a final rule revising guidelines for reducing emissions from existing MSW landfills, thereby updating the previous emissions guidelines (EG), which also were issued in 1996. The NSPS are codified at 40 CFR part 60, subpart XXX, and the EG are codified at 40 CFR part 60, subpart Cf. For further information on these

2016 rules, see 81 FR 59332 and 81 FR 59276 (August 29, 2016).

On October 27, 2016, a number of interested parties submitted administrative petitions to the EPA seeking reconsideration of various aspects of the 2016 rules pursuant to section 307(d)(7)(B) of the Clean Air Act (CAA) (42 U.S.C. 7607(d)(7)(B)).<sup>1</sup> Under section 307(d)(7)(B) of the CAA, the Administrator shall convene a reconsideration proceeding if, in the Administrator's judgment, the petitioner raises an objection to a rule that was impracticable to raise during the comment period or if the grounds for the objection arose after the comment period, but within the period for iudicial review. In either case, the Administrator must also conclude that the objection is of central relevance to the outcome of the rule. The Administrator may stay the effectiveness of the rule for up to 3 months during such reconsideration.

In a letter dated May 5, 2017, based on the criteria in CAA section 307(d)(7)(B), the Administrator convened a proceeding for reconsideration. The May 5, 2017, letter announced the convening of an administrative reconsideration proceeding to reconsider the following topics from one petition: (1) Tier 4 surface emission monitoring; (2) annual liquids reporting; (3) corrective action

<sup>&</sup>lt;sup>1</sup>Copies of these petitions are included in the docket for the 2016 rules, Docket ID No. EPA–HQ–OAR–2003–0215 and EPA–HQ–OAR–2014–0451.
timeline procedures; (4) overlapping applicability with other rules; (5) the definition of cover penetration; and (6) design plan approval. As part of the proceeding, the EPA will prepare a notice of proposed rulemaking that will provide the petitioners and the public an opportunity to comment on the issues identified in that letter. As explained in the letter, the EPA has not taken action on the remaining issues in the petitions for reconsideration. A copy of the letter is included in the dockets for this rule, Docket ID No. EPA-HQ-OAR-2003-0215 and EPA-HQ-OAR-2014-0451.

The EPA convened a proceeding for reconsideration based on the determination that some of the objections raised in the petition for reconsideration met the criteria set forth in CAA section 307(d)(7)(B), 42 U.S.C. 7607(d)(7)(B), which requires the Administrator to convene a proceeding for reconsideration of a rule when the person raising an objection to a rule can demonstrate: (1) That it was either impractical to raise the objection during the period for public comment or that the grounds for the objection arose after the period for public comment; and (2) that the objection is of central relevance to the outcome of the rule. In particular, we determined that the tier 4 surface emissions monitoring (SEM) issues raised in the petition for reconsideration met those criteria. The proposed rule included tier 4 SEM as an optional monitoring method; however, the final rule imposed restrictions on the use of tier 4 SEM, e.g., limits on wind speed, the use of wind barriers, and restricting the use of tier 4 SEM to landfills with non-methane organic compounds emission rates between 34 and 50 mega grams per year, that were not included in the proposal. While we believe that the restrictions are appropriate in light of the potential impact of the results of tier 4 SEM, we recognize that they were added without the benefit of public comment. Thus, we find that the petitioners have demonstrated that it was impractical to raise the objection during the period for public comment. We also find that the objection to the restrictions on the use of tier 4 SEM is of central relevance to the outcome of the rule. Tier 4 SEM can be used as a site-specific methodology for determining whether and when the requirement to install a gas collection and control system is triggered. The restrictions limit an owner's/operator's ability to use tier 4 SEM for those purposes, thereby reducing intended flexibility in the rule. If we had the benefit of public comment on the

restrictions, we might have structured the rule in such a way as to minimize any potential impacts on flexibility.

### II. Stay of Subparts Cf and XXX

By this action, the EPA is staying the subparts added or revised by two final rules, "Standards of Performance for Municipal Solid Waste Landfills," 81 FR 59332 and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills," 81 FR 59276 for 90 days pursuant to its authority under section 307(d)(7)(B) of the CAA. We believe that it is necessary to stay the subparts in their entirety because the tier 4 SEM provisions in the two rules are integral to how the rules function as a whole. The ability to use tier 4 SEM is a primary aspect of the flexibility we intended to include in the rule. Tier 4 SEM can be used to determine on a sitespecific basis whether and when the requirement to install and operate a gas collection and control system is triggered. The tier 4 SEM provision provides flexibility in complying with other requirements in the rules that does not otherwise exist. As a result, we believe that it is appropriate to stay the subparts in their entirety while we address the tier 4 SEM issues and the other issues for which the Administrator has granted reconsideration. Therefore, pursuant to section 307(d)(7)(B) of the CAA, the EPA is staying 40 CFR part 60, subpart XXX, and 40 CFR part 60, subpart Cf, for 90 days.

This stay will remain in place until August 29, 2017.

### List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements.

Dated: May 22, 2017.

### E. Scott Pruitt,

Administrator.

40 CFR part 60 is amended as follows:

### PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

### Subpart Cf—[Stayed]

■ 2. Subpart Cf is stayed from May 31, 2017 until August 29, 2017.

### Subpart XXX—[Stayed]

2. Subpart XXX is stayed from May 31, 2017 until August 29, 2017.
[FR Doc. 2017–10752 Filed 5–30–17; 8:45 am]
BILLING CODE 6560–50–P

### DEPARTMENT OF COMMERCE

## National Oceanic and Atmospheric Administration

### 50 CFR Part 648

[Docket No. 161118999-7280-02]

RIN 0648-XF410

### Fisheries of the Northeastern United States; Atlantic Sea Scallop Fishery; Closure of the Nantucket Lightship Access Area to General Category Individual Fishing Quota Scallop Vessels

**AGENCY:** National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Commerce.

**ACTION:** Temporary rule; closure.

SUMMARY: NMFS announces that the Nantucket Lightship Scallop Access Area will close to Limited Access General Category Individual Fishing Quota scallop vessels for the remainder of the 2017 fishing year as of the effective date below. No vessel issued a Limited Access General Category Individual Fishing Quota permit may fish for, possess, or land scallops from the Nantucket Lightship Scallop Access Area. Regulations require this action once it is projected that 100 percent of trips allocated to the Limited Access General Category Individual Fishing Quota scallop vessels for the Nantucket Lightship Scallop Access Area will be taken.

**DATES:** Effective 0001 hr local time, May 30, 2017, through March 31, 2018.

### FOR FURTHER INFORMATION CONTACT:

Shannah Jaburek, Fishery Management Specialist, (978) 282–8456.

SUPPLEMENTARY INFORMATION:

Regulations governing fishing activity in the Sea Scallop Access Areas can be found in 50 CFR 648.59 and 648.60. These regulations authorize vessels issued a valid Limited Access General Category (LAGC) Individual Fishing Quota (IFQ) scallop permit to fish in the Nantucket Lightship Scallop Access Area under specific conditions, including a total of 837 trips that may be taken during the 2017 fishing year. Section 648.59(g)(3)(iii) requires the Nantucket Lightship Scallop Access

## Attachment B

U.S. EPA, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Final Rule, 81 Fed. Reg. 59,276 (Aug. 29, 2016) (excerpts)

### **ENVIRONMENTAL PROTECTION** AGENCY

### 40 CFR Part 60

[EPA-HQ-OAR-2014-0451; FRL-9949-55-OAR]

### **RIN 2060-AS23**

### **Emission Guidelines and Compliance Times for Municipal Solid Waste** Landfills

**AGENCY:** Environmental Protection Agency (EPA). ACTION: Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is finalizing a new subpart that updates the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (Emission Guidelines). The EPA reviewed the landfills Emission Guidelines based on changes in the landfills industry since the Emission Guidelines were promulgated in 1996. The EPA's review of the Emission Guidelines for municipal solid waste (MSW) landfills considered landfills that accepted waste after November 8, 1987, and commenced construction, reconstruction, or modification on or before July 17, 2014. Based on this review, the EPA has determined that it is appropriate to revise the Emission Guidelines to reflect changes to the population of landfills and the results of an analysis of the timing and methods for reducing emissions. This action will achieve additional reductions in emissions of landfill gas and its components, including methane, by lowering the emissions threshold at which a landfill must install controls. This action also incorporates new data and information received in response to an advanced notice of proposed rulemaking and a proposed rulemaking and addresses other regulatory issues including surface emissions monitoring, wellhead monitoring, and the definition of landfill gas treatment system.

The revised Emission Guidelines, once implemented through revised state plans or a revised federal plan, will reduce emissions of landfill gas, which contains both nonmethane organic compounds and methane. Landfills are a significant source of methane, which is a potent greenhouse gas pollutant. These avoided emissions will improve air quality and reduce the potential for public health and welfare effects associated with exposure to landfill gas emissions.

DATES: This final rule is effective on October 28, 2016.

The incorporation by reference of certain publications listed in the

(Page 39 of Total)

regulations is approved by the Director of the Federal Register as of October 28, 2016.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2014-0451. All documents in the docket are listed in the http://www.regulations.gov index. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through http:// www.regulations.gov.

FOR FURTHER INFORMATION CONTACT: For information concerning this final rule, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143–05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-3154; fax number: (919) 541-0246; email address: ward.hillary@epa.gov.

#### SUPPLEMENTARY INFORMATION:

Acronyms and Abbreviations. The following acronyms and abbreviations are used in this document.

- ANPRM Advance notice of proposed rulemaking
- ANSI American National Standards Institute
- BMP Best management practice
- Btu British thermal unit
- CAA Clean Air Act
- CBI Confidential business information
- CDX Central Data Exchange
- CEDRI Compliance and Emissions Data Reporting Interface
- CFR<sup><sup>1</sup></sup> Code of Federal Regulations
- CO<sub>2</sub> Carbon dioxide
- $CO_2e$ Carbon dioxide equivalent
- EPA Environmental Protection Agency
- ERT Electronic Reporting Tool
- FID Flame ionization detector
- GCCS Gas collection and control system
- GHG Greenhouse gas
- GHGRP Greenhouse Gas Reporting Program
- GWP Global warming potential
- Hazardous air pollutant HAP
- HOV Higher operating value
- IAMS Integrated assessment models
- ICR Information collection request IPCC Intergovernmental Panel on Climate Change
- IWG Interagency working group
- LFG Landfill gas
- LFGCost Landfill Gas Energy Cost Model
- Cubic meters  $m^3$
- Mg Megagram
- Mg/yr Megagram per year
- mph Miles per hour
- MSW Municipal solid waste
- mtCO<sub>2</sub>e Metric tons of carbon dioxide equivalent

MW Megawatt

- MWh Megawatt hour NAICS North American Industry
- **Classification System**
- NESHAP National Emission Standards for Hazardous Air Pollutants
- NMOC Nonmethane organic compound
- NRC National Research Council
- NSPS New source performance standards
- NTTAA National Technology Transfer and Advancement Act
- OAQPS Office of Air Quality Planning and Standards
- OMB Office of Management and Budget
- PM Particulate matter
- PM<sub>2.5</sub> Fine particulate matter
- ppm Parts per million
- ppmvd Parts per million by dry volume
- RCRA Resource Conservation and Recovery Act
- RD&D Research, development, and demonstration
- RFA Regulatory Flexibility Act
- SBAR Small Business Advocacy Review
- SC–CH<sub>4</sub> Social cost of methane
- SC-CO<sub>2</sub> Social cost of carbon dioxide
- SEM Surface emissions monitoring
- SO<sub>2</sub> Sulfur dioxide
- SSM Startup, shutdown, and malfunction
- Tg Teragram
- TIP Tribal implementation plan TTN Technology Transfer Network
- U.S. United States
- USGCRP U.S. Global Change Research Program
- VCS Voluntary consensus standard VOC Volatile organic compound

Organization of This Document. The following outline is provided to aid in locating information in this preamble.

- I. Executive Summary
  - A. Purpose of Regulatory Action
  - B. Summary of Major Provisions
- C. Costs and Benefits
- II. General Information
- A. Does this action apply to me?
- B. Where can I get a copy of this document and other related information?
- III. Background
  - A. Landfill Gas Emissions and Climate Change
  - B. What are the public health and welfare effects of landfill gas emissions?
  - C. What is the EPA's authority for
  - reviewing the Emission Guidelines? D. What is the purpose and scope of this
  - action? E. How would the changes in applicability affect sources currently subject to
  - subparts Cc and WWW?
- IV. Summary of the Final Emission Guidelines
  - A. What are the control requirements?
  - B. What are the monitoring, recordkeeping, and reporting requirements?
  - C. Startup, Shutdown, and Malfunction Provisions
- V. Summary of Significant Changes Since Proposal
  - A. Changes to Monitoring, Recordkeeping, and Reporting
  - B. Tier 4
  - C. Changes to Address Closed or Non-**Productive Areas**
  - D. Startup, Shutdown, and Malfunction Provisions

Attachments 5

- E. Other Corrections and Clarifications VI. Rationale for Significant Changes Since Proposal
  - A. Changes to Monitoring, Recordkeeping, and Reporting

B. Tier 4

- C. Changes to Address Closed or Non-Productive Areas
- D. Startup, Shutdown, and Malfunction Provisions
- E. Other Corrections and Clarifications
- VII. Impacts of This Final Rule A. What are the air quality impacts?
  - B. What are the water quality impacts?B. What are the water quality and solid waste impacts?
  - C. What are the secondary air impacts?
  - D. What are the energy impacts?
  - E. What are the cost impacts?
  - F. What are the economic impacts?
- G. What are the benefits?
- VIII. Statutory and Executive Order Reviews
  - A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
  - B. Paperwork Reduction Act (PRA)
  - C. Regulatory Flexibility Act (RFA)
  - D. Unfunded Mandates Reform Act (UMRA)
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
  - G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
  - H. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use
  - I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR part 51
  - J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
  - K. Congressional Review Act (CRA)

### I. Executive Summary

### A. Purpose of Regulatory Action

This action finalizes changes to the MSW landfills Emission Guidelines resulting from the EPA's review of the Emission Guidelines under Clean Air Act (CAA) section 111. The EPA's review identified a number of advances in technology and operating practices for reducing emissions of landfill gas (LFG) and the final changes are based on our evaluation of those advances and our understanding of LFG emissions. The resulting changes to the Emission Guidelines will achieve additional reductions in emissions of LFG and its components, including methane. This final rule is consistent with the President's 2013 Climate Action Plan,<sup>1</sup> which directs federal agencies to focus on "assessing current emissions data,

addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions." The final rule is also consistent with the President's Methane Strategy,<sup>2</sup> which directs the EPA's regulatory and voluntary programs to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs. These directives are discussed in detail in section III.A of this preamble. This regulatory action also resolves or clarifies several implementation issues that were previously addressed in amendments proposed on May 23, 2002 (67 FR 36475) and September 8, 2006 (71 FR 53271).

1. Need for Regulatory Action

The EPA reviewed the Emission Guidelines to determine the potential for achieving additional reductions in emissions of LFG. Significant changes have occurred in the landfill industry over time, including changes to the size and number of existing landfills, industry practices, and gas control methods and technologies. Based on the EPA's review, we are finalizing changes to the Emission Guidelines. The changes will achieve additional emission reductions of LFG and its components (including methane), which will reduce air pollution and the resulting harm to public health and welfare. Landfills are a significant source of methane, a potent greenhouse gas, for which there are costeffective means of reduction, so this rule is an important element of the United States' work to reduce emissions that are contributing to climate change. In addition, the changes provide more effective options for demonstrating compliance, and provide clarification of several implementation issues raised during the amendments proposed in 2002 and 2006. Additional information supporting the EPA's decision to review the Emission Guidelines can be found in Section I.A. of the Emission Guidelines proposal (80 FR 52100, August 27, 2015).

### 2. Legal Authority

The EPA is not statutorily obligated to conduct a review of the Emission Guidelines, but has the discretion to do so when circumstances indicate that it is appropriate. The EPA determined that it was appropriate to review the

Emission Guidelines based on changes in the landfill industry and changes in operation of landfills, including the size, trends in gas collection and control system installations, and age of landfills since the Emission Guidelines were promulgated in 1996. The EPA compiled new information on landfills through data collection efforts for a statutorily mandated review of the existing new source performance standards (NSPS) (40 CFR part 60, subpart WWW), public comments received on the NSPS proposal (79 FR 41796, July 17, 2014), public comments received on the Advance Notice of Proposed Rulemaking (ANPRM) (79 FR 41772, July 17, 2014), and public comments received on the Emission Guidelines proposal (80 FR 52100, August 27, 2015) for use in reviewing the Emission Guidelines. This information allowed the EPA to assess current practices, emissions, and the potential for additional emission reductions.

The EPA interprets CAA section 111(d) as providing discretionary authority to update emission guidelines, and by extension to require states to update standards of performance, in appropriate circumstances. The EPA believes this is the best, and perhaps only, permissible interpretation of the CAA. It is consistent with the gap filling nature of section 111(d), the general purposes of the CAA to protect and enhance air quality. Moreover, this is supported because Congress's grant of authority to issue regulations carries with it the authority to amend or update regulations <sup>3</sup> that they have issued.<sup>4</sup> "Regulatory agencies do not establish rules of conduct to last forever; they are supposed, within the limits of the law and of fair and prudent administration, to adapt their rules and practices to the Nation's needs in a volatile, changing economy. They are neither required nor supposed to regulate the present and the future within the inflexible limits of yesterday." 5

To interpret the CAA otherwise would mean that Congress intended to

<sup>&</sup>lt;sup>1</sup>Executive Office of the President, "The President's Climate Action Plan" June 2013. https:// www.whitehouse.gov/sites/default/files/image/ president27sclimateactionplan.pdf.

<sup>&</sup>lt;sup>2</sup> Executive Office of the President, "Climate Action Plan Strategy to Reduce Methane, March 2014. https://www.whitehouse.gov/sites/default/ files/strategy\_to\_reduce\_methane\_emissions\_2014-03-28\_final.pdf.

<sup>&</sup>lt;sup>3</sup>Congress has provided the Agency with broad authority to issue regulations "as necessary to carry out [her] functions under" the Act. This broad grant of authority further supports the reasonableness of EPA's interpretation.

<sup>&</sup>lt;sup>4</sup> See Trujillo v. General Electric Co., 621 F.2d 1084, 1086 (10th Cir. 1980) ("Administrative agencies have an inherent authority to reconsider their own decisions, since the power to decide in the first instance carries with it the power to reconsider.") (citing Albertson v. FCC, 182 F.2d 397, 399 (D.C. Cir. 1950)). See 621 F.2d at 1088 ("The authority to reconsider may result in some instances, as it did here, in a totally new and different determination.").

<sup>&</sup>lt;sup>5</sup> American Trucking Ass'n v. Atchison, Topeka & Santa Fe Ry., 387 U.S. 397, 416 (1967).

allow existing sources to operate forever without any consideration of the need for updated controls simply because, at some point in the distant past, the EPA had previously required these sources to be regulated. The EPA's interpretation is consistent with the gap filling nature of section 111(d), whereas the opposite interpretation would undermine it. By its terms, section 111(d) was designed to address emissions from existing sources of non-national ambient air quality standards (NAAQS), non-CAA section 112 hazardous air pollutants.6 A one-off approach would mean that the EPA would be unable to address the threats from these sources even as we improve our understanding of the danger presented by the pollutant at issue or new or improved control options become available. Indeed, this lack of authority would exist even in cases such as the instant one where some affected sources had not yet been required to invest in emission controls.

The overall structure of the CAA also supports EPA's interpretation. The primary goal of the CAA is: "[T]o protect and enhance the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." CAA section 101(b)(1), 42 U.S.C. 7401(b)(1). The CAA goes about this in a number of ways. Under section 111 the chosen approach is through the identification of the best system of emission reduction available to reduce emissions to the atmosphere which takes into account the cost of achieving such reductions and any nonair quality health and environmental impact and energy

requirements. These systems change over time. Where such changes have the effect of substantially reducing harmful air emissions, it would be illogical that the EPA would be precluded from requiring existing sources to update their controls in recognition of those changes, particularly when those sources may continue to operate for decades. Similarly, if, after a rule was finalized, factual information were to arise revealing that the initial standards were too stringent to be met, it would be illogical that EPA would be precluded from revising the standards accordingly. Had Congress intended to preclude the EPA from updating the emission guidelines to reflect changes, it would surely have specifically said so, something it did not do.

The fact that the EPA has the authority to update the emission guidelines does not, however, mean that it is unconstrained in exercising that authority. Rather, the decision whether to update a particular set of emission guidelines must be made on a rulespecific basis after considering the same factors the EPA considered in establishing those guidelines, including the level of reductions achievable and the cost of achieving those reductions, and, as appropriate, taking into account controls sources installed to comply with the initial emission guidelines. The EPA has determined that it is appropriate to update the emission guidelines for municipal solid waste (MSW) landfills. The EPA's final rule is not a requirement to install new and different control equipment (compared to the existing rule), but rather to install the same basic controls, *i.e.*, a welldesigned and well-operated landfill gas collection and control system, on an accelerated basis. While this will result in some additional cost, the EPA believes that cost is fully justified given the substantial reduction in emissions of landfill gas and its constituent components, including methane, that will result. As indicated in the final rule, lowering the threshold above which landfill owners/operators must install a gas collection and control system from 50 Mg of non-methane organic compounds (NMOC) per year to 34 Mg/year will result in an additional reduction in NMOC emissions of 1,810 Mg/yr and a concomitant reduction in methane emissions of 0.285 million Mg/ vr. In these circumstances, the EPA believes that it not only has the legal authority to update the emission guidelines, but that doing so imminently reasonable.

### B. Summary of Major Provisions

The final Emission Guidelines apply to landfills that accepted waste after November 8, 1987,<sup>7</sup> and that commenced construction, reconstruction, or modification on or before July 17, 2014 (the date of publication of proposed revisions to the landfills NSPS, 40 CFR part 60, subpart XXX). The final rule provisions are described below.

Thresholds for Installing Controls. The final Emission Guidelines retain the current design capacity thresholds of 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>), but reduce the nonmethane organic compounds (NMOC) emission threshold for the installation and removal of a gas collection and control system (GCCS) from 50 Mg/yr to 34 Mg/yr for landfills that are not closed as of September 27, 2017. (A megagram is also known as a metric ton, which is equal to 1.1 U.S. short tons or about 2,205 pounds.) An MSW landfill that exceeds the design capacity thresholds must install and start up a GCCS within 30 months after LFG emissions reach or exceed an NMOC level of 34 Mg/yr. Consistent with the existing Emission Guidelines, the owner or operator of a landfill may control the gas by routing it to a nonenclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

Emission Threshold Determination. The EPA is finalizing an alternative sitespecific emission threshold determination methodology for when a landfill must install and operate a GCCS. This alternative methodology, referred to as "Tier 4," is based on surface emissions monitoring (SEM) and demonstrates whether or not surface emissions are below a specific threshold. The Tier 4 SEM demonstration allows landfills that exceed the threshold using modeled NMOC emission rates using Tier 1 or 2 to demonstrate that actual site-specific surface methane emissions are below a specific threshold. A landfill that can demonstrate that surface emissions are below 500 parts per million (ppm) for four consecutive quarters does not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations

 $<sup>^6\,\</sup>mathrm{CAA}$  subsection 111(d)(1)(A)(i), provides that regulation under CAA section 111(d) is intended to cover pollutants that are not regulated under either the criteria pollutant/NAAQS provisions or section 112 of the CAA. Thus, section 111(d) is designed to regulate pollutants from existing sources that fall in the gap not covered by the criteria pollutant provisions or the hazardous air pollutant provisions. This gap-filling purpose can be seen in the early legislative history of the CAA. As originally enacted in the 1970 CAA, the precursor to CAA section 111 (which was originally section 114) was described as covering pollutants that would not be controlled by the criteria pollutant provisions or the hazardous air pollutant provisions. See S. Committee Rep. to accompany S. 4358 (Sept. 17, 1970), 1970 CAA Legis. Hist. at 420 ("It should be noted that the emission standards for pollutants which cannot be considered hazardous (as defined in section 115 [which later became section 112]) could be established under section 114 [later, section 111]. Thus, there should be no gaps in control activities pertaining to stationary source emissions that pose any significant danger to public health or welfare."); Statement by S Muskie, S. Debate on S. 4358 (Sept. 21, 1970), 1970 CAA Legis. Hist. at 227 ("[T]he bill [in section 114] provides the Secretary with the authority to set emission standards for selected pollutants which cannot be controlled through the ambient air quality standards and which are not hazardous substances.").

<sup>&</sup>lt;sup>7</sup> This date in 1987 is the date on which permit programs were established under the Hazardous and Solid Waste Amendments of the Resource, Conservation and Recovery Act (RCRA) which amended the Solid Waste Disposal Act (SWDA), 42 U.S.C. 6901–6992k. This date was also selected as the regulatory cutoff in the Emission Guidelines for landfills no longer receiving wastes because the EPA judged states would be able to identify active facilities as of this date.

indicate that the 34 Mg/yr threshold has been exceeded. Landfills that have calculated NMOC emissions of 50 Mg/ yr or greater are not eligible for the Tier 4 emission threshold determination in order to prevent conflicting requirements between subpart Cf and the landfills NESHAP (40 CFR part 63, subpart AAAA). Many landfills that are subject to subpart Cf will also be subject to the landfills NESHAP. The landfills NESHAP requires landfills that exceed the size threshold (2.5 million Mg and 2.5 million m<sup>3</sup>) and exceed the NMOC emissions threshold (50 Mg/yr) to install and operate a GCCS.

*Closed Landfill Subcategory.* Because closed landfills do not produce as much LFG as an active landfill, the EPA is finalizing a separate subcategory for landfills that close on or before September 27, 2017. Landfills in this subcategory will continue to be subject to an NMOC emission threshold of 50 Mg/yr for determining when controls must be installed or can be removed.

Low LFG Producing Areas. The EPA is also finalizing criteria for determining when it is appropriate to cap or remove all or a portion of the GCCS. The final criteria for capping or removing all or a portion of the GCCS are: (1) The landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the calculated NMOC emission rate at the landfill is less than 34 Mg/yr on three successive test dates. The final rule does not contain a GCCS removal criterion based on surface emissions monitoring.

Landfill Gas Treatment. In the final Emission Guidelines, the EPA has addressed two issues related to LFG treatment. First, the EPA is clarifying that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but may be used for other beneficial uses such as vehicle fuel, production of high-British thermal unit (Btu) gas for pipeline injection, or use as a raw material in a chemical manufacturing process. Second, the EPA is finalizing a definition of *treated landfill gas* that applies to LFG processed in a treatment system meeting the requirements in 40 CFR part 60, subpart Cf, and defining treatment system as a system that filters, dewaters, and compresses LFG for sale or beneficial use. The definition of treatment system allows the level of treatment to be tailored to the type and design of the specific combustion equipment or the other beneficial use such as vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical

manufacturing process in which the LFG is used. Owners or operators must develop a site-specific treatment system monitoring plan that includes monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated LFG. They also must keep records that demonstrate that such parameters effectively monitor filtration, de-watering, and compression system performance necessary for the end use of the treated LFG.

Wellhead Operational Standards. The EPA is finalizing changes to certain operational standards (*i.e.*, the requirement to meet specific operating limits) for nitrogen/oxygen level at the wellheads. Landfill owners or operators are not required to take corrective action based on exceedances of specified operational standards for nitrogen/ oxygen levels at wellheads, but they must continue to monitor and maintain records of nitrogen/oxygen levels on a monthly basis in order to inform any necessary adjustments to the GCCS and must maintain records of monthly readings. The operational standard, corrective action, and corresponding recordkeeping and reporting remain for temperature and maintaining negative pressure at the wellhead.

*Surface Monitoring.* The EPA is finalizing a requirement to monitor all surface penetrations at existing landfills. In final 40 CFR part 60, subpart Cf, landfills must conduct SEM at all cover penetrations and openings within the area of the landfill where waste has been placed and a gas collection system is required to be in place and operating according to the operational standards in final 40 CFR part 60, subpart Cf. Specifically, landfill owners or operators must conduct surface monitoring on a quarterly basis at the specified intervals and where visual observations indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations.

Startup, Shutdown, and Malfunction. The EPA is finalizing a requirement that standards of performance in the Emission Guidelines apply at all times, including periods of startup, shutdown, and malfunction (SSM). The EPA is also finalizing an alternative standard during SSM events: In the event the collection or control system is not operating, the gas mover system must be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere must be closed within 1 hour of the collection or control system not operating.

Other Clarifications. The EPA is finalizing a number of clarifications to address several issues that have been raised by landfill owners or operators during implementation of the current NSPS and Emission Guidelines. These clarifications include adding criteria for when an affected source must update its design plan and clarifying when landfill owners or operators must submit requests to extend the timeline for taking corrective action. The EPA is also updating several definitions in the Emission Guidelines. In addition, while the EPA is not mandating organics diversion, we are finalizing two specific compliance flexibilities in the Emission Guidelines to encourage wider adoption of organics diversion and GCCS best management practices (BMPs) for emission reductions at landfills. These compliance flexibilities are discussed in section V.A.1 and VI.A.1 (wellhead monitoring) and section V.B and section VI.B (Tier 4 emission threshold determination) of this preamble.

### C. Costs and Benefits

The final Emission Guidelines are expected to significantly reduce emissions of LFG and its components, which include methane, volatile organic compounds (VOC), and hazardous air pollutants (HAP). Landfills are a significant source of methane emissions, and in 2014, landfills represented the third largest source of human-related methane emissions in the U.S. This rulemaking applies to existing landfills that commenced construction, modification, or reconstruction on or before July 17, 2014 and accepted waste after 1987. The EPA estimates 1,851 existing landfills that accepted waste after 1987 and opened prior to 2014.

To comply with the emission limits in the final rule, MSW landfill owners or operators are expected to install the least-cost control for collecting, and treating or combusting LFG. The annualized net cost for the final Emission Guidelines is estimated to be \$54.1 million (2012\$) in 2025, when using a 7 percent discount rate. The annualized costs represent the costs compared to no changes to the current Emission Guidelines (*i.e.*, baseline) and include \$92.6 million to install and operate a GCCS, as well as \$0.76 million to complete the corresponding testing and monitoring. These control costs are offset by \$39.3 million in revenue from electricity sales, which is incorporated into the net control costs for certain landfills that are expected to generate revenue by using the LFG to produce electricity.

Installation of a GCCS to comply with the 34 Mg/yr NMOC emissions threshold at open landfills would achieve reductions of 1,810 Mg/yr NMOC and 285,000 metric tons methane (about 7.1 million metric tons of carbon dioxide equivalent (mtCO<sub>2</sub>e)) beyond the baseline in year 2025. In addition, the final rule is expected to result in the net reduction of an additional 277,000 Mg CO<sub>2</sub>, due to reduced demand for electricity from the grid as landfills generate electricity from LFG. The NMOC portion of LFG can contain a variety of air pollutants, including VOC and various organic HAP. VOC emissions are precursors to both fine particulate matter (PM<sub>2.5</sub>) and ozone formation. These pollutants, along with methane, are associated with substantial health effects, welfare effects, and climate effects. The EPA expects that the reduced emissions will result in improvements in air quality and lessen the potential for health effects associated with exposure to air pollution related emissions, and result

in climate benefits due to reductions of the methane component of LFG.

The EPA estimates that the final rule's estimated methane emission reductions and secondary  $CO_2$  emission reductions in the year 2025 would yield global monetized climate benefits of \$200 million to approximately \$1.2 billion, depending on the discount rate. Using the average social cost of methane (SC-CH<sub>4</sub>) and the average social cost of CO<sub>2</sub> (SC-CO<sub>2</sub>), each at a 3-percent discount rate, results in an estimate of about \$440 million in 2025 (2012\$).

The SC–CH<sub>4</sub> and SC–CO<sub>2</sub> are the monetary values of impacts associated with marginal changes in methane and  $CO_2$  emissions, respectively, in a given year. It includes a wide range of anticipated climate impacts, such as net changes in agricultural productivity, property damage from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning.

With the data available, we are not able to provide health benefit estimates

### TABLE 1—REGULATED ENTITIES

for the reduction in exposure to HAP, ozone, and  $PM_{2.5}$  for this rule. This is not to imply that there are no such benefits of the rule; rather, it is a reflection of the difficulties in modeling the direct and indirect impacts of the reductions in emissions for this sector with the data currently available.

Based on the monetized benefits and costs, the annual net benefits of the final guidelines are estimated to be \$390 million (\$2012) in 2025, based on the average SC-CH<sub>4</sub> at a 3 percent discount rate, average SC-CO<sub>2</sub> at a 3 percent discount rate, and costs at a 7 percent discount rate.

### **II. General Information**

### A. Does this action apply to me?

This final rule addresses existing MSW landfills, *i.e.*, landfills accepting waste after 1987 and on which construction was commenced on or before July 17, 2014, and associated solid waste management programs. Potentially affected categories include those listed in Table 1 of this preamble.

Category	NAICS <sup>a</sup>	Examples of affected facilities
Industry: Air and water resource and solid waste management Industry: Refuse systems—solid waste landfills State, local, and tribal government agencies	924110 562212 924110	Solid waste landfills. Solid waste landfills. Administration of air and water resource and solid waste man- agement programs.

<sup>a</sup>North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by the new subpart. To determine whether your facility would be regulated by this action, you should carefully examine the applicability criteria in final 40 CFR 60.32f of subpart Cf. If you have any questions regarding the applicability of the final subpart to a particular entity, contact the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

# B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available through EPA's Technology Transfer Network (TTN) Web site, a forum for information and technology exchange in various areas of air pollution control. Following signature by the EPA Administrator, the EPA will post a copy of this action at *http:// www.epa.gov/ttnatw01/landfill/ landflpg.html.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of this final rule and technical documents at this same Web site.

### **III. Background**

The Emission Guidelines for MSW landfills were promulgated on March 12, 1996, and subsequently amended on June 16, 1998, February 24, 1999, and April 10, 2000, to make technical corrections and clarifications. Amendments were proposed on May 23, 2002, and September 8, 2006, to address implementation issues, but those amendments were never finalized. On July 17, 2014, the EPA issued an ANPRM for the MSW landfills Emission Guidelines (79 FR 41772). The purpose of that action was to request public input on controls and practices that could further reduce emissions from existing MSW landfills and to evaluate that input to determine if changes to the Emission Guidelines were appropriate. On July 17, 2014, the EPA issued a concurrent proposal for revised NSPS for new MSW landfills (79 FR 41796). On August 27, 2015 (80 FR 52100), the EPA proposed a review of the Emission

Guidelines to build on progress to date to (1) Achieve additional reductions in emissions of LFG and its components, (2) account for changes in the landfill industry and changes in operation of the landfills, including the size, trends in GCCS installations, and age of landfills, as reflected in new data, (3) provide new options for demonstrating compliance, and (4) to complete efforts regarding unresolved implementation issues. The EPA considered information it received in response to the ANPRM (79 FR 41772) and Notice of Proposed Rulemaking (80 FR 52100) for existing landfills in evaluating these final Emission Guidelines. We are also finalizing some of the amendments proposed on May 23, 2002, and September 8, 2006 to improve implementation of the Emission Guidelines. The respective frameworks of NSPS and Emission Guidelines have been similar since they were first promulgated in 1996 (e.g., size threshold, emission threshold, monitoring requirements, etc). In response to public comments, which include implementation concerns

associated with the potential for different approaches and requirements between revised final rules, the EPA is finalizing similar requirements for the NSPS and Emission Guidelines.

## A. Landfill Gas Emissions and Climate Change

In June 2013, President Obama issued a Climate Action Plan that directed federal agencies to focus on "assessing current emissions data, addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions." <sup>8</sup> Methane is a potent greenhouse gas (GHG) that is 28– 36 times greater than carbon dioxide (CO<sub>2</sub>) and has an atmospheric life of about 12 years.9 Because of methane's potency as a GHG and its atmospheric life, reducing methane emissions is one of the best ways to achieve near-term beneficial impact in mitigating global climate change.

The "Climate Action Plan: Strategy to Reduce Methane Emissions"<sup>10</sup> (the Methane Strategy) was released in March 2014. The strategy recognized the methane reductions achieved through the EPA's regulatory and voluntary programs to date. It also directed the EPA to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs.

The EPA recognized the climate benefits associated with reducing methane emissions from landfills nearly 25 years ago. The 1991 NSPS Background Information Document <sup>11</sup> asserted that the reduction of methane emissions from MSW landfills was one of many options available to reduce global warming. The NSPS for MSW landfills, promulgated in 1996, also recognized the climate co-benefits of

<sup>10</sup> Executive Office of the President, "Climate Action Plan Strategy to Reduce Methane, March 2014. https://www.whitehouse.gov/sites/default/ files/strategy\_to\_reduce\_methane\_emissions\_2014-03-28\_final.pdf.

<sup>11</sup> Air Emissions from Municipal Solid Waste Landfills-Background Information for Proposed Standards and Guidelines, U.S. EPA (EPA–450/3– 90–011a) (NTIS PB 91–197061) page 2–15. controlling methane (61 FR 9917, March 12, 1996).

A recent study assessed EPA regulations and voluntary programs over the period 1993–2013 and found that they were responsible for the reduction of about 130 million metric tons of methane emissions (equal to about 18 percent of the total U.S. methane emissions over that time period), leading to a reduction in atmospheric concentrations of methane of about 28 parts per billion in 2013<sup>12</sup> (compared to an observed increase in methane concentrations of about 80 ppb over those 20 years).

The review and final revision of the MSW landfills Emission Guidelines capitalizes on additional opportunities to achieve methane reductions while acknowledging historical agency perspectives and research on climate, a charge from the President's Climate Action Plan, the Methane Strategy, and improvements in the science surrounding GHG emissions.

LFG is a collection of air pollutants, including methane and NMOC. LFG is typically composed of 50-percent methane, 50-percent CO<sub>2</sub>, and less than 1-percent NMOC by volume. The NMOC portion of LFG can contain various organic HAP and VOC. When the Emission Guidelines and NSPS were promulgated in 1996, NMOC was selected as a surrogate for MSW LFG emissions because NMOC contains the air pollutants that at that time were of most concern due to their adverse effects on public health and welfare. Today, methane's effects on climate change are also considered important. In 2014, methane emissions from MSW landfills represented 18.2 percent of total U.S. methane emissions and 1.9 percent of total U.S. GHG emissions (in carbon dioxide equivalent (CO<sub>2</sub>e)).<sup>13</sup> In 2014, MSW landfills continued to be the third largest source of human-related methane emissions in the U.S., releasing an estimated 133.1 million metric tons of CO<sub>2</sub>e. For these reasons and because additional emissions reductions can be achieved at a reasonable cost, the EPA is finalizing changes to the Emission

Guidelines that are based on reducing the NMOC and methane components of LFG.

## *B.* What are the public health and welfare effects of landfill gas emissions?

## 1. Public Health Effects of VOC and Various Organic HAP

VOC emissions are precursors to both PM<sub>2.5</sub> and ozone formation. As documented in previous analyses (U.S. EPA, 2006<sup>14</sup>, 2010<sup>15</sup>, and 2014<sup>16</sup>), exposure to PM<sub>2.5</sub> and ozone is associated with significant public health effects. PM<sub>2.5</sub> is associated with health effects, including premature mortality for adults and infants, cardiovascular morbidity such as heart attacks, and respiratory morbidity such as asthma attacks, acute bronchitis, hospital admissions and emergency room visits, work loss days, restricted activity days and respiratory symptoms, as well as welfare impacts such as visibility impairment.<sup>17</sup> Ozone is associated with public health effects, including hospital and emergency department visits, school loss days and premature mortality, as well as ecological effects (e.g., injury to vegetation and climate change).<sup>18</sup> Nearly 30 organic HAP have been identified in uncontrolled LFG, including benzene, toluene, ethyl benzene, and vinyl chloride.<sup>19</sup> Benzene is a known human carcinogen.

<sup>15</sup> U.S. EPA. *RIA. National Ambient Air Quality* Standards for Ozone. Office of Air Quality Planning and Standards, Research Triangle Park, NC. January 2010. Available on the Internet at http:// www.epa.gov/ttn/ecas/regdata/RIAs/s1supplemental\_analysis\_full.pdf.

<sup>16</sup>U.S. EPA. *RIA*. National Ambient Air Quality Standards for Ozone. Office of Air Quality Planning and Standards, Research Triangle Park, NC. December 2014. Available on the Internet at http:// www.epa.gov/thecas1/regdata/RIAs/ 20141125ria.pdf.

<sup>17</sup> U.S. EPA. Integrated Science Assessment for Particulate Matter (Final Report). EPA-600-R-08-139F. National Center for Environmental Assessment—RTP Division. December 2009. Available at http://cfpub.epa.gov/ncea/cfm/ recordisplay.cfm?deid=216546.

<sup>18</sup> U.S. EPA. Air Quality Criteria for Ozone and Related Photochemical Oxidants (Final). EPA/600/ R-05/004aF-cF. Washington, DC: U.S. EPA. February 2006. Available on the Internet at http:// cfpub.epa.gov/ncea/CFM/ recordisplay.cfm?deid=149923.

<sup>&</sup>lt;sup>8</sup> Executive Office of the President, "The President's Climate Action Plan" June 2013. https:// www.whitehouse.gov/sites/default/files/image/ president27sclimateactionplan.pdf.

<sup>&</sup>lt;sup>9</sup> The IPCC updates GWP estimates with each new assessment report, and in the latest assessment report, AR5, the latest estimate of the methane GWP ranged from 28–36, compared to a GWP of 25 in AR4. The impacts analysis in this final rule is based on the 100-year GWP from AR4 (25) instead of AR5 to be consistent with and comparable to key Agency emission quantification programs such as the Inventory of Greenhouse Gas Emissions and Sinks (GHG Inventory), and the GHGRP.

<sup>&</sup>lt;sup>12</sup> Melvin, A.M.; Sarofim, M.C.; Crimmins, A.R., "Climate benefits of U.S. EPA programs and policies that reduced methane emissions 1993– 2013", Environmental Science & Technology, 2016, in press. http://pubs.acs.org/doi/pdf/10.1021/ acs.est.6b00367. DOI 10.1021/acs.est.6b00367.

<sup>&</sup>lt;sup>13</sup> Total U.S. methane emissions were 731 teragrams (Tg) CO<sub>2</sub>e and total U.S. GHG emissions were 6,870.5 Tg in 2014. A teragram is equal to 1 million Mg. (A megagram is also known as a metric ton, which is equal to 1.1 U.S. short tons or about 2,205 pounds.) U.S. EPA "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014." Table ES–2. Available at http://www.epa.gov/ climatechange/ghgemissions/ usinventoryreport.html.

<sup>&</sup>lt;sup>14</sup>U.S. EPA. *RIA. National Ambient Air Quality Standards for Particulate Matter*, Chapter 5. Office of Air Quality Planning and Standards, Research Triangle Park, NC. October 2006. Available on the Internet at *http://www.epa.gov/ttn/ecas/regdata/ RIAs/Chapter%205-Benefits.pdf.* 

 <sup>&</sup>lt;sup>19</sup>U.S. EPA. 1998. Office of Air and Radiation, Office of Air Quality Planning and Standards.
"Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources, Chapter 2: Solid Waste Disposal, Section 2.4: Municipal Solid Waste Landfills". Available at: http://www.epa.gov/ttn/chief/ap42/ch02/final/ c02s04.pdf.

according to the schedule in 40 CFR part 60, subpart B. The EPA will publish notice of state plan approvals or disapprovals in the Federal Register and will include an explanation of its decision. The EPA also intends to revise the existing federal plan (40 CFR part 62, subpart GGG) to incorporate the changes and other requirements adopted in this final action revising the Emission Guidelines. The revised federal plan will apply in states that have either never submitted a state plan or not received approval of any necessary revised state plan until such time as an initial state plan or revised state plan is approved. Fifteen states and territories implement the original Emission Guidelines promulgated at subpart Cc under the Federal Plan (40 CFR part 62, subpart GGG) The revised federal plan would also apply in Indian country unless and until replaced by a tribal implementation plan (TIP).41

Because many of the landfills currently subject to 40 CFR part 60, subparts Cc and WWW, are closed, the EPA is finalizing provisions to minimize the burden on these closed landfills while continuing to protect air quality, as discussed in sections V.C and VI.C of this preamble.

### IV. Summary of the Final Emission Guidelines

### A. What are the control requirements?

1. Design Capacity and Emissions Thresholds

The revised Emission Guidelines retain the current design capacity thresholds of 2.5 million Mg and 2.5 million m<sup>3</sup>, but reduce the NMOC emission threshold for the installation and removal of a GCCS from 50 Mg/yr to 34 Mg/yr for landfills that are not closed as of September 27, 2017. An MSW landfill that exceeds the design capacity thresholds must install and start up a GCCS within 30 months after reporting that LFG emissions reach or exceed a NMOC level of 34 Mg/yr NMOC. The owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

### 2. Tier 4

The current Emission Guidelines (40 CFR part 60, subpart Cc) provide that owners or operators determine whether the landfill has exceeded the NMOC emissions threshold using one of three available modeling procedures, known as Tiers 1, 2, and 3. The EPA is finalizing in subpart Cf an additional optional methodology based on sitespecific surface methane emissions to determine when a landfill must install and operate a GCCS. This alternative emission threshold methodology, referred to as "Tier 4," is based on SEM and demonstrates that surface methane emissions are below a specific threshold. The Tier 4 SEM demonstration allows certain landfills that exceed modeled NMOC emission rates using Tier 1 or 2 to demonstrate that site-specific surface methane emissions are below a surface concentration threshold (a landfill need not model emissions under Tier 3 before using Tier 4). A landfill that can demonstrate that surface emissions are below 500 ppm for four consecutive quarters does not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded. Owners or operators continue to keep detailed records of each quarterly monitoring demonstration and must submit a Tier 4 surface emissions report annually. If a landfill measures a surface emissions reading of greater than 500 ppm methane, the landfill must submit a GCCS design plan and install and operate a GCCS.

Tier 4 is based on the results of quarterly site-specific methane emissions monitoring of the perimeter of the landfill and entire surface of the landfill along a pattern that traverses the landfill at 30-meter (98-ft) intervals, in addition to monitoring areas where visual observations may indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations. If the landfill opts to use Tier 4 for its emission threshold determination and there is any measured concentration of methane of 500 ppm or greater from the surface of the landfill, the owner or operator must install a GCCS, and the landfill cannot go back to using Tiers 1, 2, or 3 modeling to demonstrate that emissions are below the NMOC threshold.

Tier 4 is allowed only if the landfill owner or operator can demonstrate that NMOC emissions are greater than or equal to 34 Mg/yr, but less than 50 Mg/ yr using Tier 1 or Tier 2. If both Tier 1 and Tier 2 indicate NMOC emissions of

50 Mg/yr or greater, Tier 4 cannot be used. In addition, a wind barrier must be used for Tier 4 when the average wind speed exceeds 4 miles per hour (mph)(or 2 meters per second), or gusts are above 10 mph. Tier 4 measurements cannot be conducted if the average wind speed exceeds 25 mph. Wind speed must be measured with an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The average wind speed must be determined at 5minute intervals. The gust must be determined at 3-second intervals. Further, when conducting Tier 4 monitoring, the sampling probe must be held no more than 5 centimeters above the landfill (e.g., using a mechanical device such as a wheel on a pole). Tier 4 measurements cannot be conducted if the average wind speed exceeds 25 mph

In addition, landfills with a nonregulatory GCCS are allowed to operate the GCCS during the Tier 4 SEM demonstration, however, the GCCS must have operated at least 75 percent of the hours during the 12 months leading up to the Tier 4 SEM demonstration.

### 3. Subcategory of Closed Landfills

Because many landfills are closed and do not produce as much LFG, the EPA is finalizing the proposed subcategory for landfills that close on or before September 27, 2017. Landfills in this subcategory will continue to be subject to an NMOC emission threshold of 50 Mg/yr for determining when controls must be installed or can be removed, consistent with the NMOC thresholds in subparts Cc and WWW of 40 CFR part 60. These closed landfills would also be exempt from initial reporting requirements (i.e., initial design capacity, initial NMOC emission rate, GCCS design plan, initial annual report, closure report, equipment removal report, and initial performance test report), provided that the landfill already met these requirements under subparts Cc or WWW of 40 CFR part 60.

### 4. Criteria for Removing GCCS

Landfill emissions increase as waste is added to a landfill, but decline over time; as waste decays, a landfill produces less and less methane and other pollutants. In the proposed Emission Guidelines (80 FR 52112), the EPA recognized that many open landfills subject to the Emission Guidelines contain inactive areas that have experienced declining LFG flows. Therefore, the EPA is finalizing criteria for determining when it is appropriate to cap, remove, or decommission a portion of the GCCS. The criteria for capping, removing, or decommissioning

<sup>&</sup>lt;sup>41</sup> Indian tribes may, but are not required to, seek approval for treatment in a manner similar to a state for purposes of developing a tribal implementation plan implementing the Emission guidelines. If a tribe obtains such approval and submits a proposed TIP, the EPA will use the same criteria and follow the same procedure in approving that plan as it does with state plans. The federal plan will apply to all affected facilities located in Indian country unless and until EPA approves an applicable TIP.

the GCCS are: (1) The landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the calculated NMOC emission rate at the landfill is less than 34 Mg/yr on three successive test dates. For landfills in the closed subcategory, the NMOC emission rate threshold for removing controls is 50 Mg/yr.

### 5. Excluding Non-Productive Areas From Control

The EPA is finalizing a provision that allows the use of actual flow data when estimating NMOC emissions for the purposes of excluding low- or nonproducing areas of the landfill from control. Owners or operators of landfills with physically separated, closed areas may either model NMOC emission rates, or may determine the flow rate of LFG using actual measurements, to determine NMOC emissions. Using actual flow measurements yields a more precise measurement of NMOC emissions for purposes of demonstrating the closed area represents less than 1 percent of the landfills total NMOC emissions. The Emission Guidelines historically allowed owners or operators to exclude from control areas that are non-productive. In this final action, the retained the 1 percent criteria level, rather than raising it, to prevent landfills from excluding areas from control unless emissions were very low. But, to help owners or operators demonstrate that a non-productive area may be excluded from control, the final rule allow the owner or operator to use site-specific flow measurements to determine NMOC emissions.

### 6. Landfill Gas Treatment

The EPA is finalizing two provisions related to LFG treatment. First, the EPA is clarifying that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but also allows other beneficial uses such as vehicle fuel, production of high-Btu gas for pipeline injection, and use as a raw material in a chemical manufacturing process. Second, the EPA is defining "treated landfill gas" as LFG processed in a treatment system meeting the requirements in 40 CFR part 60, subpart Cf, and defining "treatment system" as a system that filters, de-waters, and compresses LFG for sale or beneficial use. Owners or operators must develop a site-specific treatment system monitoring plan that includes monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure

the treatment system is operating properly for each intended end use of the treated LFG. They also must keep records that demonstrate that such parameters effectively monitor filtration, de-watering, and compression system performance necessary for each end use of the treated LFG. The treatment system monitoring plan must be submitted as part of the landfill's title V permit application. The permitting authority will review the permit application, including the treatment system monitoring plan, as part of the general permitting process. The treatment system monitoring parameters would be included in the permit as applicable requirements and thus become enforceable conditions (*i.e.*, the landfill monitors the treatment system monitoring parameters and maintains them in the specified range).

# *B.* What are the monitoring, recordkeeping, and reporting requirements?

### 1. Wellhead Monitoring

The operational standard, corrective action, and corresponding recordkeeping and reporting remain for temperature and maintaining negative pressure at the wellhead. The EPA is removing the operational standards for nitrogen/oxygen levels at wellheads. Thus, the EPA is removing the corresponding requirement to take corrective action for exceedances of nitrogen/oxygen at wellheads. These adjustments to the wellhead monitoring parameters apply to all landfills. Although landfill owners or operators are not required to take corrective action based on exceedances of nitrogen/ oxygen levels at wellheads, they are required to monitor nitrogen/oxygen levels at wellheads on a monthly basis to inform any necessary adjustments to the GCCS and must maintain records of all monthly readings. The landfill owner or operator must make these records available to the Administrator upon request.

### 2. Surface Monitoring

The EPA is finalizing the proposed requirement to monitor all surface penetrations. Landfills must conduct SEM at all cover penetrations and openings within the area of the landfill where waste has been placed and a GCCS is required to be in place and operating according to the operational standards in 40 CFR part 60, subpart Cf. Specifically, landfill owners or operators must conduct surface monitoring on a quarterly basis around the perimeter of the collection area and along a pattern that traverses the landfill at no more than 30 meter intervals, at all cover penetrations, and where visual observations may indicate the presence of elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover. Cover penetrations include wellheads, but do not include items such as survey stakes, fencing or litter fencing, flags, signs, trees, and utility poles.

### 3. Corrective Action

The owner or operator must measure the LFG temperature at the wellhead and gauge pressure in the gas collection header applied to each individual well on a monthly basis. If there is an exceedance (i.e., LFG temperature of 55 degrees Celsius (131 degrees Fahrenheit) or positive pressure), the owner or operator must initiate corrective action within 5 days. If the temperature exceedance or positive pressure cannot be resolved within 15 days, then the owner or operator must determine the appropriate corrective action by conducting a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after the first measurement of the temperature exceedance or positive pressure. For corrective action that takes longer than 60 days to fully implement, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule for the corrective action that does not exceed 120 days. The owner or operator must also notify the Administrator of any corrective action exceeding 60 days within 75 days and also include a description of the root cause analysis, corrective action analysis and implementation schedule in the annual report. If corrective action is expected to take longer than 120 days after the initial exceedance, the owner or operator must submit the corrective action plan and corresponding implementation timeline to the Administrator for approval within 75 days of the first measurement of positive pressure. Owners or operators must keep records of corrective action analyses. Owners or operators must include corrective action records in the annual compliance report for corrective actions that take more than 60 days to implement.

### 4. Update and Approval of Design Plan

The EPA is reaffirming some requirements and revising others to address design plans. Design plans must continue to be prepared and approved by a professional engineer. The landfill owner or operator must then notify the Administrator that the plan is completed and provide a copy of the plan's signature page. The Administrator will now have 90 days to make a decision about whether the plan should be submitted for review. If the Administrator chooses to review, the approval process continues at outlined in this section. However, if the Administrator indicates that submission is not required or doesn't respond within 90 days, the landfill owner or operator can continue to implement the plan with the recognition that they are proceeding at their own risk. In the event that the design plan is required to be modified to obtain approval, the owner/operator must take any steps necessary to conform any prior actions to the approved design plan and any failure to do so could result in an enforcement action.

The EPA is also finalizing two criteria for when an affected source must update its design plan and submit it to the Administrator for approval. A revised design plan must be submitted on the following timeline: (1) Within 90 days of expanding operations to an area not covered by the previously approved design plan; and (2) prior to installing or expanding the gas collection system in a manner other than the one described in the previous design plan. The final rule continues to require landfill owners or operators to prepare both an initial and revised design plan.

### 5. Electronic Reporting

The EPA is requiring owners or operators of existing MSW Landfills to submit electronic copies of certain required performance test reports, NMOC emission rate reports, annual reports, Tier 4 emission rate reports, and wet landfilling practices through the 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 hardcopies to satisfy federal recordkeeping requirements.

The requirement to submit performance test data electronically to the EPA applies only to those performance tests conducted using test methods that are supported by the Electronic Reporting Tool (ERT). A listing of the pollutants and test methods supported by the ERT is available at: www3.epa.gov/ttn/chief/ ert/ert info.html. When the EPA adds new methods to the ERT, a notice will be sent out through the Clearinghouse for Inventories and Emissions Factors (CHIEF) Listserv (www.epa.gov/airemissions-inventories/emissionsinventory-listservs) and a notice of availability will be added to the ERT Web site. You are encouraged to check

the ERT Web site regularly for up-todate information on methods supported by the ERT.

The EPA believes that the electronic submittal of the reports addressed in this rulemaking will increase the usefulness of the data contained in those reports, is in keeping with current trends in data availability, will further assist in the protection of public health and the environment and will ultimately result in less burden on the regulated community. Electronic reporting can also eliminate paperbased, manual processes, thereby saving time and resources, simplifying data entry, eliminating redundancies, minimizing data reporting errors and providing data quickly and accurately to the affected facilities, air agencies, the EPA and the public.

The EPA Web site that stores the submitted electronic data, WebFIRE, will be easily accessible to everyone and will provide a user-friendly interface that any stakeholder could access. By making the records, data, and reports addressed in this rulemaking readily available, the EPA, the regulated community, and the public will benefit when the EPA conducts its CAArequired reviews. As a result of having reports readily accessible, our ability to carry out comprehensive reviews will be increased and achieved within a shorter period of time.

We anticipate fewer or less substantial information collection requests (ICRs) in conjunction with prospective CAArequired reviews may be needed. Under an electronic reporting system, the EPA would have air emissions and performance test data in hand; we would not have to collect these data from the regulated industry. The data would provide useful information on actual emissions, types of controls in place, locations of facilities, and other data that the EPA uses in conducting required reviews or future assessments. We expect this to result in a decrease in time spent by industry to respond to data collection requests. We also expect the ICRs to contain less extensive stack testing provisions, as we will already have stack test data electronically. Reduced testing requirements would be a cost savings to industry. The EPA should also be able to conduct these required reviews more quickly. While the regulated community may benefit from a reduced burden of ICRs, the general public benefits from the agency's ability to provide these required reviews more quickly, resulting in increased public health and environmental protection.

Air agencies could benefit from more streamlined and automated review of

the electronically submitted data. Having reports and associated data in electronic format will facilitate review through the use of software "search" options, as well as the downloading and analyzing of data in spreadsheet format. The ability to access and review air emission report information electronically will assist air agencies to more quickly and accurately determine compliance with the applicable regulations, potentially allowing a faster response to violations which could minimize harmful air emissions. This benefits both air agencies and the general public.

For a more thorough discussion of electronic reporting required by this rule, see the discussion in the proposed NSPS (79 FR 41818) and the 2015 proposed Emission Guidelines (80 FR 52127). In summary, in addition to supporting regulation development, control strategy development, and other air pollution control activities, having an electronic database populated with performance test data will save industry, air agencies, and the EPA significant time, money, and effort while improving the quality of emission inventories and air quality regulations and enhancing the public's access to this important information.

6. Landfills Recirculating Leachate or Adding Other Liquids

In the ANPRM and proposed Emission Guidelines, the EPA solicited input on whether additional action should be taken to address emissions from wet landfills. As discussed in section VI.A.3 of this preamble, there were a wide variety of perspectives provided in the public comments, and while many commenters supported separate thresholds for wet landfills, the EPA did not receive sufficient data to support a separate subcategory for landfills adding leachate or other liquids. In addition, the EPA has several other pending regulatory actions that could affect wet landfills. Accordingly, the EPA believes it is appropriate to further assess emissions from wet landfills prior to taking additional action. Therefore, the EPA is finalizing electronic reporting of additional data elements, as discussed in Section V.A.3 of this preamble, to inform potential action on wet landfills in the future.

## C. Startup, Shutdown, and Malfunction Provisions

The standards in 40 CFR part 60, subpart Cf, apply at all times, including periods of startup or shutdown, and periods of malfunction. The EPA is reaffirming the work practice standard applicable during SSM events wherein the landfill owner or operator is required to shut down the gas mover system and close all valves in the collection and control system potentially contributing to the venting of the gas to the atmosphere within 1 hour of the collection or control system not operating. The landfill owner or operator must also keep records and submit reports of all periods when the collection and control device is not operating.

### V. Summary of Significant Changes Since Proposal

### A. Changes to Monitoring, Recordkeeping, and Reporting

### 1. Wellhead Monitoring

Although the EPA is finalizing the proposed removal of wellhead operational standards for nitrogen/ oxygen, the EPA has decided to retain the operational standards for temperature. The temperature standards were considered to be an essential indicator for fires, as discussed in Section VI.A.1 of this preamble.

### 2. Corrective Action

We are revising the procedural requirements for correcting positive pressure and temperature by allowing owners or operators 60 days to correct exceedances. If the owner or operator cannot achieve negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) by 60 days after the initial exceedance, owners or operators must conduct a root cause analysis to identify the most appropriate corrective action, which can include, but is not limited to, expanding the GCCS. For corrective action that takes longer than 60 days, owners or operators must develop an implementation schedule to complete the corrective action as soon as practicable, but no more than 120 days following the initial positive pressure or temperature reading. Additionally, owners or operators must keep records of the corrective action analysis. Owners or operators must submit the corrective action and corresponding implementation timeline to the Administrator for approval when implementation of the corrective action is expected to take longer than 120 days after the initial exceedance.

This change provides flexibility to owners or operators in determining the appropriate remedy, as well as the timeline for implementing the remedy.

## 3. Landfills Recirculating Leachate or Adding Other Liquids

The EPA is adding additional electronic reporting requirements for wet areas of landfills. The additional reporting applies to areas of the landfill that have recirculated leachate within the last 10 years and to areas where other liquids were added within the last 10 years.

The EPA is requiring these landfills to annually report quantities of liquids added and/or leachate recirculated. The first report will contain historical quantities, where those data are available in on-site records. The EPA is also requiring the landfill to report the surface area over which the liquids are added or the leachate is recirculated during each reporting year. The EPA is also requiring the landfill to report the total waste disposed in the area with recirculated leachate or added liquids as well as the annual waste acceptance rates in those same areas. As discussed in Section VI.A.3 of this preamble, this additional electronic reporting for wet landfills will inform potential future action on wet landfills.

### 4. Portable Gas Analyzers

We are allowing the use of portable gas composition analyzers in conjunction with Method 3A to monitor the oxygen level at a wellhead. A portable analyzer may be used to monitor the oxygen level at a wellhead provided that it is calibrated and meets all QA/QC requirements according to Method 3A. ASTM D6522–11 may be used as an alternative to Method 3A for wellhead monitoring as long as all the quality assurance is conducted as required by ASTM D6522–11. To use ASTM D6552–11, the sample location must be prior to combustion.

This change allows owners or operators to employ devices that are commonly used in practice to measure wellhead parameters. This change also eliminates the need for the landfill owner or operator to request portable analyzers as an alternative, as well as the need for agency review or approval of such requests. In addition to providing reliable results when used properly, portable analyzers have a number of benefits, including common use, the ability to provide additional information on gas composition, and the ability to download data to a spreadsheet for easy access and analysis.

### 5. More Precise Location Data

The EPA is finalizing a requirement for landfills to report the latitude and longitude coordinates of each surface emissions exceedance (500 ppm methane or greater), as proposed, except the instrument accuracy must be at least 4 meters instead of 3 meters. This change will provide a more robust and long-term record of GCCS performance. Landfill owners or operators and regulators can use locational data to gain perspective on how the LFG collection system is functioning over time and owners or operators will be able to track trends in GCCS performance and cover practices to ensure a well operating system and minimize emissions.

### B. Tier 4

The EPA is finalizing the use of Tier 4 SEM as an alternative way of determining when a landfill must install a GCCS; however, in the final rule, the final Tier 4 emissions threshold determination can be used only at landfills that have modeled NMOC emissions using Tier 1 or Tier 2 of greater than or equal to 34 Mg/yr but less than 50 Mg/yr because the landfills NESHAP (40 CFR part 63, subpart AAAA) requires landfills that have modeled NMOC emissions of 50 Mg/yr or greater to install and operate a GCCS irrespective of surface emissions. If both Tier 1 and Tier 2 indicate NMOC emissions of 50 Mg/yr or greater, Tier 4 cannot be used (a landfill need not model emissions under Tier 3 before using Tier 4). In order to verify that the landfill is eligible for Tier 4, the EPA is finalizing a provision to require landfill owners or operators that choose to use Tier 4 to continue to conduct Tier 1 and Tier 2 NMOC emission rate calculations and report results in the annual report.

The EPA is also limiting the use of Tier 4 at landfills with a GCCS installed. In order for a landfill with an operational GCCS to qualify for Tier 4, the GCCS must have operated for at least 75 percent of the 12 months prior to initiating Tier 4 testing. The EPA is finalizing reporting and recordkeeping requirements for the annual operating hours of destruction devices in order to verify that a landfill with a GCCS installed and opting for Tier 4 meets the GCCS criteria for having operated the system.

In addition, the EPA is finalizing specific requirements for the use of Tier 4 for emission threshold determinations related to wind speed. Since accurate measurements can be compromised in even moderately windy conditions, the EPA is requiring the owner or operator to use a wind barrier, similar to a funnel or other device, to minimize surface air turbulence when onsite wind speed exceeds the limits in the rule. Thus, when a wind barrier is used, the final rule allows the Tier 4 surface emissions demonstration to proceed when the average on-site wind speed exceeds 4 mph, or gusts exceed 10 mph. Tier 4 measurements cannot be conducted if the average wind speed exceeds 25

mph. Although we are aware of the use of wind barriers in the field, the EPA intends to provide additional guidance on their use. In addition, the owner or operator must take digital photographs of the instrument setup, including the wind barrier. The photographs must be time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day, for the duration of the Tier 4 monitoring demonstration. The owner or operator must maintain those photographs per the recordkeeping requirements. Wind speed must be measured with an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The average wind speed must be determined at 5-minute intervals. The gust must be determined at 3-second intervals. Further, when taking surface measurements, the sampling probe must be held no more than 5 centimeters above the landfill surface (e.g., using a mechanical device such as a wheel on a pole).

The EPA is also finalizing reporting and recordkeeping requirements to ensure that a GCCS is installed in a timely manner and to improve the transparency of SEM testing. To ensure that a GCCS is installed in a timely manner, the EPA is requiring a GCCS to be installed and operated within 30 months of the most recent NMOC emission rate report in which the calculated NMOC emission rate equals or exceeds 34 Mg/yr according to Tier 2, once there is any measured concentration of methane of 500 ppm or greater from the surface of the landfill. To improve the transparency of SEM testing, landfill owners or operators must notify the delegated authority 30 days prior to conducting Tier 4 tests and maintain records of all SEM monitoring data and calibrations. In addition, landfill owners or operators must take and store digital photographs of the instrument setup. The photographs must be time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day, for the duration of the Tier 4 monitoring demonstration.

### C. Changes To Address Closed or Non-Productive Areas

### 1. Closed Landfill Subcategory

The closed landfill subcategory is expanded to include those landfills that close on or before September 27, 2017 which is 13 months after publication of the final Emission Guidelines. This change gives landfills that closed or are planning to close time to complete the steps to reach closure.

## 2. Criteria for Removing or Decommissioning GCCS

The GCCS can be capped or removed when a landfill owner or operator demonstrates that (1) the landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the calculated NMOC emission rate at the landfill is less than 34 Mg/yr on three consecutive test dates (50 Mg/yr for the closed landfill subcategory). The final rule does not contain a GCCS removal criterion based on SEM.

## D. Startup, Shutdown, and Malfunction Provisions

In the 2015 Emission Guidelines proposal (80 FR 52103), the EPA clarified that standards apply at all times, including periods of SSM. The EPA also added requirements to estimate emissions during SSM events. Consistent with Sierra Club v. EPA, 551 F.3d 1019 (D.C. Cir. 2008), the EPA is clarifying that the standards in the Emission Guidelines, once implemented through an EPA-approved state plan or a promulgated federal plan, apply at all times. In recognition of the unique nature of landfill emissions, and consistent with the need for standards to apply at all times, including during periods of SSM, the EPA is reaffirming a work practice standard that applies during SSM events. During such events, owners or operators must shut down the gas mover system and close within 1 hour all valves in the collection and control system contributing to the potential venting of the gas to the atmosphere. The landfill owner or operator must also keep records and submit reports of all periods when the collection and control device is not operating.

### E. Other Corrections and Clarifications

The use of EPA Method 25A and Method 18 (on a limited basis, *e.g.*, specific compounds like methane) are included in the final rule. Method 25A in conjunction with Method 18 (for methane) or Method 3C can be used to determine NMOC for the outlet concentrations less than 50 ppm NMOC as carbon.

### VI. Rationale for Significant Changes Since Proposal

After considering public comments and further analyzing the available data, the EPA made several changes in this final rule relative to what we proposed.

A complete list of public comments received on the proposed rule and the responses to them can be viewed in the document "Responses to Public Comments on EPA's Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills: Proposed Rules" (hereafter "Response to Comments document"), which is available in Docket EPA-HQ-OAR-2014-0451. This section of the preamble summarizes comments and presents responses to those comments for only those provisions that have changed since the 2015 proposed Emission Guidelines.

### A. Changes to Monitoring, Recordkeeping, and Reporting

### 1. Wellhead Monitoring

In the 2014 proposed NSPS, the EPA requested comment on alternative wellhead monitoring requirements, including potential exclusion from the temperature and nitrogen/oxygen monitoring requirements, or a reduction in the frequency of this monitoring. For example, the EPA indicated that it could reduce the frequency of wellhead monitoring for these three parameters (temperature and nitrogen/oxygen) from monthly to a quarterly or semi-annual schedule. The EPA requested comments on whether the potential exclusion should apply to a subset of landfills or landfill areas based on beneficial use of LFG.

In the 2015 proposed Emission Guidelines, the EPA proposed to remove the operational standards (*i.e.*, the requirement to meet operating limits) for temperature and nitrogen/oxygen at the wellheads, thus removing the corresponding requirement to take corrective action for exceedances of these parameters. This approach was taken to eliminate the need for owners or operators to request higher operating values (HOVs) for these parameters, submit alternative timelines for corrective action, or expand the GCCS to address exceeding these wellhead standards. The EPA proposed to maintain the requirement to monitor nitrogen/oxygen and temperature on a monthly basis, but to remove the requirement to report exceedances from fluctuations or variations in these parameters in the annual reports. Instead of annual reporting, the EPA proposed that landfill owners or operators maintain the records of this monthly monitoring on site to inform any necessary adjustments to the GCCS and make these records available to the Administrator upon request. The EPA proposed to maintain the requirement to operate the GCCS at negative pressure and in a manner that collects the most LFG and minimizes losses of LFG through the surface of the landfill. The EPA also requested comments on whether it should add a requirement to monitor wellhead flow rate, or any other wellhead monitoring parameters, that would help to ensure a well-operated GCCS (80 FR 52138).

*Comment:* Several commenters want the EPA to maintain the wellhead operational standards, including states, industry consultants, and environmental organizations, with one environmental organization stating that these wellhead parameters are the only warning signal for potential fire hazards. One state stated that the removal of the operational standards could lead to some landfill owners or operators not operating the GCCS in an effective manner, thus creating a potential for increased LFG emissions through the landfill surface.

Many other commenters supported removing the nitrogen/oxygen and temperature operational standards, including industry, some states), and the Small Business Association. Several commenters indicated that a lack of response to or approval of HOV requests or alternative timelines for corrective action, despite appropriate justification, is a significant administrative barrier in the current Emission Guidelines. These commenters stated that a lack of response to or approval of HOVs results in owners or operators having to install new wells to correct for temperature or oxygen exceedances even though such expansion of the GCCS does not correct the exceedance and may be contrary to a well-operated GCCS. One commenter stated that removing the operational standards would alleviate one of the most significant barriers to installing interim gas collection measures and would alleviate the corresponding administrative burden of requesting HOVs. Other commenters stated that removing the operational standards would not only reduce administrative burden, but would also facilitate early installation of GCCS and the use of appropriate best management practices to maximize gas collection. Two commenters from state agencies agreed with removing the operational standards, and agreed with retaining monthly monitoring of temperature and nitrogen/oxygen and retaining the corresponding monitoring data.

Several commenters suggested that certain monitoring data should be reported on a semi-annual basis so that agencies can identify or prevent fires. For example, state agency commenters suggested that the EPA require semiannual reporting of wellhead readings above 5 percent oxygen and 130 degrees Fahrenheit, which was supported by supplemental comments received from the industry and industry trade organizations. One commenter also suggested reporting of any subsurface fire. One regional agency wanted the results to be reported if temperature exceeds 150 °F and also suggested reporting any methane to carbon dioxide ratio less than 1.

Commenters that supported removal of the operational standards for temperature and nitrogen/oxygen also contended that the nitrogen/oxygen and temperature wellheads parameters are poor indicators of landfill fires or inhibited decomposition and that landfill owners or operators already have their own incentive to prevent landfill fires. Commenters added that expanding the LFG collection system by drilling new wells may introduce more air into the landfill, which can exacerbate a fire and actually increase oxygen content. Commenters (0451-0178, 0451-0167, 0215-0191, 0215-0121) that favored retaining the operational standards for temperature and nitrogen/oxygen contend that temperature and nitrogen/oxygen data are essential to inform regulators of the presence of the potential for a landfill fire.

*Response:* After carefully considering public comments and available data, the EPA is removing the operational standards (*i.e.*, the requirement to meet operating limits) for nitrogen/oxygen, but not temperature. Landfill owners or operators must continue to monitor nitrogen/oxygen on a monthly basis. however, to ensure that the GCCS is well maintained and operated, collects the most LFG, and minimizes losses of LFG through the surface of the landfill. Landfill owners or operators must maintain records of this monthly monitoring and make these records available to the Administrator upon request. The EPA is requiring monthly monitoring and recordkeeping for these wellhead monitoring parameters (i.e., oxygen, nitrogen, temperature, and pressure), since these are key indicators that are already being monitored by landfill owner or operators to determine how well the landfill is being operated, including the capturing and destroying landfill gas, promoting efficient anaerobic decomposition and/or preventing landfill fires.

Because of concerns regarding fire hazards, the EPA is retaining the operational standard for temperature. Landfill owners or operators must electronically submit, as part of their annual report, all readings that show LFG temperatures greater than 55 degrees Celsius (131 degrees Fahrenheit), and document the root cause and corrective action taken to correct for this exceedance, as discussed in section VI.A.2 of this preamble. While several commenters supported removing the temperature parameter, other commenters were concerned with fire risks if the parameter was removed. In addition, given the EPA experience with consent decrees and other enforcement actions involving elevated temperature values, the EPA has decided to retain temperature as an operating standard in the final rule. This overall approach will reduce the number of requests for higher operating values and alternative timeliness for nitrogen/oxygen parameters. In addition, note that regulatory agencies can request data records of oxygen, nitrogen, or temperature monitoring, as measured on a monthly basis, at any time.

Landfills are subject to 40 CFR part 60, subpart A. These provisions require landfill owners or operators, to the extent practicable, to maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Due to the extreme environmental consequences of a subsurface landfill fire, these provisions obligate landfill owners or operators to take all practical steps necessary to avoid landfill fires. While this action removes requirements to meet operational standards for nitrogen/ oxygen at wellheads and to make corrective actions, landfill owners or operators must continue all due diligence to ensure that the GCCS is not overdrawn, thereby creating a flammable subsurface environment.

Because the corrective action requirements for certain parameters have been retained, the EPA is reaffirming its provisions for HOVs. The HOV provisions were originally enacted to address variations in temperature between landfills and between wells. With a sufficient demonstration (i.e., supporting data showing the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens), an HOV may be established for temperature, nitrogen, or oxygen at a particular well. The EPA encourages regulatory authorities review requests for HOVs in a timely manner and to make use of these mechanisms where

appropriate.<sup>42</sup> States may also consider HOVs when developing state plans.

### 2. Corrective Action

In a 1998 Federal Register notice (63 FR 32748, June 16, 1998), the EPA amended the wellhead monitoring provisions of 40 CFR part 60, subpart WWW, to allow an alternative timeline for correcting wellhead exceedances to be submitted to the Administrator for approval. The rule change made the wellhead monitoring provisions consistent with the SEM provisions, which allow an alternative remedy and corresponding timeline for correcting an exceedance to be submitted to the Administrator for approval. The EPA noted in the 1998 preamble that any timeline extending more than 120 days must be approved by the regulating agency. Since 1998, questions have been raised about the timing of correcting wellhead exceedances and whether a landfill needs agency approval for corrective action timelines that exceed 15 calendar days but are less than the 120 days allowed for expanding the GCCS.

In the 2015 Emission Guidelines proposal, the EPA clarified its intent and outlined a corresponding timeline for correcting positive pressure at a wellhead. The EPA proposed that a landfill must submit an alternative corrective action timeline request to the Administrator for approval if the landfill cannot restore negative pressure within 15 calendar days of the initial failure to maintain negative pressure and the landfill is unable to (or does not plan to) expand the gas collection system within 120 days of the initial exceedance. The EPA explained in the preamble that it did not specify a schedule in the proposed rule language by when a landfill would need to submit alternative timeline requests because the EPA determined that investigating and determining the appropriate corrective action, as well as the schedule for implementing corrective action, would be site specific and depend on the reason for the exceedance (80 FR 52126). In addition, the EPA requested comment (80 FR 52126) on an alternative timeline that extends the requirement for notification from 15 days to as soon as practicable, but no later than 60 days from when an exceedance is identified. In the 2014 ANPRM, the EPA had requested

comment on the same approach, as well as whether 60 days is the appropriate time to make necessary repairs.

Comment: The EPA received comments on the proposed changes, including the time allowed for corrective action and for submitting alternative timeline requests for approval by the Administrator. Regarding the timeframe for submitting a request, several state agencies recommended extending the 15-day timeline for a request to be submitted and indicated that 15 days is not sufficient time to evaluate the problem and plan for corrective action, which may often involve construction activities. There were varied opinions from the state agencies on what length of time beyond 15 days is appropriate. Two agencies supported an extension to as soon as practicable but no later than 60 days, other agencies specified that the request should be submitted within 30 days from the initial exceedance.

Industry representatives from private and publicly owned landfills as well as waste industry consultants opposed the requirement to submit a request for an alternative corrective action timeline within 15 days. The commenters were concerned that 15 days is not enough time to assess the appropriate solution across miles of interconnected piping. In addition, the commenters were concerned that a 15-day time period would increase the paperwork for both the landfill and the reviewing regulatory agency. One commenter indicated that while many repairs can be completed within 60 days, some repairs, especially in cold weather climates, may take longer. One industry commenter suggested that a timeframe of 90 days to complete any adjustments or repairs is appropriate. If the corrections could not be made within 90 days, the commenter stated that the landfill would be prepared to have the system expanded within 120 days.

Industry commenters raised the issue that the timeline for corrective action for surface exceedances in the current subpart WWW regulations, 40 CFR 60.755(c)(4)(v), allows 120 days to install a new well or other collection device or submit an alternative timeline for another corrective action. These commenters also indicated that the 1998 NSPS amendments modified the corrective action for wellhead parameter exceedances to be consistent with the timeframe allowed for correcting surface exceedances (63 FR 32748, June 16, 1998). The commenters also noted that the 1998 amendments recognized that installation of a new well may not always be the appropriate corrective

action for remedying a wellhead exceedance.

Despite the 1998 rule amendments, several of these industry commenters note that interpretation and implementation of the 1998 amendments to 40 CFR 60.755(a)(3) have been inconsistent, with some agencies only requiring the landfill owner or operator to submit requests if the corrective action will take longer than 120 days. Other states have taken the position that any exceedances that cannot be resolved within 15 days must automatically result in a requirement to expand the GCCS. One commenter referenced determinations that required landfills to submit an alternative timeline request within 15 days. One commenter indicated that the original rule never anticipated notification and a request for an alternative compliance timeline within 15 days, while another commenter indicated that the state of Texas requires landfills to submit alternative timelines only if the corrective action requires more than 120 days to complete.

In consideration of the 1998 final rule notice, industry commenters recommended that EPA require landfill owners or operators to submit an alternative timeline request for approval as soon as practicable and only in circumstances in which a system expansion or alternative corrective action will require more than 120 days to complete. One of the commenters (Republic 0451-0176) suggested that this approach was consistent with the Petroleum Refineries NSPS (40 CFR part 60, subpart Ja). The commenter noted that while the Landfills NSPS requires special approval to avoid the default corrective action of expanding the GCCS, the Refineries NSPS requires a root cause analysis to identify the appropriate corrective action, without specifying a default approach. The Refineries NSPS requires a root cause analysis and a corrective action analysis for exceedances and requires the facility to implement the corrective action within 45 days. If the corrective action cannot be completed in 45 days, the refinery must document and record all corrective actions completed to date. For actions not fully completed by day 45, they must develop an implementation schedule, as soon as practicable, for beginning and completing all corrective action.

One commenter provided some ideas for landfills to demonstrate good faith effort to comply with the 120-day corrective action schedule. They suggested the rules clarify that the landfill owner or operator is required to submit a notification to the agency that

<sup>&</sup>lt;sup>42</sup> The EPA asserts the importance of case specific HOV requests and approvals. However, to address concerns from HOV request reviewers and those submitting requests, an example of regulatory guidance for HOV demonstrations can be found at http://www.epa.ohio.gov/portals/34/document/ guidance/gd\_1002.pdf.

identifies and describes the diagnosis performed, the results of the diagnosis, identifies the corrective measure or alternative remedy to be implemented and reason(s) why system expansion is not appropriate to correct the exceedance. Under such an approach, corrective measures other than expansion that take 0-60 days to complete from the initial exceedance would not require any notification or approval but they would be documented in the annual compliance report. For corrective actions other than expansion that take longer than 60 days but less than 120 days to complete, the landfill owner or operator would notify the regulatory agency by day 75 from the date of the initial exceedance. This would allow 45 days for the agency to review and comment, and such notification would not require agency approval so as not to delay the site from proceeding with and completing the corrective action, as long as the corrective actions are completed within the 120-day timeframe.

Industry commenters indicated that the timeline for corrective action is affected by other regulations. Two of these commenters noted that any corrective action that involves disturbing the final landfill cover could delay diagnosing the problem. All of these commenters also noted that a 60day timeframe is problematic for landfills affected by the Asbestos NESHAP (40 CFR part 61, subpart M), which requires a 45-day notification prior to disturbing areas that may have asbestos containing material.

asbestos containing material. *Response:* The EPA is retaining the corrective action requirements for temperature in addition to negative pressure. The EPA recognizes the importance of temperature as a critical indicator of landfill fires and its effect on methanogens. Further removal of the corrective action requirements for temperature could have the unintended consequence of improper operation of a GCCS which could lead to a subsurface fire. Due to the importance of this parameter, e-reporting requirements for excessive temperature have also been established to better assess landfill fires.43

After carefully considering the comments received and evaluating the available data, the EPA is finalizing corrective action requirements that generally give owners or operators 60

days to investigate and determine the appropriate corrective action and then implement that action. The EPA has retained the requirements for temperature and positive pressure, in that if positive pressure or temperature exceedances exist, action must be initiated to correct the exceedances within 5 calendar days. This requirement has been retained to ensure the landfill takes prompt action to ensure the GCCS remains well-operated. The EPA recognizes, however, that the appropriate corrective action, as well as a schedule to implement it, is sitespecific and depends on the reason for the exceedance. Therefore, for corrective action that takes longer than 60 days after the initial exceedance to implement, the EPA is providing flexibility for the landfill to determine the appropriate course of action based on a root cause analysis. Specifically, if the owner or operator cannot achieve negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) at the GCCS wellhead within 15 days, then the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after positive pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) was first measured. An implementation schedule is required for exceedances that will take longer than 60 days to correct. A root cause analysis is an assessment conducted through a process of investigation to determine the primary cause, and any other contributing cause(s), of positive pressure at a wellhead or temperature above 55 degrees Celsius (131 degrees Fahrenheit). The root cause analysis and documentation of the corrective action taken to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) must be kept on site as a record, but they do not have to be submitted or approved.

If negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) cannot be achieved within 60 days, then the owner or operator must develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the positive pressure or temperature reading. The owner or operator must also notify the Administrator within 75 days. The implementation schedule, root cause analysis, and documentation of the corrective action taken to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) must be submitted in the facility's next

annual report, but these items do not have to be approved.

If the exceedance cannot be corrected (or is not expected to be corrected) within 120 days, then the owner or operator must submit the root cause analysis, plan for corrective action to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit), and the corresponding implementation timeline to the Administrator. The Administrator must approve the plan for corrective action and the corresponding timeline. The owner or operator must submit the proposed corrective action and timeline to the Administrator for approval as soon as practicable but no later than 75 days after the initial exceedance. Requiring approval by the Administrator for corrective action timelines that extend beyond 120 days is consistent with the corrective action timeline for surface emissions in 40 CFR 60.36f(c)(4)(v). This approach also prevents the landfill owner or operator from delaying submittals for corrective action requests until day 120. Once the negative pressure has been restored, the facility must document the corrective actions taken in the facility's next annual report.

For corrective action required to address positive pressure or temperature, the owner or operator must keep a record of the root cause analysis conducted, including a description of the recommended corrective action(s); the date for corrective action(s) already completed following the positive pressure reading and; and for action(s) not already completed within 60 days of the initial positive pressure reading, a schedule for implementation, including proposed commencement and completion dates. For corrective actions taking longer than 60 days to correct the exceedance, the owner or operator would also include in the annual report the root cause analysis, recommended corrective action(s), date corrective actions were completed, and schedule for implementing corrective actions. The owner or operator must also notify the Administrator within 75 days. For corrective actions taking longer than 120 days to correct the exceedance, the owner or operator would include, in a separate notification submitted to the Administrator for approval as soon as practicable, but no later than 75 days after the initial positive pressure or elevated temperature reading, the root cause analysis, recommended corrective action(s), date corrective actions taken to date were completed, and proposed schedule for implementing corrective actions.

<sup>&</sup>lt;sup>43</sup> The need to rely on temperature in addition to pressure is also illustrated in the report titled Subsurface Heating Events at Solid Waste and Construction and Demolition Debris Landfills: Best Management Practices at http:// www.epa.state.oh.us/Portals/34/document/ guidance/gd 1009.pdf.

3. Landfills Recirculating Leachate or Adding Other Liquids

In the ANPRM and proposed Emission Guidelines, the EPA solicited input on whether additional action should be taken to address emissions from wet landfills (*i.e.*, landfills that recirculate leachate or add liquids). Commenters differed on whether the EPA should require separate thresholds or different lag times for landfills that recirculate leachate or add liquids. (The lag time is the time period between when the landfill exceeds the emission rate threshold and when controls are required to be installed and started up.)

*Comments:* Commenters supported more environmentally protective requirements for wet landfills and asserted that wet landfills produce more methane but actually collect less. Commenters said that the EPA should shorten the lag time for installing controls for these landfills. Other commenters opposed separate requirements for wet landfills and contended that additional requirements for wet landfills would achieve minimal emission reductions and would result in a significant additional burden for landfills that recirculate leachate. One commenter said that the EPA should focus on potential emission reductions at landfills that recirculate leachate.

Commenters also differed on what methane generation rate (k-value) should be used in the landfill Emission Guidelines for wet landfills. One commenter indicated that they have previously provided several studies on k-values for wet landfills to EPA and urged the EPA to update the emission factors for wet landfills based on this literature prior to adjusting the control requirements at landfills recirculating leachate or adding other liquids. Another commenter asked the EPA to use higher, more representative kvalues, or perhaps a sensitivity analysis for a range of k-values to estimate the impacts of controlling emissions from wet landfills in the landfills Emission Guidelines.

*Response:* Based on the diverse nature of the feedback provided and several other outstanding EPA actions affecting the control requirements and emission factors for wet landfills, the EPA is not creating separate emission threshold or lag time requirements for wet landfills in this action. Instead, the EPA believes it is appropriate to further assess emissions from wet landfills prior to taking additional action on control requirements or changes to the k-values. As a result, the EPA is finalizing additional electronic reporting requirements for wet landfills with a design capacity of 2.5 million Mg or greater to inform potential future action on wet landfills. The final rule is limiting reporting of these additional data to wet landfills that meet the current size threshold of 2.5 million Mg of design capacity to be consistent with the universe of landfills that are affected by the rule.

Specifically, the final Emission Guidelines require annual electronic reporting of the volume of leachate recirculated (gallons per year) and the volume of other liquids added (gallons per year), as well as the surface area over which the leachate is recirculated (or sprayed), and the surface area (acres) over which any liquids are applied. The quantity of leachate recirculated or liquids added should be based on company records or engineering estimates. The initial report will collect historical data for the 10 years preceding the initial annual reporting year, to the extent the data are available in on-site records, along with data corresponding to the initial reporting year. After the initial report, the other annual electronic reports will include only the quantities of leachate recirculated and/or added liquid and their corresponding surface areas for each the subsequent reporting year. The EPA believes many landfills, especially those operating with a Research, Development, and Demonstration (RD&D) permit, already keep records and may submit reports containing quantities of liquids added. So, the effort to track these additional data is expected to be minimal. RD&D permits are issued through Resource Conservation and Recovery Act (RCRA) subtitle D, part 258 regulations for MSW landfills. The EPA is also aware of some state rules that require reporting of leachate or added liquids outside of the Clean Air Act reporting requirements. Consolidating these data in an electronic format in a central repository can help inform how leachate or added liquids affect LFG generation and collection whether air emission standards should be adjusted for wet landfills.

The EPA is also requiring the landfill to report the total waste disposed (Mg) in the area with recirculated leachate and/or added liquids, as well as the annual waste acceptance rates (Mg/yr) in those same areas. Recognizing that the waste quantities may be tracked at the scale house entry to the landfill and not the specific cell where the liquids are added, the EPA is allowing the landfill to report data based on on-site records or engineering estimates.

The EPA is exempting landfills in the closed landfill subcategory from this

wet landfill report recognizing that this information would be difficult to obtain from this subcategory of landfills, these landfills are unlikely to still be adding liquids if closed, and also because the gas generation from these landfills is on the downward side of their gas generation curve. In addition, for similar reasons the EPA is allowing owners or operators of landfills to discontinue annual reporting of the wet landfill report after the landfill has submitted its closure report.

The EPÅ is also aware of annual LFG collected and annual LFG generation data electronically reported to 40 CFR part 98, subpart HH, of the GHGRP and therefore the EPA is not requesting reporting of these data in this rule to avoid duplicative requests. However, the EPA may link the wet landfill practices data collected under the landfills NSPS with the annual gas collected data under subpart HH in order to inform how liquids addition affects LFG emissions. Similarly, the EPA understands that precipitation may affect gas generation. However, since precipitation data are readily available through the National Weather Service, the EPA is not requiring reporting of this parameter. Instead, the EPA will use existing electronic data already available to link up with data collected under this final rule. These additional data will be used to assess the appropriateness of potential future action on wet areas of landfills.

The Paperwork Reduction Act (PRA) requires each federal agency to obtain OMB approval before undertaking a collection of information directed to 10 or more people. The PRA applies whether a "collection of information is mandatory, voluntary, or required to obtain or retain a benefit." The EPA believes the additional data on wet landfills will be beneficial for evaluating whether separate thresholds for wet landfills are appropriate when revising future MSW landfill standards. Because the EPA understands that many of the data elements in the wet landfill report, including quantities of leachate or other liquids added and the surface areas over which those liquids are added are tracked at a state level as part of a leachate management or RDD permit, the EPA does not anticipate these data. Additionally, the EPA is allowing landfill owners or operators to report the data elements in the wet landfill monitoring report using either engineering estimates or on-site records to minimize the burden on respondents, depending on the types of records the landfill owner/operator may keep.

This is a new rule and a new collections submitted to OMB under

EPA ICR number 2522.02. This collection is similar to collections for subpart Cc. Thus, many of the line item burden estimates in this ICR estimate are the same as the burdens submitted to OMB under ICR number 1893.06 for the most recent ICR renewal for subpart Cc.

### 4. Portable Gas Analyzers

Commenters on the proposed NSPS (79 FR 41796) requested that the EPA specify that portable gas composition analyzers are an acceptable alternative to Methods 3A or 3C, and noted that these devices are commonly used in practice to measure wellhead parameters and are calibrated according to the manufacturer's specifications. Currently, approvals of these analyzers are done on a case-by-case basis. Therefore, in the preamble for the proposed revisions of the Emission Guidelines (80 FR 52141), the EPA requested data or information on using a portable gas composition analyzer according to Method 3A for wellhead monitoring. The EPA also requested data on other reference methods used for calibrating these analyzers.

Comment: Many commenters supported the use of portable gas composition analyzers and requested that the EPA specify that these analyzers may be used as an approved alternative monitoring method for well monitoring. Three state agencies indicated the use of the portable analyzers is common practice. One of these agencies stated that Method 3A and Method 3C are designed to be used in "quasi-CEMS" and/or "laboratory benchtop" situations and most landfill operators are not using this type of equipment to test wellhead LFG; instead, landfill operators are using handheld-size portable analyzers. Another state agency stated that portable gas composition analyzers (e.g., Landtec GEM 2000) are a standard for conducting MSW landfill well monitoring and the analyzers provide additional information on gas composition than what the current Emission Guidelines require, which provides operators with a better understanding of the condition of the landfill. This commenter said that a primary advantage of portable gas composition analyzers, for both landfills and regulators, is that these devices take and record the monitored readings (as well as other information on gas composition that is not required to be monitored in the Emission Guidelines), which can then be downloaded into a spreadsheet and prevent landfills from making data collection mistakes. The commenter suggested that the EPA and state air pollution control agencies

would benefit if the EPA were to require landfills to submit, in their semi-annual reports, all of the monitoring data recorded by portable gas composition analyzers.

One commenter stated that most portable gas composition analyzers can be used to measure the oxygen level at the wellhead and can be calibrated according to Method 3A, but are unlikely to be calibrated according to Method 3C (to measure oxygen or nitrogen levels) because such calibration requires the use of gas chromatograph equipment with a thermal conductivity detector and integrator. The commenter said that Method 3A is straightforward and does not specify a particular technology. Several commenters specifically referenced the comments from an equipment manufacturer that provided specific details on how its Landtec GEM Series portable analyzers are able to comply with each specific requirement in Method 3A, including the calibration requirements. Two of these commenters said that portable gas composition analyzers should be allowed in both the Emissions Guidelines and NSPS. Another of these commenters requested that the EPA add language to the rule to recognize that balance gas is commonly used as a surrogate for nitrogen.

With regard to the EPA's request for data on other reference methods used for calibrating portable gas composition analyzers, one commenter suggested that the EPA allow ASTM D6522 as an alternative to Method 3A because an analyzer can easily be calibrated for oxygen alone following ASTM D6522. The commenter stated that although the QA/QC procedures in ASTM D6522 are different from Method 3A, they are just as rigorous as Method 3A. The commenter stated that it has extensive data available showing portable gas composition analyzers are routinely calibrated according to ASTM Method D6522 for measuring NOx, CO, and oxygen during engine testing. This commenter also stated that any analyzer or device must be calibrated according to an EPA approved method and not just manufacturer's specifications.

*Response:* The EPA appreciates the commenters providing information regarding the use of portable gas composition analyzers for landfill monitoring. Commenters provided data showing that their portable gas composition analyzers are used to monitor the oxygen level at a wellhead and are capable of meeting the calibration requirements in Method 3A. Therefore, in this action, we are clarifying the use of portable gas composition analyzers with Method 3A.

A portable gas composition analyzer may be used to monitor the oxygen level at a wellhead provided that the analyzer is calibrated and meets all QA/QC according to Method 3A. Although we did not receive enough information regarding calibration methods that could be used on a portable gas composition analyzer to monitor the nitrogen level at a wellhead, any portable combustion monitor analyzer that uses gas chromatography and thermal conductivity technology may be used with Method 3C. Other technologies for the measurement of nitrogen may be used in lieu of Method 3C through the administrative alternative test method process outlined in 40 CFR 60.8(b)(2).

Regarding the suggestion to allow ASTM D6522-11 as an alternative to Method 3A, the EPA thanks the commenter for their perspective. As long as all the quality assurance is conducted as required by ASTM D6522-11, then ASTM D6522–11 may be used as an alternative to Method 3A for wellhead monitoring (prior to combustion). Examples of quality assurance required by ASTM D6522-11 include, but are not limited to: analyzers must have a linearity check, interference check, bias check using mid-level gases, stability check, and be calibrated before a test; and a calibration error check and the interference verification must be conducted after the testing has occurred. Due to a different sample matrix typically found in post-combustion gas streams as stated in the applicability of ASTM D6522-11, the interference check must be done on the oxygen measurement with the appropriate gases (e.g., carbon dioxide, VOC mixture, and methane) and concentration ranges. The ASTM D6522–11 method also has calibrations before and calibration checks after testing. According to Methods 3A, 3C, and ASTM D6522-11, the data are valid only when they pass the bias check or zero and upscale calibration error check. The EPA does not believe manufacturers? specifications are rigorous enough to ensure data are of a proper quality.

### 5. More Precise Location Data

The EPA proposed more specific requirements for reporting the locations where measured methane surface emissions are 500 ppm above background (80 FR 52124). Specifically, the EPA proposed to require landfills to report the latitude and longitude coordinates of each SEM exceedance using an instrument with an accuracy of at least 3 meters. This includes surface methane readings above 500 ppm for landfills conducting quarterly SEM with

## Attachment C

U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; Final Rule, 81 Fed. Reg. 59,332 (Aug. 29, 2016) (excerpts)

### ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 60

[EPA-HQ-OAR-2003-0215; FRL-9949-51-OAR]

### RIN 2060-AM08

### Standards of Performance for Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency (EPA). **ACTION:** Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is finalizing a new subpart that updates the Standards of Performance for Municipal Solid Waste Landfills. Under section 111 of the Clean Air Act, the EPA must review, and, if appropriate, revise standards of performance at least every 8 years. The EPA's review of the standards for municipal solid waste landfills considered landfills that commence construction, reconstruction, or modification after July 17, 2014. The final standards also reflect changes to the population of landfills and an analysis of the timing and methods for reducing emissions. This action will achieve additional reductions in emissions of landfill gas and its components, including methane, by lowering the emissions threshold at which a landfill must install controls. This action also incorporates new data and information received in response to the proposed rulemaking and addresses other regulatory issues including surface emissions monitoring, wellhead monitoring, and the definition of landfill gas treatment system.

The new subpart will reduce emissions of landfill gas, which contains both nonmethane organic compounds and methane. Landfills are a significant source of methane, which is a potent greenhouse gas pollutant. These avoided emissions will improve air quality and reduce the potential for public health and welfare effects associated with exposure to landfill gas emissions.

**DATES:** This final rule is effective on October 28, 2016.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of October 28, 2016.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2003-0215. All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some

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information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through http:// www.regulations.gov.

FOR FURTHER INFORMATION CONTACT: For information concerning this final rule, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143–05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541–3154; fax number: (919) 541–0246; email address: ward.hillary@epa.gov.

### SUPPLEMENTARY INFORMATION:

Acronyms and Abbreviations. The following acronyms and abbreviations are used in this document.

- ANPRM Advance notice of proposed rulemaking
- ANSI American National Standards Institute
- BMP Best management practice
- BSER Best system of emission reduction
- Btu British thermal unit
- CAA Clean Air Act
- CA LMR California Landfill Methane Rule
- CBI Confidential business information
- CDX Central Data Exchange
- CEDRI Compliance and Emissions Data Reporting Interface
- CFR Code of Federal Regulations
- $CO_2$  Carbon dioxide
- CO<sub>2</sub>e Carbon dioxide equivalent
- EIA Energy Information Administration
- EPA Environmental Protection Agency
- ERT Electronic Reporting Tool
- FID Flame ionization detector
- GCCS Gas collection and control system
- GHG Greenhouse gas
- GHGRP Greenhouse Gas Reporting Program
- GWP Global warming potential
- HAP Hazardous air pollutant
- HOV Higher operating value
- IAMS Integrated assessment models
- ICR Information collection request
- IPCC Intergovernmental Panel on Climate Change
- IWG Interagency working group
- lb/MMBtu Pounds per million British thermal unit
- LFG Landfill gas
- LFGCost Landfill Gas Energy Cost Model
- m<sup>3</sup> Cubic meters
- Mg Megagram
- Mg/yr Megagram per year
- mph Miles per hour
- MSW Municipal solid waste
- mtCO<sub>2</sub>e Metric tons of carbon dioxide equivalent
- MW Megawatt
- MWh Megawatt hour
- NAICS North American Industry Classification System

- NESHAP National Emission Standards for Hazardous Air Pollutants
- NMOC Nonmethane organic compound
- NRC National Research Council
- NSPS New source performance standards NTTAA National Technology Transfer and Advancement Act
- OAQPS Office of Air Quality Planning and Standards
- OMB Office of Management & Budget
- PM Particulate matter
- PM<sub>2.5</sub> Fine particulate matter
- ppm Parts per million
- RCRA Resource Conservation and Recovery Act
- RD&D Research, development, and demonstration
- RFA Regulatory Flexibility Act
- RIA Regulatory Impact Analysis
- SBAR Small Business Advocacy Review
- SC–CH<sub>4</sub> Social cost of methane
- SC-CO<sub>2</sub> Social cost of carbon dioxide
- SEM Surface emissions monitoring
- SER Small entity representative
- $SO_2$  Sulfur dioxide
- SSM Startup, shutdown, and malfunction
- Tg Teragram
- TTN Technology Transfer Network
- U.S. United States
  - USGCRP U.S. Global Change Research Program
  - VCS Voluntary consensus standard
  - VOC Volatile organic compound
  - WWW World Wide Web

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### **I. Executive Summary**

### A. Purpose of Regulatory Action

This action finalizes changes to the Standards of Performance for Municipal Solid Waste (MSW) Landfills (landfills new source performance standards or landfills NSPS) resulting from the EPA's review of the landfills NSPS under Clean Air Act (CAA) section 111. The EPA's review identified a number of advances in technology and operating practices for reducing emissions of landfill gas (LFG) and the final changes are based on our evaluation of those advances and our understanding of LFG emissions. In order to avoid possible confusion regarding which MSW landfills would actually be subject to these requirements, the EPA is establishing a new subpart XXX (40 CFR part 60, subpart XXX) rather than merely updating the existing subpart WWW (40 CFR part 60, subpart WWW).

The requirements in new subpart XXX apply to MSW landfills for which construction, reconstruction, or modification commenced after July 17, 2014, the date of the proposed rule. The requirements in subpart WWW continue to apply to MSW landfills for which construction, reconstruction, or modification was commenced on or after May 30, 1991 and on or before July 17, 2014. For a discussion of how changes in applicability affect sources currently subject to subparts Cc and WWW, see the proposed Emission Guidelines (80 FR 52110, August 27, 2016).

The resulting changes to the NSPS found in subpart XXX will achieve additional reductions in emissions of LFG and its components, including methane. This final rule is consistent with the President's 2013 Climate Action Plan,<sup>1</sup> which directs federal agencies to focus on "assessing current emissions data, addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions." The final rule is also consistent with the President's Methane Strategy,<sup>2</sup> which directs the EPA's regulatory and voluntary programs to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs. These directives are discussed in detail in section III.A of this preamble. This regulatory action also resolves and clarifies several implementation issues that were previously addressed in amendments proposed on May 23, 2002 (67 FR 36475) and September 8, 2006 (71 FR 53271).

### 1. Need for Regulatory Action

Several factors led to today's final action. First, section 111 of the Clean Air Act (CAA) (42 U.S.C. 7411) requires the EPA to review standards of performance at least every 8 years and, if appropriate, revise the standards to reflect improvements in methods for reducing emissions. Second, a mandatory duty lawsuit was filed against the EPA for failure to review the NSPS by the statutorily required deadline. Under a consent decree resolving that lawsuit, the EPA agreed to

propose a review and take final action on the proposal. Third, the EPA has concluded that landfill owners or operators, as well as regulators, need clarification regarding issues that have arisen during implementation of the existing standards. Implementation issues include the definition of LFG treatment, among other topics. Fourth, landfills are a significant source of methane, a very potent greenhouse gas, for which there are cost-effective means of reduction, so this rule is an important element of the United States' work to reduce emissions that are contributing to climate change.

### 2. Legal Authority

CAA section 111(b)(1)(B) (42 U.S.C. 7411(b)(1)(B)) requires the EPA to "at least every 8 years review and, if appropriate, revise" new source performance standards. CAA section 111(a)(1) (42 U.S.C. 7411(a)(1)) provides that performance standards are to "reflect the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." We refer to this level of control as the best system of emission reduction or "BSER."

As indicated above, the EPA has decided to finalize its review of the landfill NSPS in a new subpart rather than update existing requirements in 40 CFR part 60, subpart WWW. The EPA believes that either approach is legally permissible.<sup>3</sup> The final subpart XXX will appear in 40 CFR part 60 and will apply to landfills that commence construction, reconstruction, or modification after July 17, 2014.

### B. Summary of Major Provisions

The final NSPS apply to landfills that commenced construction, reconstruction, or modification after July 17, 2014 (the date of publication of the proposed NSPS). The final rule provisions are described below.

Thresholds for Installing Controls. The final NSPS retain the current design capacity threshold of 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>), but reduce the nonmethane

<sup>&</sup>lt;sup>1</sup>Executive Office of the President, "The President's Climate Action Plan" June 2013. https:// www.whitehouse.gov/sites/default/files/image/ president27sclimateactionplan.pdf.

<sup>&</sup>lt;sup>2</sup> Executive Office of the President, "Climate Action Plan Strategy to Reduce Methane, March 2014. https://www.whitehouse.gov/sites/default/ files/strategy\_to\_reduce\_methane\_emissions\_2014-03-28\_final.pdf.

<sup>&</sup>lt;sup>3</sup> The EPA believes that it has the legal authority in updating an NSPS to either propose and make changes to the existing subpart or to promulgate a new subpart and has previously done both. In either case, any substantive changes to the NSPS apply only to sources for which construction, reconstruction, or modification commenced on or after the date on which the proposed changes were published in the **Federal Register** (July 17, 2014).

organic compounds (NMOC) emission threshold for the installation and removal of a gas collection and control system (GCCS) from 50 megagrams per year (Mg/yr) to 34 Mg/yr. An MSW landfill that exceeds the design capacity threshold must install and start up a GCCS within 30 months after LFG emissions reach or exceed an NMOC level of 34 Mg/yr. (A megagram is also known as a metric ton, which is equal to 1.1 United States (U.S.) short tons or about 2,205 pounds.) Consistent with the existing NSPS (40 CFR part 60, subpart WWW), the owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

Emission Threshold Determination. The EPA is finalizing an alternative sitespecific emission threshold methodology for when a landfill must install and operate a GCCS. This alternative methodology, referred to as "Tier 4," is based on surface emission monitoring (SEM) and demonstrates whether or not surface emissions are below a specific threshold. The Tier 4 SEM demonstration allows landfills that exceed the threshold using modeled NMOC emission rates using Tier 1 or 2 to demonstrate that actual site-specific surface methane emissions are below the threshold. A landfill that can demonstrate that surface emissions are below 500 parts per million (ppm) for four consecutive quarters does not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded. Landfills that have calculated NMOC emissions of 50 Mg/ yr or greater are not eligible for the Tier 4 emission threshold determination in order to prevent conflicting requirements between subpart XXX and the landfills NESHAP (40 CFR part 63, subpart AAAA). Many landfills that are subject to subpart XXX will also be subject to the landfills NESHAP. The landfills NESHAP requires landfills that exceed the size threshold (2.5 million Mg and 2.5 million m<sup>3</sup>) and exceed the NMOC emissions threshold (50 Mg/yr) to install and operate a GCCS.

Low LFG Producing Areas. The EPA is also finalizing criteria for determining when it is appropriate to cap or remove all or a portion of the GCCS. The final criteria for capping or removing all or a portion of the GCCS are: (1) The landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the calculated NMOC emission rate at the landfill is less than 34 Mg/yr on three successive test dates.

Landfill Gas Treatment. In the final NSPS, the EPA has addressed two issues related to LFG treatment. First, the EPA is clarifying that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but may be used for other beneficial uses such as vehicle fuel, production of high-British thermal unit (Btu) gas for pipeline injection, or use as a raw material in a chemical manufacturing process. Second, the EPA is finalizing the definition of treated landfill gas that applies to LFG processed in a treatment system meeting the requirements in 40 CFR part 60, subpart XXX and defining treatment system as a system that filters, de-waters, and compresses LFG for sale or beneficial use. The definition of treatment system allows the level of treatment to be tailored to the type and design of the specific combustion equipment or the other beneficial uses such as vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical manufacturing process in which the LFG is used. Owners or operators must develop a site-specific treatment system monitoring plan that includes monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated LFG. They also must keep records that demonstrate that such parameters effectively monitor filtration, de-watering, and compression system performance necessary for the end use of the treated LFG.

Wellhead Operational Standards. The EPA is finalizing changes to certain operational standards (i.e., the requirement to meet specific operating limits) for nitrogen/oxygen level at the wellheads. Landfill owners or operators are not required to take corrective action based on exceedances of specified operational standards for nitrogen/ oxygen levels at wellheads, but they must continue to monitor and maintain records of nitrogen/oxygen levels on a monthly basis in order to inform any necessary adjustments to the GCCS and must maintain records of monthly readings. The operational standard, corrective action, and corresponding recordkeeping and reporting remain for temperature and maintaining negative pressure at the wellhead.

*Surface Monitoring.* The EPA is finalizing the requirement to monitor all surface penetrations at landfills. In final 40 CFR part 60, subpart XXX, landfills must conduct SEM at all cover penetrations and openings within the area of the landfill where waste has been placed and a gas collection system is required to be in place and operating according to the operational standards in final 40 CFR part 60, subpart XXX. Specifically, landfill owners or operators must conduct surface monitoring on a quarterly basis at the specified intervals and where visual observations indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations.

Startup, Shutdown, and Malfunction. The EPA is finalizing a requirement that standards of performance in the NSPS apply at all times, including periods of startup, shutdown, and malfunction (SSM). The EPA is also finalizing an alternative standard during SSM events: In the event the collection or control system is not operating, the gas mover system must be shut down and all valves in the collection and control system that could contribute to venting of the gas to the atmosphere must be closed within 1 hour of the collection or control system not operating.

Other Clarifications. The EPA is finalizing a number of clarifications to address several issues that have been raised by landfill owners or operators during implementation of the current NSPS and Emission Guidelines. These clarifications include adding criteria for when an affected source must update its design plan and clarifying when landfill owners or operators must submit requests to extend the timeline for taking corrective action. The EPA is also updating several definitions in the NSPS. In addition, while the EPA is not mandating organics diversion, we are finalizing two specific compliance flexibilities in the NSPS to encourage wider adoption of organics diversion and GCCS Best Management Practices (BMPs) for emission reductions at landfills. These compliance flexibilities are discussed in sections VI.A.1 and VI.A.2 (wellhead monitoring) and section V.B and VI.B (Tier 4 emission threshold determination) of this preamble.

### C. Costs and Benefits

The final NSPS are expected to significantly reduce emissions of LFG and its components, which include methane, volatile organic compounds (VOC), and hazardous air pollutants (HAP). Landfills are a significant source of methane emissions, and in 2014 landfills represented the third largest source of human-related methane emissions in the U.S. This rulemaking applies to landfills that commence construction, modification, or reconstruction after July 17, 2014. In the 5 years following July 17, 2014, the EPA estimates that 14 landfills will commence construction and 123 landfills will modify. Note that landfills are not expected to reconstruct (63 FR 32745, June 16, 1998).

To comply with the emissions limits in the final rule, owners or operators of new or modified MSW landfills are expected to install the least-cost control for collecting and treating or combusting LFG. The annualized net cost for the final NSPS is estimated to be \$6.0 million (2012\$) in 2025, when using a 7 percent discount rate. The annualized costs represent the costs compared to no changes to the current NSPS (i.e., baseline) and include \$11 million to install and operate a GCCS, as well as \$0.08 million to complete the corresponding testing and monitoring. These control costs are offset by \$5.1 million in revenue from electricity sales, which is incorporated into the net control costs for certain landfills that are expected to generate revenue by using the LFG to produce electricity.

Installation of a GCCS to comply with the 34 Mg/yr NMOC emissions threshold at new or modified landfills would achieve reductions of 281 Mg/yr NMOC and 44,300 Mg/yr methane (about 1.1 million metric tons of carbon dioxide equivalent per year (mtCO<sub>2</sub>e/ yr)) beyond the baseline in year 2025. In

addition, the final rule is expected to result in the net reduction of 26,000 Mg- $CO_2$ , due to reduced demand by landfills for electricity from the grid as landfills generate electricity from LFG. The NMOC portion of LFG can contain a variety of air pollutants, including VOC and various organic HAP. VOC emissions are precursors to both fine particulate matter (PM<sub>2.5</sub>) and ozone formation. These pollutants, along with methane, are associated with substantial health effects, welfare effects, and climate effects. The EPA expects that the reduced emissions will result in improvements in air quality and lessen the potential for health effects associated with exposure to air pollution related emissions, and result in climate benefits due to reductions of the methane component of LFG.

The EPA estimates that the final rule's estimated methane emission reductions and secondary  $CO_2$  emission reductions in the year 2025 would yield global monetized climate benefits of \$31 million to approximately \$180 million, depending on the discount rate. Using the mean social cost of methane (SC-CH<sub>4</sub>) and social cost of CO<sub>2</sub> (SC-CO<sub>2</sub>), at a 3-percent discount rate, results in an estimate of about \$68 million in 2025 (2012\$).

The SC-CH<sub>4</sub> and SC-CO<sub>2</sub> are the monetary values of impacts associated with marginal changes in methane and  $CO_2$  emissions, respectively, in a given

### TABLE 1-REGULATED ENTITIES

year. Each metric includes a wide range of anticipated climate impacts, such as net changes in agricultural productivity, property damage from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning.

With the data available, we are not able to provide quantified health benefit estimates for the reduction in exposure to HAP, ozone, and  $PM_{2.5}$  for this rule. This is not to imply that there are no such benefits of the rule; rather, it is a reflection of the difficulties in modeling the direct and indirect impacts of the reductions in emissions for this sector with the data currently available.

Based on the monetized benefits and costs, the annual net benefits of the standards are estimated to be \$62 million (\$2012) in 2025, based on the average SC-CH<sub>4</sub> at a 3 percent discount rate, average SC-CO<sub>2</sub> at a 3 percent discount rate, and costs at a 7 percent discount rate.

### **II. General Information**

### A. Does this action apply to me?

This final rule addresses MSW landfills that are new, reconstructed, or modified after July 17, 2014, and associated solid waste management programs. Potentially affected categories include those listed in Table 1 of this preamble.

Category	NAICS <sup>a</sup>	Examples of affected facilities
Industry: Air and water resource and solid waste management.	924110	Solid waste landfills
Industry: Refuse systems—solid waste landfills State, local, and tribal government agencies	562212 924110	Solid waste landfills Administration of air and water resource and solid waste management programs

<sup>a</sup>North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by the new subpart. To determine whether your facility would be regulated by this action, you should carefully examine the applicability criteria in final 40 CFR 60.760 of subpart XXX. If you have any questions regarding the applicability of the final subpart to a particular entity, contact the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

# B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action

is available through EPA's Technology Transfer Network (TTN) Web site, a forum for information and technology exchange in various areas of air pollution control. Following signature by the EPA Administrator, the EPA will post a copy of this action at *http:// www.epa.gov/ttnatw01/landfill/ landflpg.html*. Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the final rule and key technical documents at this same Web site.

### **III. Background**

On July 17, 2014, the EPA proposed a new NSPS subpart (40 CFR part 60, subpart XXX) based on its ongoing review of the MSW Landfills NSPS (40

CFR part 60, subpart WWW) (79 FR 41796). On August 27, 2015 (80 FR 52162), the EPA issued a supplemental proposal to achieve additional reductions of LFG and its components, including methane, through a lower emission threshold at which MSW landfills must install and operate a GCCS. On August 27, 2015, the EPA issued a concurrent proposal for revised Emission Guidelines for existing MSW Landfills (80 FR 52100). The EPA considered information it received in response to an Advanced Notice of Proposed Rulemaking (ANPRM) for the MSW landfills Emission Guidelines (79 FR 41772) and a Notice of Proposed Rulemaking for existing landfills (80 FR 52100), in addition to the Notice of

Proposed Rulemaking for new landfills (79 FR 41796), in evaluating these final provisions for new sources.

## A. Landfill Gas Emissions and Climate Change

In June 2013, President Obama issued a Climate Action Plan that directed federal agencies to focus on "assessing current emissions data, addressing data gaps, identifying technologies and best practices for reducing emissions, and identifying existing authorities and incentive-based opportunities to reduce methane emissions."<sup>4</sup> Methane is a potent greenhouse gas (GHG) that is 28-36 times greater than carbon dioxide (CO<sub>2</sub>) and has an atmospheric life of about 12 years.<sup>5</sup> Because of methane's potency as a GHG and its atmospheric life, reducing methane emissions is one of the best ways to achieve near-term beneficial impacts in mitigating global climate change.

The "Climate Action Plan: Strategy to Reduce Methane Emissions"<sup>6</sup> (the Methane Strategy) was released in March 2014. The strategy recognized the methane reductions achieved through the EPA's regulatory and voluntary programs to date. It also directed the EPA to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs.

The EPA recognized the climate benefits associated with reducing methane emissions from landfills nearly 25 years ago. The 1991 NSPS Background Information Document <sup>7</sup> asserted that the reduction of methane emissions from MSW landfills was one of many options available to reduce global warming. The NSPS for MSW landfills, promulgated in 1996, also recognized the climate co-benefits of controlling methane (61 FR 9917, March 12, 1996).

<sup>6</sup>Executive Office of the President, "Climate Action Plan Strategy to Reduce Methane", March 2014. https://www.whitehouse.gov/sites/default/ files/strategy\_to\_reduce\_methane\_emissions\_2014-03-28\_final.pdf.

<sup>7</sup> Air Emissions from Municipal Solid Waste Landfills-Background Information for Proposed Standards and Guidelines, U.S. EPA (EPA–450/3– 90–011a) (NTIS PB 91–197061) page 2–15. A recent study assessed EPA regulations and voluntary programs over the period 1993–2013 and found that they were responsible for the reduction of about 130 million metric tons of methane emissions (equal to about 18 percent of the total U.S. methane emissions over that time period), leading to a reduction in atmospheric concentrations of methane of about 28 parts per billion in 2013 <sup>8</sup> (compared to an observed increase in methane concentrations of about 80 ppb over those 20 years).

The review and final revision of the MSW landfills NSPS capitalizes on additional opportunities to achieve methane reductions while acknowledging historical agency perspectives and research on climate, a charge from the President's Climate Action Plan, the Methane Strategy, and improvements in the science surrounding GHG emissions.

LFG is a collection of air pollutants, including methane and NMOC. LFG is typically composed of 50-percent methane, 50-percent  $CO_2$ , and less than 1-percent NMOC by volume. The NMOC portion of LFG can contain various organic HAP and VOC. When the Emission Guidelines and NSPS were promulgated in 1996, NMOC was selected as a surrogate for MSW LFG emissions because NMOC contains the air pollutants that at that time were of most concern due to their adverse effects on health and welfare. Today, methane's effects on climate change are also considered important. In 2014, methane emissions from MSW landfills represented 18.2 percent of total U.S. methane emissions and 1.9 percent of total U.S. GHG emissions (in carbon dioxide equivalent (CO<sub>2</sub>e)).<sup>9</sup> In 2014, MSW landfills continued to be the third largest source of human-related methane emissions in the U.S., releasing an estimated 133.1 million metric tons of CO<sub>2</sub>e.<sup>10</sup> For these reasons and because additional emissions reductions can be achieved at a reasonable cost, the EPA is finalizing changes to the NSPS that

are based on reducing the NMOC and methane components of LFG.

## *B.* What are the public health and welfare effects of landfill gas emissions?

1. Health Effects of VOC and Various Organic HAP

VOC emissions are precursors to both PM<sub>2.5</sub> and ozone formation. As documented in previous analyses (U.S. EPA, 2006,<sup>11</sup> 2010,<sup>12</sup> and 2014<sup>13</sup>), exposure to  $PM_{2.5}$  and ozone is associated with significant public health effects. PM<sub>2.5</sub> is associated with health effects, including premature mortality for adults and infants, cardiovascular morbidity such as heart attacks, and respiratory morbidity such as asthma attacks, acute bronchitis, hospital admissions and emergency room visits, work loss days, restricted activity days and respiratory symptoms, as well as welfare impacts such as visibility impairment.14 Ozone is associated with health effects, including hospital and emergency department visits, school loss days and premature mortality, as well as ecological effects (e.g., injury to vegetation and climate change).<sup>15</sup> Nearly 30 organic HAP have been identified in uncontrolled LFG. including benzene, toluene, ethyl benzene, and vinyl chloride.<sup>16</sup> Benzene is a known human carcinogen.

<sup>12</sup> U.S. EPA. *RIA*. National Ambient Air Quality Standards for Ozone. Office of Air Quality Planning and Standards, Research Triangle Park, NC. January 2010. Available on the Internet at http:// www.epa.gov/ttn/ecas/regdata/RIAs/s1supplemental\_analysis\_full.pdf.

<sup>13</sup> U.S. EPA. *RIA*. National Ambient Air Quality Standards for Ozone. Office of Air Quality Planning and Standards, Research Triangle Park, NC. December 2014. Available on the Internet at http:// www.epa.gov/thecas1/regdata/RIAs/ 20141125ria.pdf.

<sup>14</sup> U.S. EPA. Integrated Science Assessment for Particulate Matter (Final Report). EPA-600-R-08-139F. National Center for Environmental Assessment—RTP Division. December 2009. Available at http://cfpub.epa.gov/ncea/cfm/ recordisplay.cfm?deid=216546.

<sup>15</sup> U.S. EPA. Air Quality Criteria for Ozone and Related Photochemical Oxidants (Final). EPA/600/ R-05/004aF-cF. Washington, DC: U.S. EPA. February 2006. Available on the Internet at http:// cfpub.epa.gov/ncea/CFM/ recordisplay.cfm?deid=149923.

<sup>&</sup>lt;sup>4</sup>Executive Office of the President, "The President's Climate Action Plan" June 2013. https:// www.whitehouse.gov/sites/default/files/image/ president27sclimateactionplan.pdf.

<sup>&</sup>lt;sup>5</sup> The IPCC updates GWP estimates with each new assessment report, and in the latest assessment report, AR5, the latest estimate of the methane GWP ranged from 28–36, compared to a GWP of 25 in AR4. The impacts analysis in this final rule is based on AR4 instead of AR5 (*i.e.*, a GWP of 25) to be consistent with and comparable to key Agency emission quantification programs such as the Inventory of Greenhouse Gas Emissions and Sinks (GHG Inventory), and the GHGRP.

<sup>&</sup>lt;sup>8</sup> Melvin, A.M.; Sarofim, M.C.; Crimmins, A.R., "Climate benefits of U.S. EPA programs and policies that reduced methane emissions 1993– 2013", Environmental Science & Technology, 2016, in press. http://pubs.acs.org/doi/pdf/10.1021/ acs.est.6b00367. DOI 10.1021/acs.est.6b00367.

<sup>&</sup>lt;sup>9</sup> Total U.S. methane emissions were 731 Teragram (Tg) CO<sub>2</sub>e and total U.S. GHG emissions were 6,870.5 Tg in 2014. A teragram is equal to 1 million Mg. (A megagram is also known as a metric ton, which is equal to 1.1 U.S. short tons or about 2,205 pounds.) U.S. EPA "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014." Table ES–2. Available at http://www.epa.gov/ climatechange/ghgemissions/ usinventor/report.html.

<sup>&</sup>lt;sup>10</sup> Ibid, Section 7. Waste, Table 7-3.

<sup>&</sup>lt;sup>11</sup>U.S. EPA. RIA. National Ambient Air Quality Standards for Particulate Matter, Chapter 5. Office of Air Quality Planning and Standards, Research Triangle Park, NC. October 2006. Available on the Internet at http://www.epa.gov/ttn/ecas/regdata/ RIAs/Chapter%205--Benefits.pdf.

<sup>&</sup>lt;sup>16</sup> U.S. EPA. 1998. Office of Air and Radiation, Office of Air Quality Planning and Standards. "Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources, Chapter 2: Solid Waste Disposal, Section 2.4: Municipal Solid Waste Landfills". Available at: http://www.epa.gov/ttn/chief/ap42/ch02/final/ c02s04.pdf.

or existing, *i.e.*, any source other than a new source (CAA section 111(a)(6)). Since the revised NSPS apply to new (and modified or reconstructed) sources, any source that is not subject to subpart XXX will be subject to the revised Emission Guidelines found in 40 CFR part 60, subpart Cf. Any existing MSW landfill that modifies or reconstructs after July 17, 2014 would become a new source subject to the NSPS subpart XXX.

### IV. Summary of the Final NSPS

A. What are the control requirements?

1. Design Capacity and Emissions Thresholds

The revised NSPS retain the current design capacity threshold of 2.5 million Mg and 2.5 million m<sup>3</sup>, but reduce the NMOC emission threshold for the installation and removal of a GCCS from 50 Mg/yr to 34 Mg/yr for landfills that commence construction, reconstruction, or modification after July 17, 2014. An MSW landfill that exceeds the design capacity threshold must install and start up a GCCS within 30 months after LFG emissions reach or exceed an NMOC level of 34 Mg/yr NMOC. The owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

### 2. Tier 4

The current NSPS (40 CFR part 60, subpart WWW) provides that owners or operators determine whether the landfill has exceeded the NMOC emissions threshold using one of three available modeling approaches, known as Tiers 1, 2 and 3. The EPA is finalizing in subpart XXX an additional optional methodology based on site-specific surface methane emissions to determine when a landfill must install and operate a GCCS. This alternative emission threshold methodology, referred to as "Tier 4," is based on SEM and demonstrates that surface methane emissions are below a specific threshold. The Tier 4 SEM demonstration allows certain landfills that exceed modeled NMOC emission rate thresholds using Tier 1 or 2 to demonstrate that site-specific surface methane emissions are below a surface concentration threshold. A landfill that can demonstrate that surface emissions are below 500 ppm for four consecutive quarters does not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded. Owners or operators continue

to keep detailed records of each quarterly monitoring demonstration and must submit a Tier 4 surface emissions report annually. Upon a surface emissions reading of greater than 500 ppm methane, the landfill must submit a GCCS design plan and install and operate a GCCS.

Tier 4 is based on the results of quarterly site-specific methane emissions monitoring of the perimeter of the landfill and entire surface of the landfill along a pattern that traverses the landfill at 30-meter (98-ft) intervals, in addition to monitoring areas where visual observations may indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations. If the landfill opts to use Tier 4 and there is any measured concentration of methane of 500 ppm or greater from the surface of the landfill, the owner or operator must install a GCCS, and the landfill cannot return to Tier 1, 2, or 3 modeling to demonstrate that emissions are below the NMOC threshold.

Tier 4 is allowed only if the landfill owner or operator can demonstrate that NMOC emissions are greater than or equal to 34 Mg/yr, but less than 50 Mg/ yr using Tier 1 or Tier 2. If both Tier 1 and Tier 2 indicate NMOC emissions of 50 Mg/yr or greater, Tier 4 cannot be used (a landfill need not model emissions under Tier 3 before using Tier 4). In order to verify that the landfill is eligible for Tier 4, the EPA is finalizing a provision to require landfill owners or operators that choose to use Tier 4 to continue to conduct Tier 1 and Tier 2 NMOC emission rate calculations and report results in the annual report.

In addition, the EPA is finalizing specific requirements for the use of Tier 4 for emission threshold determinations related to wind speed. Since accurate measurements can be compromised in even moderately windy conditions, the EPA is requiring the owner or operator to use a wind barrier, similar to a funnel or other device, to minimize surface air turbulence when onsite wind speed exceeds the limits in the rule. Thus, when a wind barrier is used, the final rule allows the Tier 4 surface emissions demonstration to proceed when the average on-site wind speed exceeds 4 mph, or gusts exceed 10 mph. Tier 4 measurements cannot be conducted if the average wind speed exceeds 25 mph. Although we are aware of the use of wind barriers in the field, the EPA intends to provide additional guidance on their use. In addition, the owner or operator must take digital photographs of the instrument setup, including the wind barrier. The photographs must be

time and date-stamped and taken at the first sampling location prior to sampling and at the last sampling location after sampling at the end of each sampling day, for the duration of the Tier 4 monitoring demonstration. The owner or operator must maintain those photographs per the recordkeeping requirements. Wind speed must be measured with an on-site anemometer with a continuous recorder and data logger for the entire duration of the monitoring event. The average wind speed must be determined at 5-minute intervals. The gust must be determined at 3-second intervals. Further, when taking surface measurements, the sampling probe must be held no more than 5 centimeters above the landfill surface (e.g., using a mechanical device such as a wheel on a pole).

The EPA is also limiting the use of Tier 4 at landfills with a GCCS installed. In order for a landfill with an operational GCCS to qualify for Tier 4, the GCCS must have operated for at least 75 percent of the 12 months prior to initiating Tier 4 testing. The EPA is finalizing reporting and recordkeeping requirements for the annual operating hours of destruction devices in order to verify that a landfill with a GCCS installed and opting for Tier 4 meets the GCCS criteria for having operated the system.

The EPA is also finalizing reporting and recordkeeping requirements to improve the transparency of SEM testing. To ensure that a GCCS is installed in a timely manner, the EPA is requiring a GCCS to be installed and operated within 30 months of the most recent NMOC emission rate report in which the calculated NMOC emission rate equals or exceeds 34 Mg/yr according to Tier 2, once there is any measured concentration of methane of 500 ppm or greater from the surface of the landfill. To improve the transparency of SEM testing, landfill owners or operators must notify the delegated authority 30 days prior to conducting Tier 4 tests and maintain records of all SEM monitoring data and calibrations.

### 3. Criteria for Removing GCCS

Landfill emissions increase as waste is added to a landfill, but decline over time; as waste decays, a landfill produces less and less methane and other pollutants. In the proposed revisions to the NSPS (79 FR 41811), the EPA requested comment on whether the three criteria for control device removal in 40 CFR part 60, subpart WWW were appropriate for proposed 40 CFR part 60, subpart XXX, and whether alternative criteria such as consecutive

### 2. Corrective Action

In a 1998 Federal Register notice (63 FR 32748, June 16, 1998), the EPA amended the wellhead monitoring provisions of 40 CFR part 60, subpart WWW to allow an alternative timeline for correcting wellhead exceedances to be submitted to the Administrator for approval. The rule change made the wellhead monitoring provisions consistent with the SEM provisions, which allow an alternative remedy and corresponding timeline for correcting an exceedance to be submitted to the Administrator for approval. The EPA noted in the 1998 preamble that any timeline extending more than 120 days must be approved by the regulating agency. Since 1998, questions have been raised about the timing of correcting wellhead exceedances and whether a landfill needs agency approval for corrective action timelines that exceed 15 calendar days but are less than the 120 days allowed for expanding the GCCS.

The EPA clarified in the proposed subpart XXX that, with the exception of system expansion, all corrective actions expected to exceed 15 calendar days should be submitted to the agency for approval of an alternate timeline. Additionally, the EPA proposed that if a landfill owner or operator expects the system expansion to exceed the 120-day allowance period, it should submit a request and justification for an alternative timeline. Further, the EPA solicited comment on extending the requirement for notification from 15 days to as soon as practicable, but no later than 60 days.

The proposed Emission Guidelines noted that the proposed removal of operational standards for nitrogen/ oxygen and temperature would drastically reduce the number of requests for alternative corrective action timelines. However, the requirement to maintain negative pressure at the wellhead remained in the proposal. Therefore, the EPA proposed a timeline for correcting positive pressure, including a requirement to submit an alternative corrective action timeline request to the Administrator if the landfill cannot restore negative pressure within 15 calendar days or the initial failure to maintain negative pressure and the landfill is unable to (or does not plan to) expand the gas collection within 120 days of the initial exceedance.

The EPA explained in the preamble for the 2015 Emission Guidelines proposal that it did not specify a schedule in the proposed rule language by when a landfill would need to submit alternative timeline requests because the EPA determined that investigating and determining the appropriate corrective action, as well as the schedule for implementing corrective action, would be site specific and depend on the reason for the exceedance (80 FR 52126). In addition, the EPA requested comment (80 FR 52126) on an alternative timeline that extends the requirement for notification from 15 days to as soon as practicable, but no later than 60 days from when an exceedance is identified.

*Comment:* The EPA received comments on the proposed changes, including the time allowed for corrective action and for submitting alternative timeline requests for approval by the Administrator. Regarding the timeframe for submitting a request, several state agencies recommended extending the 15-day timeline for a request to be submitted and indicated that 15 days is not sufficient time to evaluate the problem and plan for corrective action, which may often involve construction activities. There were varied opinions from the state agencies on what length of time beyond 15 days is appropriate. Two agencies supported an extension to as soon as practicable but no later than 60 days, while other agencies specified that the request should be submitted within 30 days from the initial exceedance.

Industry representatives from private and publicly owned landfills as well as waste industry consultants opposed the requirement to submit a request for an alternative corrective action timeline within 15 days. The commenters were concerned that 15 days is not enough time to assess the appropriate solution across miles of interconnected piping. In addition, the commenters were concerned that a 15-day time period would increase the paperwork for both the landfill and the reviewing regulatory agency. One commenter indicated that while many repairs can be completed within 60 days, some repairs, especially in cold weather climates, may take longer. One industry commenter suggested that a timeframe of 90 days to complete any adjustments or repairs is appropriate. If the corrections could not be made within 90 days, the commenter stated that the landfill would be prepared to have the system expanded within 120 days.

Industry commenters raised the issue that the timeline for corrective action for

surface exceedances in the current subpart WWW regulations, 40 CFR 60.755(c)(4)(v), allow 120 days to install a new well or other collection device or submit an alternative timeline for another corrective action. These commenters also indicated that the 1998 NSPS amendments modified the corrective action for wellhead parameter exceedances to be consistent with the timeframe allowed for correcting surface exceedances (63 FR 32748, June 16, 1998). The commenters also noted that the 1998 amendments recognized that installation of a new well may not always be the appropriate corrective action for remedying a wellhead exceedance.

Despite the 1998 rule amendments, several of these industry commenters note that interpretation and implementation of the 1998 amendments to 40 CFR 60.755(a)(3) have been inconsistent, with some agencies only requiring the landfill owner or operator to submit requests if the corrective action will take longer than 120 days. Other states have taken the position that any exceedances that cannot be resolved within 15 days must automatically result in a requirement to expand the GCCS. One commenter referenced determinations that required landfills to submit an alternative timeline request within 15 days. One commenter indicated that the original rule never anticipated notification and a request for an alternative compliance timeline within 15 days, while another commenter indicated that the state of Texas requires landfills to submit alternative timelines only if the corrective action requires more than 120 days to complete.

In consideration of the 1998 final rule notice, industry commenters, recommended that EPA require landfill owners or operators to submit an alternative timeline request for approval as soon as practicable and only in circumstances in which a system expansion or alternative corrective action will require more than 120 days to complete. One of the commenters suggested that this approach was consistent with the Petroleum Refineries NSPS (40 CFR part 60, subpart Ja). The commenter noted that while the Landfills NSPS requires special approval to avoid the default corrective action of expanding the GCCS, the Refineries NSPS requires a root cause analysis to identify the appropriate corrective action, without specifying a default approach. The Refineries NSPS requires a root cause analysis and a corrective action analysis for exceedances and requires the facility to implement the corrective action within

submitting requests, an example of regulatory guidance for HOV demonstrations can be found at http://www.epa.ohio.gov/portals/34/document/ guidance/gd\_1002.pdf.

45 days. If the corrective action cannot be completed in 45 days, the refinery must document and record all corrective actions completed to date. For actions not fully completed by day 45, they must develop an implementation schedule, as soon as practicable, for beginning and completing all corrective action.

One commenter provided some ideas for landfills to demonstrate good faith effort to comply with the 120-day corrective action schedule. They suggested the rules clarify that the landfill owner or operator is required to submit a notification to the agency that identifies and describes the diagnosis performed, the results of the diagnosis, identifies the corrective measure or alternative remedy to be implemented and reason(s) why system expansion is not appropriate to correct the exceedance. Under such an approach, corrective measures other than expansion that take 0-60 days to complete from the initial exceedance would not require any notification or approval but they would be documented in the annual compliance report. For corrective actions other than expansion that take longer than 60 days but less than 120 days to complete, the landfill owner or operator would notify the regulatory agency by day 75 from the date of the initial exceedance. This would allow 45 days for the agency to review and comment, and such notification would not require agency approval so as not to delay the site from proceeding with and completing the corrective action, as long as the corrective actions are completed within the 120-day timeframe.

Industry commenters indicated that the timeline for corrective action is affected by other regulations. Two of these commenters noted that any corrective action that involves disturbing the final landfill cover could delay diagnosing the problem. All of these commenters noted that a 60-day timeframe is problematic for landfills affected by the Asbestos NESHAP (40 CFR part 61, subpart M), which requires a 45-day notification prior to disturbing areas that may have asbestos containing material.

*Response:* The EPA is retaining the corrective action requirements for temperature in addition to negative pressure. The EPA recognizes the importance of temperature as a critical indicator of landfill fires and its effect on methanogens. Further, removal of the corrective action requirements for temperature could have the unintended consequence of improper operation of a GCCS, which could lead to a subsurface fire. Due to the important of this

parameter, e-reporting requirements for excessive temperatures have also been established to better assess landfill fires.<sup>39</sup>

After carefully considering the comments received and evaluating the available data, the EPA is finalizing corrective action requirements that generally give owners or operators 60 days to investigate and determine the appropriate corrective action and then implement that action. The EPA has retained the requirements for temperature and positive pressure, in that if positive pressure or temperature exceedances exist, action must be initiated to correct the exceedances within 5 calendar days. This requirement has been retained to ensure the landfill takes prompt action to ensure the GCCS remains well-operated. The EPA recognizes, however, that the appropriate corrective action, as well as a schedule to implement it, is sitespecific and depends on the reason for the exceedance. Therefore, for corrective action that takes longer than 60 days after the initial exceedance to implement, the EPA is providing flexibility for the landfill to determine the appropriate course of action based on a root cause analysis. Specifically, if the owner or operator cannot achieve negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) at the GCCS wellhead within 15 days, then the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after positive pressure or temperature above 55 degrees Celsius (131 degrees Fahrenheit) was first measured. An implementation schedule is required for exceedances that take longer than 60 days to correct. A root cause analysis is an assessment conducted through a process of investigation to determine the primary cause(s), and any other contributing cause(s), of positive pressure at a wellhead or temperature above 55 degrees Celsius (131 degrees Fahrenheit). The root cause analysis and documentation of the corrective action taken to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) must be kept on site as a record, but they do not have to be submitted or approved.

If negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) cannot be achieved within 60 days, then the owner or operator must develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the positive pressure or temperature reading. The implementation schedule, root cause analysis, and documentation of the corrective action taken to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit) must be submitted in the facility's next annual report, but these items do not have to be approved.

If the exceedance cannot be corrected (or is not expected to be corrected) within 120 days, then the owner or operator must submit the root cause analysis, plan for corrective action to restore negative pressure or temperature of 55 degrees Celsius (131 degrees Fahrenheit), and the corresponding implementation timeline to the Administrator. The Administrator must approve the plan for corrective action and the corresponding timeline. The owner or operator must submit the proposed corrective action and timeline to the Administrator for approval as soon as practicable but no later than 75 days after the initial exceedance. Requiring approval by the regulatory agency for corrective action timelines that extend beyond 120 days is consistent with the corrective action timeline for surface emissions in 40 CFR 60.765(c)(4)(v). This approach also prevents the landfill owner or operator from delaying submittals for corrective action requests until day 120. Once the negative pressure has been restored, the facility must document the corrective actions taken in the facility's next annual report.

For the corrective action required to address positive pressure, the owner or operator must keep a record of the root cause analysis conducted, including a description of the recommended corrective action(s); the date for corrective action(s) already completed following the positive pressure reading; and for action(s) not already completed within 60 days of the initial positive pressure reading, a schedule for implementation, including proposed commencement and completion dates. For corrective actions taking longer than 60 days to correct the exceedance, the owner or operator would also include in the annual report the root cause analysis, recommended corrective action(s), date corrective actions were completed, and schedule for implementing corrective actions. The owner or operator must also notify the Administrator within 75 days. For corrective actions that take longer than 120 days to correct the exceedance, the

<sup>&</sup>lt;sup>39</sup> The need to rely on temperature in addition to pressure is also illustrated in the report titled Subsurface Heating Events at Solid Waste and Construction and Demolition Debris Landfills: Best Management Practices at http://www.epa.ohio.gov/ portals/34/document/guidance/subsurface%20 heating%20events.1009.pdf.

owner or operator would include, in a separate notification submitted to the Administrator for approval as soon as practicable, but no later than 75 days after the initial positive pressure reading, the root cause analysis, recommended corrective action(s), date corrective actions taken to date were completed, and proposed schedule for implementing corrective actions.

### 3. Landfills Recirculating Leachate or Adding Other Liquids

In the 2014 ANPRM and 2015 proposed Emission Guidelines, the EPA solicited input on whether additional action should be taken to address emissions from wet landfills (i.e., landfills that recirculate leachate or add liquids). Commenters differed on whether the EPA should require separate thresholds or different lag times for landfills that recirculate leachate or add liquids. (The lag time is the time period between when the landfill exceeds the emission rate threshold and when controls are required to be installed and started up.) Commenters supported more environmentally protective requirements for wet landfills and asserted that wet landfills produce more methane but actually collect less. Commenters stated that the EPA should shorten the lag time for installing controls. Other commenters opposed separate requirements for wet landfills and contended that additional requirements for wet landfills would achieve minimal emission reductions and would result in a significant additional burden for landfills that recirculate leachate. One commenter said that the EPA should focus on potential emission reductions at landfills that recirculate leachate.

Commenters also differed on what methane generation rate (k-value) should be used in the landfills NSPS for wet landfills. One commenter indicated that they have previously provided several studies on k-values for wet landfills to EPA and urged the EPA to update the emission factors for wet landfills based on this literature prior to adjusting the control requirements at landfills recirculating leachate or adding other liquids. Another commenter asked the EPA to use higher, more representative k-values, or perhaps a sensitivity analysis for a range of kvalues to estimate the impacts of controlling emissions from wet landfills in the landfills NSPS.

Based on the diverse nature of the feedback provided and several other outstanding EPA actions affecting the control requirements and emission factors for wet landfills, the EPA is not

creating separate emission threshold or lag time requirements for wet landfills in this action. Instead, the EPA believes it is appropriate to further assess emissions from wet landfills prior to taking additional action on control requirements or changes to the k-values. As a result, the EPA is finalizing additional electronic reporting requirements for wet landfills with a design capacity of 2.5 million Mg or greater to inform potential future action on wet landfills. The final rule is limiting reporting of this additional data to wet landfills that meet the current size threshold of 2.5 million Mg of design capacity to be consistent with the universe of landfills that are affected by the rule.

Specifically, the final NSPS requires annual electronic reporting of the volume of leachate recirculated (gallons per year) and the volume of other liquids added (gallons per year), as well as the surface area over which the leachate is recirculated (or sprayed), and the surface area (acres) over which any leachate or liquids are applied. The quantity of leachate recirculated or liquids added should be based on company records or engineering estimates. The initial report will collect historical data for the 10 years preceding the initial annual reporting year, to the extent the data are available in on-site records, along with data corresponding to the initial reporting year. After the initial report, the other annual electronic reports will include only the quantities of leachate recirculated and/or added liquid and their corresponding surface areas for each the subsequent reporting year. The EPA believes many landfills, especially those operating with a Research, Development, and Demonstration (RD&D) permit, already keep records and may submit reports containing quantities of liquids added. So, the effort to track these additional data is expected to be minimal. RD&D permits are issued through Resource Conservation and Recovery Act (RCRA) subtitle D part 258 regulations for MSW landfills. The EPA is also aware of some state rules that require reporting of leachate or added liquids outside of the Clean Air Act reporting requirements. Consolidating these data in an electronic format in a central repository can help inform how leachate or added liquids affect LFG generation and collection whether air emission standards should be adjusted for wet landfills.

The EPA is also requiring the landfill to report the total waste disposed (Mg) in the area with recirculated leachate and/or added liquids, as well as the annual waste acceptance rates (Mg/yr) in those same areas. Recognizing that the waste quantities may be tracked at the scale house entry to the landfill and not the specific cell where the liquids are added, the EPA is allowing the landfill to report data based on on-site records or engineering estimates.

The EPA is allowing owners or operators of landfills to discontinue annual reporting of the wet landfill report after the landfill has submitted its closure report recognizing that this information would be difficult to obtain after the landfill closed, these landfills are unlikely to still be adding liquids if closed, and also because the gas generation from these landfills are on the downward side of their gas generation curve.

The EPA is also aware of annual LFG collected and annual LFG generation data electronically reported to 40 CFR part 98, subpart HH of the GHGRP and therefore the EPA is not requesting reporting of these data in this rule to avoid duplicative requests. However, the EPA may link the wet landfill practices data collected under the landfills NSPS with the annual gas collected data under subpart HH in order to inform how liquids addition affects LFG emissions. Similarly, the EPA understands that precipitation may affect gas generation. However, since precipitation data are readily available through the National Weather Service, the EPA is not requiring reporting of this parameter. Instead, the EPA will use existing electronic data already available to link up with data collected under this final rule. These additional data will be used to assess the appropriateness of potential future action on wet areas of landfills.

The Paperwork Reduction Act (PRA) requires each federal agency to obtain OMB approval before undertaking a collection of information directed to 10 or more people. The PRA applies whether a "collection of information is mandatory, voluntary, or required to obtain or retain a benefit." The EPA believes the additional data on wet landfills will be beneficial for evaluating whether separate thresholds for wet landfills are appropriate when revising future MSW landfill standards. Because the EPA understands that many of the data elements in the wet landfill report, including quantities of leachate or other liquids added and the surface areas over which those liquids are added are tracked at a state level as part of a leachate management or RD&D permit, the EPA does not anticipate these data. Additionally, the EPA is allowing landfill owners or operators to report the data elements in the wet landfill

monitoring report using either engineering estimates or on-site records to minimize the burden on respondents, depending on the types of records the landfill owner/operator may keep.

This is a new rule and a new collections submitted to OMB under EPA ICR number 2498.03. This collection is similar to collections for subpart WWW. Thus, many of the line item burden estimates in this ICR estimate are the same as the burdens submitted to OMB under ICR number 1557.09 for the most recent ICR renewal for subpart WWW.

### 4. Portable Analyzers

Commenters on the proposed NSPS (79 FR 41796) requested that the EPA specify that portable gas composition analyzers are an acceptable alternative to Methods 3A or 3C, and noted that these devices are commonly used in practice to measure wellhead parameters and are calibrated according to the manufacturer's specifications. Currently, approvals of these analyzers are done on a case-by-case basis. Therefore, in the preamble for the proposed revisions of the Emission Guidelines (80 FR 52141), the EPA requested data or information on using a portable gas composition analyzer according to Method 3A for wellhead monitoring. The EPA also requested data on other reference methods used for calibrating these analyzers.

Comment: Many commenters supported the use of portable gas composition analyzers and requested that the EPA specify that these analyzers may be used as an approved alternative monitoring method for well monitoring. Three state agencies indicated the use of the portable analyzers is common practice. One of these agencies stated that Method 3A and Method 3C are designed to be used in "quasi-CEMS" and/or "laboratory benchtop" situations and most landfill operators are not using this type of equipment to test wellhead LFG; instead, landfill operators are using handheld-size portable analyzers. Another state agency stated that portable gas composition analyzers (e.g., Landtec GEM 2000) are a standard for conducting MSW landfill well monitoring and the analyzers provide additional information on gas composition than what the current Emission Guidelines require, which provides operators with a better understanding of the condition of the landfill. This commenter said that a primary advantage of portable gas composition analyzers, for both landfills and regulators, is that these devices take and record the monitored readings (as well as other information on gas

composition that is not required to be monitored in the Emission Guidelines), which can then be downloaded into a spreadsheet and prevent landfills from making data collection mistakes. The commenter suggested that the EPA and state air pollution control agencies would benefit if the EPA were to require landfills to submit, in their semi-annual reports, all of the monitoring data recorded by portable gas composition analyzers.

One commenter stated that most portable gas composition analyzers can be used to measure the oxygen level at the wellhead and can be calibrated according to Method 3A, but are unlikely to be calibrated according to Method 3C (to measure oxygen or nitrogen levels) because such calibration requires the use of gas chromatograph equipment with a thermal conductivity detector and integrator. The commenter said that Method 3A is straightforward and does not specify a particular technology. Several commenters specifically referenced the comments from an equipment manufacturer, which provided specific details on how its Landtec GEM Series portable analyzers are able to comply with each specific requirement in Method 3A, including the calibration requirements. Two of these commenters said that portable gas composition analyzers should be allowed in both the Emissions Guidelines and NSPS. Another of these commenters requested that the EPA add language to the rule to recognize that balance gas is commonly used as a surrogate for nitrogen.

With regard to the EPA's request for data on other reference methods used for calibrating portable gas composition analyzers, one commenter suggested that the EPA allow ASTM D6522 as an alternative to Method 3A because an analyzer can easily be calibrated for oxygen alone following ASTM D6522. The commenter stated that although the QA/QC procedures in ASTM D6522 are different from Method 3A, they are just as rigorous as Method 3A. The commenter stated that it has extensive data available showing portable gas composition analyzers are routinely calibrated according to ASTM Method D6522 for measuring NOx, CO, and oxygen during engine testing. This commenter also stated that any analyzer or device must be calibrated according to an EPA approved method and not just manufacturer's specifications.

*Response:* The EPA appreciates the commenters providing information regarding the use of portable gas composition analyzers for landfill monitoring. Commenters provided data showing that their portable gas

composition analyzers are used to monitor the oxygen level at a wellhead and are capable of meeting the calibration requirements in Method 3A. Therefore, in today's action, we are clarifying the use of portable gas composition analyzers with Method 3A. A portable gas composition analyzer may be used to monitor the oxygen level at a wellhead provided that the portable analyzer is calibrated and meets all QA/ QC according to Method 3A. Although we did not receive enough information regarding calibration methods that could be used on a portable gas composition analyzer to monitor the nitrogen level at a wellhead, any portable combustion monitor analyzer that uses gas chromatography and thermal conductivity technology may be used with Method 3C. Other technologies for the measurement of nitrogen may be used in lieu of Method 3C through the administrative alternative test method process outlined in 40 CFR 60.8(b)(2).

Regarding the suggestion to allow ASTM D6522-11 as an alternative to Method 3A, the EPA thanks the commenter for their perspective. As long as all the quality assurance is conducted as required by ASTM D6522-11, then ASTM D6522-11 may be used as an alternative to Method 3A for wellhead monitoring (prior to combustion). Examples of quality assurance required by ASTM D6522-11 include, but are not limited to: Analyzers must have a linearity check, interference check, bias check using mid-level gases, stability check, and be calibrated before a test; and a calibration error check and the interference verification must be conducted after the testing has occurred. Due to a different sample matrix typically found in postcombustion gas streams as stated in the applicability of ASTM D6522-11, the interference check must be done on the oxygen measurement with the appropriate gases (e.g., carbon dioxide, VOC mixture, and methane) and concentration ranges. The ASTM D6522–11 method also has calibrations before and calibration checks after testing. According to Methods 3A, 3C, and ASTM D6522-11, the data are valid only when they pass the bias check or zero and upscale calibration error check. The EPA does not believe manufacturers' specifications are rigorous enough to ensure data are of a proper quality.

### 5. More Precise Location Data

The EPA proposed more specific requirements for reporting the locations where measured methane surface emissions are 500 ppm above

### (Page 65 of Total)

## Attachment D

U.S. EPA, Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills; Final Rule and Guideline, 61 Fed. Reg. 9,905 (Mar. 12, 1996) (excerpts)

§706.2 Certifications of the Secretary of the Navy under Executive Order 11964 and 33 U.S.C. 1605.

\* \* \* \*

TABLE FIVE After masthead Masthead Forward light less lights not than 1/2 masthead over all light not Percentage ship's other length aft in forward horizontal lights and Vessel No. quarter of of forseparation obstrucship. ward attained tions. annex I masthead annex I, sec. 3(a) light. sec. 2(f) annex I, sec. 3(a) 20.4 USS PAUL HAMILTON ..... DDG 60 Х Х Х

Dated: February 25, 1996.

### R. R. Pixa,

Captain, JAGC, U.S. Navy, Deputy Assistant Judge Advocate General (Admiralty). [FR Doc. 96–5837 Filed 3–11–96; 8:45 am] BILLING CODE 3810–FF–P

### ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 51, 52, and 60

[AD-FRL-5437-8]

RIN 2060-AC42

### Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency (EPA). **ACTION:** Final rule and guideline.

**SUMMARY:** This action adds subparts WWW and Cc to 40 CFR part 60 by promulgating standards of performance for new municipal solid waste landfills and emission guidelines for existing municipal solid waste landfills. This action also adds the source category "municipal solid waste landfills" to the priority list in 40 CFR Part 60, § 60.16, for regulation under section 111 of the Clean Air Act. These standards and emission guidelines implement section 111 of the Clean Air Act and are based on the Administrator's determination that municipal solid waste landfills cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. The emissions of concern are non-methane organic compounds

(NMOC) and methane. NMOC include volatile organic compounds (VOC), hazardous air pollutants (HAPs), and odorous compounds. VOC emissions contribute to ozone formation which can result in adverse effects to human health and vegetation. Ozone can penetrate into different regions of the respiratory tract and be absorbed through the respiratory system. The health effects of exposure to HAPs can include cancer, respiratory irritation, and damage to the nervous system. Methane emissions contribute to global climate change and can result in fires or explosions when they accumulate in structures on or off the landfill site. The intended effect of the standards and guidelines is to require certain municipal solid waste landfills to control emissions to the level achievable by the best demonstrated system of continuous emission reduction, considering costs, nonair quality health, and environmental and energy impacts. **EFFECTIVE DATE:** Effective on March 12, 1996.

ADDRESSES: Background Information Document. The background information document for the promulgated standards may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone number (919) 541-2777. Please refer to "Air Emissions from Municipal Solid Waste Landfills—Background Information for Final Standards and Emission Guidelines," EPA-453/R-94-021. The Background Information Document contains: (1) A summary of all the public comments made on the proposed standards and the Notice of Data Availability as well as the Administrator's response to these

comments, (2) a summary of the changes made to the standards since proposal, and (3) the final Environmental Impact Statement, which summarizes the impacts of the standards.

*Docket.* Docket No. A–88–09, containing supporting information used in developing the promulgated standards, is available for public inspection and copying between 8:00 a.m. and 4:00 p.m., Monday through Friday, except for Federal holidays at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (MC-6102), 401 M Street SW., Washington, DC 20460 [phone: (202) 260-7548]. The docket is located at the above address in Room M-1500, Waterside Mall (ground floor). A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: For information on the regulation of municipal solid waste landfills, contact Ms. Martha Smith, Waste and Chemical Processes Group, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–2421.

### SUPPLEMENTARY INFORMATION:

### **Judicial Review**

Under section 307(b)(1) of the Clean Air Act, judicial review of the actions taken by this notice is available *only* by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Clean Air Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

The following outline is provided to aid in locating information in the introductory text (preamble) to the final standards.

- I. Acronyms, Abbreviations, and
  - Measurement Units
  - A. Acronyms
  - B. Abbreviations and Measurement Units
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  - Developing the Standards and Emission Guidelines
  - A. Purpose of the Regulation
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- Guidelines, and Methods V. Impacts of the Standards and Emission Guidelines

  - A. Environmental Impacts
- B. Cost and Economic Impacts
- VI. Significant Changes to the Proposed Standards and Emission Guidelines A. Design Capacity Exemption
  - B. Emission Rate Cutoff
  - C. Collection System Design Specifications
  - D. Timing for Well Placement
  - E. Operational Standards
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  - G. Model Default Values
- VII. Permitting
  - A. New Source Review Permits
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- VIII. Administrative Requirements A. Docket
  - B. Paperwork Reduction Act
  - C. Executive Order 12866
  - D. Executive Order 12875
  - E. Unfunded Mandate Reform Act
  - F. Regulatory Flexibility Act
  - G. Miscellaneous

### I. Acronyms, Abbreviations, and **Measurement Units**

The following definitions, acronyms, and measurement units are provided to clarify the preamble to the final rule.

### A. Acronyms

- BDT—best demonstrated technology BID—background information document CAA—Clean Air Act CERCLA—Comprehensive Environmental Response, Compensation, and Liability Act EG—emission guideline(s) EPA—Environmental Protection Agency FR—Federal Register HAP—hazardous air pollutant LFG—landfill gas MSW-municipal solid waste NMOC—nonmethane organic compounds NPV—net present value
- NSPS—new source performance
- standards

- NSR—new source review
- OMB—Office of Management and Budget
- PSD—prevention of significant deterioration
- RCRA—Resource Conservation and Recovery Act
- VOC-volatile organic compound(s)
- B. Abbreviations and Measurement Units
- J/scm—joules per standard cubic meter

m-meter

- Mg—megagram mm—millimeter
- ppm—parts per million
- ppmv—parts per million by volume
- tpy-tons per year

vr—vear

- C. Conversion Factors and Commonly Used Units
- 1 meter = 3.2808 feet
- 1 megagram = 1.1023 tons = 2204.6pounds
- 1 cubic meter = 35.288 cubic feet = 1.3069 cubic yards
- 1 cubic meter = 0.0008101 acre-feet

Degrees Celsius = (degrees Fahrenheit -32)/1.8

### **II. Background**

The United States Environmental Protection Agency (EPA) originally considered regulating MSW landfill emissions under a RCRA subtitle D rulemaking. However, the Administrator decided to regulate MSW landfill emissions under the authority of the CAA, and announced the decision in the Federal Register on August 30, 1988 (53 FR 33314). The EPA decided to propose regulation of new MSW landfills under section 111(b) of the CAA and to propose EG for existing MSW landfills under section 111(d).

The EPA published a proposal of this NSPS and EG in the **Federal Register** on May 30, 1991 (56 FR 24468).

Following the receipt of new data and changes in the modeling techniques, the EPA published a Notice of Data Availability in the Federal Register on June 21, 1993 (56 FR 33790).

Under the authority of section 111(b)(1)(A) of the CAA, today's notice adds the source category MSW landfills to the priority list in 40 CFR 60.16 because, in the judgement of the Administrator, it contributes significantly to air pollution which may reasonably be anticipated to endanger public health and welfare. Further rationale for this finding is contained in section 1.1.1 of the promulgation BID (EPA-453/R-94-021).

Today's notice promulgates the final NSPS and EG for MSW landfills. The promulgation BID "Air Emissions from Municipal Solid Waste Landfills-Background Information for Final Standards and Guidelines'' (EPA 453/R-94-021) summarizes all public comments on the proposed NSPS and EG and the EPA responses. For further discussion of stakeholder and public involvement in the development of the rules see section III.C. of this preamble.

Recent information suggests that mercury might be emitted from landfills. The EPA is still looking at the possibility and will take action as appropriate in the future under the landfill national emission standards for hazardous air pollutants.

### **III. Summary of Considerations in Developing the Standards and Emission** Guidelines

#### A. Purpose of the Regulation

Landfill gas emissions contain methane, carbon dioxide, and more than 100 different NMOC, such as vinvl chloride, toluene, and benzene. Studies indicate that MSW landfill gas emissions can at certain levels have adverse effects on both public health and welfare. The EPA presented concerns with the health and welfare effects of landfill gases in the preamble to the proposed regulations (56 FR 24468)

Briefly, specific health and welfare effects from LFG emissions are as follows: NMOC contribute to ozone formation; some NMOC are known or suspected carcinogens, or cause other noncancer health effects; NMOC can cause an odor nuisance; methane emissions present a well-documented danger of fire and explosion on-site and off-site, and contribute to global climate change as a major greenhouse gas. Today's rules will serve to significantly reduce these potential problems associated with LFG emissions.

### B. Technical Basis of the Regulation

Today's regulations are based on extensive data analysis and consideration of several alternatives. Prior to proposal, the EPA developed an extensive data base, using survey information from approximately 1,200 landfills, along with emissions information from literature, State and local agencies, and industry test reports. The preamble to the proposed regulations presented a detailed discussion of the data used to develop the rule and the regulatory alternatives considered (56 FR 24476).

After proposal, the EPA continued to gather new information and received new data through public comments. The EPA published this new information in a Notice of Data Availability on June 21, 1993 (56 FR 33790). In addition to

public comments, the EPA held consultations with industry under the authority of Executive Order 12875 (See section VIII of this document for a detailed discussion of the Executive Order).

Based on the new information, the EPA re-assessed the impacts of the alternatives and made changes to the final regulation. The most significant changes to the regulation are summarized in section VI of this preamble. Detailed rationales for these changes as well as more minor changes are provided in the final BID (EPA 453/ R-94-021).

In keeping with the EPA's common sense initiative, several of the changes were made to streamline the rule and to provide flexibility. Examples of this streamlining and increased flexibility include focusing control on the largest landfills, removing the gas collection system prescriptive design specifications, and more reasonable timing for the installation of collection wells. All of these changes are discussed further in section VI of this preamble.

### C. Stakeholders and Public Involvement

Prior to proposal, in accordance with section 117 of the CAA, the EPA had consultations with appropriate advisory committees, independent experts, Federal departments and agencies. In addition, numerous discussions were held with industry representatives and trade associations.

After proposal, the EPA provided interested persons the opportunity to comment at a public hearing and through a written comment period. Comment letters were received from 60 commenters including industry representatives, governmental entities, environmental groups, and private citizens. A public hearing was held in Research Triangle Park, North Carolina, on July 2, 1991. This hearing was open to the public and five persons presented oral testimony on the proposed NSPS and EG.

On June 21, 1993, a supplemental notice of data availability to the May 30, 1991 proposal appeared in the **Federal Register** (58 FR 33790). The notice announced the availability of additional data and information on changes in the EPA's modelling methodology being used in the development of the final NSPS and EG for MSW landfills. Public comments were requested on the new data and comment letters were received from seven commenters.

Since the Notice of Data Availability, the EPA has held several consultations with State, local, and industry representatives in accordance with the October 26, 1993 Executive Order 12875

### on Enhancing the Intergovernmental Partnership.

Major concerns expressed by participants in the consultations were identified by the EPA. These concerns included: the design capacity exemption level, collection system design and monitoring flexibility, and timing of well placement. These concerns and others raised at proposal and clarified in the consultations were addressed by revising the rule as described in section VI of this preamble.

### IV. Summary of the Standards, Emission Guidelines, and Methods

The affected facility under the NSPS is each new MSW landfill. MSW landfills are also subject to the requirements of RCRA (40 CFR 257 and 258). A new MSW landfill is a landfill for which construction, modification, or reconstruction commences on or after the proposal date of May 30, 1991 or that began accepting waste on or after that date.

The EG require control for certain existing MSW landfills. An existing MSW landfill is a landfill for which construction commenced prior to May 30, 1991. An existing MSW landfill may be active, i.e., currently accepting waste, or have additional capacity available to accept waste, or may be closed, i.e., no longer accepting waste nor having available capacity for future waste deposition. The designated facility under the EG is each existing MSW landfill that has accepted waste since November 8, 1987.

The final rules (both the NSPS and EG) require affected and designated MSW landfills having design capacities below 2.5 million Mg or 2.5 million cubic meters to file a design capacity report. Affected and designated MSW landfills having design capacities greater than or equal to 2.5 million Mg or 2.5 million cubic meters are subject to the additional provisions of the standards or EG.

The final standards and EG for MSW landfill emissions require the periodic calculation of the annual NMOC emission rate at each affected or designated facility with a maximum design capacity greater than or equal to 2.5 million Mg or 2.5 million cubic meters. Those that emit more than 50 Mg/yr are required to install controls.

The final rules provide a tier system for calculating whether the NMOC emission rate is less than or greater than 50 Mg/yr, using a first order decomposition rate equation. The tier system does not need to be used to model the emission rate if an owner or operator has or intends to install controls that would achieve compliance. Chapter 1 of the promulgation BID (EPA 453/R–94–021) presents a complete discussion of the components of the tier system.

The BDT for both the NSPS and the EG requires the reduction of MSW landfill emissions from new and existing MSW landfills emitting 50 Mg/ yr of NMOC or more with: (1) A welldesigned and well-operated gas collection system and (2) a control device capable of reducing NMOC in the collected gas by 98 weight-percent.

A well-designed and well-operated collection system would, at a minimum: (1) Be capable of handling the maximum expected gas generation rate; (2) have a design capable of monitoring and adjusting the operation of the system; and (3) be able to collect gas effectively from all areas of the landfill that warrant control. Over time, new areas of the landfill will require control, so collection systems should be designed to allow expansion by the addition of further collection system components to collect gas, or separate collections systems will need to be installed as the new areas require control.

The BDT control device is a combustion device capable of reducing NMOC emissions by 98 weight-percent. While energy recovery is strongly recommended, the cost analysis is based on open flares because they are applicable to all affected and designated facilities regulated by the standards and EG. If an owner or operator uses an enclosed combustor, the device must demonstrate either 98-percent NMOC reduction or an outlet NMOC concentration of 20 ppmv or less. Alternatively, the collected gas may be treated for subsequent sale or use, provided that all emissions from any atmospheric vent from the treatment system are routed to a control device meeting either specification above.

The standards and EG require that three conditions be met prior to capping or removal of the collection and control system: (1) The landfill must be permanently closed under the requirements of 40 CFR 258.60; (2) the collection and control system must have been in continuous operation a minimum of 15 years; and (3) the annual NMOC emission rate routed to the control device must be less than the emission rate cutoff on three successive dates, between 90 and 180 days apart, based upon the site-specific landfill gas flow rate and average NMOC concentration.

Section VI.E. of this preamble describes a new section of the NSPS, § 60.753, "Operational Standards for Collection and Control Systems." The EG also refer to this section. The provisions in this section include: (1) Collection of gas from each area, cell or group of cells in which non-asbestos degradable solid waste has been placed for a period of 5 years or more for active areas or 2 years or more for closed areas; (2) operation of the collection system with each wellhead under negative pressure, with a nitrogen level less than or equal to 20 percent (revised from 1 percent in the proposal, based on public comments) or an oxygen level less than or equal to 5 percent (a new provision); (3) operation with a landfill gas temperature less than 55 °C (a new provision) at each well transporting the collected gases to a treatment or control device designed and operated in compliance with § 60.752(b)(2)(iii) of the NSPS and operated at all times when the collected gas is vented to it; and (4) a requirement that the collection system be operated to limit the surface methane concentration to 500 ppm or less over the landfill as determined according to a specified monitoring pattern.

Owners and operators must determine compliance with the standards for the collection systems and control devices according to § 60.755. Changes made to the final compliance determination and monitoring procedures as a result of comments are discussed in detail in the BID (EPA 453/R–94–021). The §§ 60.757 and 60.758 of the NSPS and § 60.35(c) of the EG contain recordkeeping and reporting requirements. Changes have been made to the recordkeeping and reporting requirements to allow for consistency with the final compliance requirements.

## V. Impacts of the Standards and Emission Guidelines

## A. Environmental Impacts of Promulgated Action

The estimated environmental impacts have changed somewhat from those presented in the preamble to the proposed regulations as a result of changes in the final rules and changes in the estimation methodology. These changes were made in response to public comments. Additional data were also incorporated and are described in the supplemental Notice of Data Availability (56 FR 33790). The analysis of environmental impacts presented in this document, along with the proposal and promulgation BID's, and memoranda in the docket constitute the Environmental Impact Statement for the final standards and guidelines.

For most NSPS, emission reductions and costs are expressed in annual terms. In the case of the NSPS and EG for landfills, the final regulations require controls at a given landfill only after the increasing NMOC emission rate reaches the level of the regulatory cutoff. The controls are applied when the emissions exceed the threshold, and they must remain in place until the emissions drop below the cutoff. However, this process could take as long as 50 to 100 hundred years for some landfills. During the control period, costs and emission reductions will vary from year to year. Therefore, the annualized numbers for any impact will change from year to

year. Because of the variability of emission reductions and costs of the final standards and EG over time, the EPA judged that the NPV of an impact is a more valuable tool in the decision process for landfills and has used NPV in the development of both the proposal and final nationwide impacts. The NPV is computed by discounting the capital and operating costs and emission reductions that will be incurred throughout the control periods to arrive at a measure of their current value. In this way, the NPV accounts for the unique emission patterns of landfills when evaluating nationwide costs and benefits over different discrete time periods for individual sources. Thus, the impacts presented include both annualized estimates and estimates expressed in terms of NPV in 1992.

### 1. Air Emissions

The methodology for estimating the impacts of the NSPS and EG is discussed in the proposal BID and in memoranda in the docket. The analysis of impacts for the NSPS is based on new landfills (beginning construction after May 30, 1991) that are projected to begin accepting waste over the first 5 years of the standards. The NPV of the emission reduction achieved by the final standards is estimated to be 79,300 Mg, which reflects a 50 percent reduction from the NPV of the baseline emissions of 160,000 Mg. Substantial reduction of methane emissions is also achieved. Table 1 presents the emission reductions of the final NSPS in annualized values as well as NPV.

TABLE 1.—SUMMARY OF EMISSION REDUCTION AND COST IMPACTS FOR THE NSPS

	NPV	Annualized
Baseline NMOC Emissions a (Mg)	160,000 79,300 50% 10,600,000 3,890,000 37% 97	13,400 4,860 36% 899,000 193,000 21% 4

<sup>a</sup> In the absence of an NSPS. This does not include landfills closed prior to November 8, 1987.

<sup>b</sup> This does not enclude landfills expected to undertake profitable energy recovery.

For existing landfills, the NPV of the NMOC emission reduction achieved by the final EG is estimated to be 1.1 million Mg, or a 53 percent reduction from a baseline of 2.07 million Mg (NPV). The NPV of the methane reduction is estimated to be 47 million Mg. Table 2 presents the emission reductions of the final EG in annualized values as well as NPV. Note that the baseline methane emissions do not include landfills closed prior to November 8, 1987, and that methane reductions shown in Tables 1 and 2 do not include landfills expected to undertake profitable energy recovery. Total methane reductions are anticipated to be on the order of 7 million megagrams in the year 2000.

	NPV	Annualized
Baseline NMOC Emissions a (Mg) NMOC Emission Reductions (Mg)	2,070,000 1,100,000 53% 120,000,000 47,000,000 39%	145,000 77,600 54% 8,440,000 3,370,000 40%
Cost (Million \$)	1,278	90

TABLE 2.—SUMMARY OF EMISSION REDUCTION AND COST IMPACTS FOR THE EMISSION GUIDELINES

<sup>a</sup> In the absence of EG. This does not include landfills closed prior to November 8, 1987.

bThis does not enclude landfills expected to undertake profitable energy recovery.

As existing landfills are filled, closed, and replaced by new landfills, the actual annual emissions reductions achieved by the guidelines will decrease, while the reductions achieved by the standards will increase.

Certain by-product emissions, such as  $NO_X$ , CO,  $SO_X$ , and particulates, may be generated by the combustion devices used to reduce air emissions from MSW landfills. The types and quantities of these by-product emissions vary depending on the control device. However, by-product emissions are very low compared to the achievable NMOC and methane emission reductions. Chapters 4 and 6 of the proposal BID (EPA-450/3-90-011a) present additional information about the magnitude of potential secondary air impacts.

### 2. Water

Landfill leachate is the primary potential source of water pollution from a landfill. Although there is no data on the effect of gas collection on leachate composition, the amount of water pollution present as NMOC in the leachate may be reduced under these standards and guidelines.

When LFG is collected, organics and water are condensed inside the header pipes of the gas collection system. This waste also contains NMOC and various toxic substances present in the LFG. The pH of this condensate is normally adjusted by adding caustic at the landfill and then routing it to a public treatment works where it would be treated and discharged. At this time, there is insufficient data available to quantify the effects of the rule on leachate.

### 3. Solid Waste

The final NSPS and EG will likely have little impact on the quantity of solid waste generated nationwide. Aside from the disposal of the collection and control system equipment once it can be removed from the landfill, no other solid wastes are expected to be generated by the required controls. The increased cost of landfill operation resulting from the control requirements may cause greater use of waste recycling and other alternatives to landfill disposal, leading to a decrease in landfill use. However, quantification of such an impact is not possible at this time.

### 4. Superfund Sites

Municipal solid waste landfill sites comprise approximately 20 percent of the sites placed by the EPA on the national priorities list. Often, remedial actions selected at these sites include venting methane and volatile organic contaminants, which would be controlled as necessary to protect human health and the environment.

The final NSPS and EG may affect remedial actions under Superfund for MSW landfills. Section 121(d)(2) of CERCLA requires compliance with the substantive standards of applicable or relevant and appropriate requirements (ARAR) of certain provisions in other environmental laws when selecting and implementing on-site remedial actions. "Applicable" requirements specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Superfund site. "Relevant and appropriate" requirements are not legally applicable, but may address problems or situations sufficiently similar to those encountered so that their use is well suited to a particular site. See 40 CFR 300.5 (55 FR 8814, 8817, March 8, 1990).

These air emission rules will apply to new MSW landfills, as well as to those facilities that have accepted waste since November 8, 1987, or that have capacity available for future use. For CERCLA municipal landfill remediations, these requirements would be potential ARAR for all Records of Decision signed after the date of promulgation. These NSPS and EG will be applicable for those MSW landfill sites on the national priorities list that accepted waste on or after November 8, 1987, or that are operating and have capacity for future use. These standards may also be determined relevant and appropriate for sites that accepted wastes prior to November 8, 1987. The determination of relevance and appropriateness is made on a site-specific basis pursuant to 40 CFR 300.400(g) (55 FR 8841, March 8, 1990). Because the NSPS and EG apply only to landfills with design capacities greater than or equal to 2.5 million Mg or 2.5 million cubic meters, the collection and control requirements may not be relevant and appropriate for smaller landfills.

Given the significant public policy benefits that result from the collection and processing of landfill gas, Congress, as part of the 1986 SARA Amendments, enacted CERCLA Section 124 to provide broad liability protection for companies engaged in landfill gas recovery or processing. Landfill gas emissions, in addition to being a significant source of air pollution, can leach underground and cause explosions in nearby residences. If recovered, landfill gas could supply as much as 1 percent of the U.S. energy requirements.

CERCLA Section 124 states that owners or operators of equipment installed "for the recovery or processing (including recirculation of condensate) of methane" shall not be liable as a CERCLA "owner or operator" under CERCLA Section 101 (20) nor shall they be deemed "to have arranged for disposal or treatment of any hazardous substance\* \* \*" pursuant to CERCLA Section 107. Exceptions are provided (1) where a release is primarily caused by activities of the landfill gas owner/ operator or (2) where such owner/ operator would be otherwise liable due to activities unrelated to methane recovery.

Since passage of CERCLA section 124, methane emissions have been targeted by the EPA as a large contributor to global warming (18 percent) and landfills are one of the largest source of methane emissions (36 percent). Because of this, the EPA's Atmospheric Pollution Prevention Division has initiated the Landfill Methane Outreach Program to promote landfill gas collection projects at the 750 landfills where methane could profitably be recovered. Methane recovery, as compared with collection and flaring of landfill gas without recovery, results in significantly less emissions. It also can greatly reduce the financial burden on local governments (as well as taxpayers) since the energy recovered can be sold to utilities or other consumers and thereby create a revenue stream that may cover the costs of collection and recovery.

The EPA is aware that the standards and guidelines promulgated today for control of emissions at municipal solid waste landfills may change the focus of the landfill gas collection and processing for methane recovery. The landfill gas owner/operator will now need to consider how the collection and recovery of methane will impact on controlling the MSW landfill emissions. It is also likely that the landfill gas owner/operator will be asked to advise and in some cases help implement the MSW landfill's compliance obligations. These related objectives, the control of emissions at municipal solid waste landfills in order to comply with the Clean Air Act Amendments and the reduction of methane emissions in order to mitigate global warming, will need to be coordinated in carrying out common activities such as laying a system of collection piping at a given landfill.

In promulgating today's standards and guidelines, the EPA wants to promote the policy incorporated in CERCLA Section 124. Recognizing the chilling effect that potential CERCLA liability might otherwise have on landfill gas collection or processing activities, the EPA interprets CERCLA Section 124 in a manner that will encourage the beneficial recovery of methane. Specifically, EPA believes that Congress intended Section 124 to provide liability protection to owners and operators of equipment for the recovery or processing of methane with respect to all phases involved in landfill gas collection and methane processing. This includes any assistance (related to recovery or processing of methane) provided by the landfill gas equipment owner or operator to the landfill owner/ operator for achieving compliance with the emission standards promulgated today or similar Federal, State, or local controls on landfill emissions. In general, Section 124 will be interpreted in a manner to provide owners and operators of equipment for the recovery or processing of methane with comprehensive protection from CERCLA liability, unless the release or threatened release was primarily caused by activities of the owners and operators

of the equipment, or unless such owners or operators would be otherwise liable under CERCLA.

## *B. Energy and Economic Impacts of Promulgated Action*

The energy and economic impacts are summarized in chapter 1 and fully discussed in chapter 3 and appendix A of the promulgation BID (EPA-453/R-94-021). The estimated impacts have changed somewhat as a result of changes in the final rules and changes in the impacts estimation methodology made in response to public comments.

### 1. Energy Impacts

Affected and designated landfills with NMOC emission rates of 50 Mg/yr or more are required to install a gas collection system and control device. The gas collection system would require a relatively small amount of energy to run the blowers and the pumps. If a flare is used for control, auxiliary fuel should not be necessary because of the high heat content of LFG, commonly  $1.86 \times 10^{7}$  J/scm or more. If a recovery device such as an internal combustion (I.C.) engine or a gas turbine is used, an energy savings would result.

The EPA evaluated the overall energy impacts resulting from the use of flares, I.C. engines, or gas turbines for control of collected emissions at all affected landfills. The least cost control option was identified by taking the NPV costs of the three control options (flares, I.C. engines, and turbines), including any cost savings from the use of recovered landfill gas, and determining the option that costs the least. If landfills use the least cost control device, it is estimated that the NSPS will produce \$170 million of energy revenue as NPV in 1992. The EG are estimated to generated \$1.5 billion of energy revenue as NPV in 1992, if the least cost control device is used.

### 2. Control Costs and Economic Impacts

Nationwide annualized costs for collection and control of air emissions from new MSW landfills are estimated to be \$4 million. The nationwide cost of the EG would be approximately \$90 million. These values are annualized costs. Tables 1 and 2 present costs in both annualized and NPV values. In comparison to other solid waste-related rules, the nationwide costs of the recently promulgated RCRA Subtitle D (40 CFR 257 and 258) rule are estimated to be \$300 million per year and the estimated nationwide costs of the MWC rules promulgated in 1991 are estimated to be \$170 million per year for new combustors and \$302 million per year

for existing combustors (56 FR 5488 and 5514).

The incremental costs and benefits of the different options are presented in tables 3, 4, 5, and 6 in section VIII.E. For NMOC, the average cost effectiveness is approximately \$1,200/Mg for both the NSPS and the EG. Preliminary economic analysis indicates that the annual cost of waste disposal may increase by an average of approximately \$0.60 per Mg for the NSPS and \$1.30 per Mg for the EG. Costs per household would increase approximately \$2.50 to \$5.00 per year, when the household is served by a new or existing landfill, respectively. Additionally, less than 10 percent of the households would face annual increases of \$15 or more per household as a result of the final EG. However, the EPA anticipates that many landfills will elect to use energy recovery systems, and costs per household for those areas would be less. The EPA has concluded that households would not incur severe economic impacts. For additional information, please refer to the regulatory impact analysis (Docket No. A-88-09, Item No. IV-A-7) and chapter 3 of the promulgation BID (EPA-453/R-94-021).

## VI. Significant Changes to the Proposed Standards and Emission Guidelines

All of the significant public comments received on the proposed standards and EG and the Notice of Data Availability are addressed in the promulgation BID (EPA-453/R-94-021). This section of the preamble reviews the major changes to the standards and EG resulting from public comments. A more detailed rationale for these changes is provided in chapters 1 and 2 of the promulgation BID (EPA-453/R-94-021).

### A. Design Capacity Exemption

A design capacity exemption of 100,000 Mg was included in the proposed NSPS and EG to relieve owners and operators of small landfills that the EPA considered unlikely to emit NMOC above the emission rate cutoff requiring control from undue recordkeeping and reporting responsibilities. Commenters indicated that the exemption level was too low, and would still impact many small businesses and municipalities. In response to these comments and as a result of changes to the nationwide impacts analysis, the design capacity exemption in the final NSPS was revised to 2.5 million Mg. The 2.5 million Mg exemption level would exempt 90 percent of the existing landfills while only losing 15 percent of the total NMOC emission reduction. Most of the exempt landfills are owned
by municipalities. The 2.5 million Mg level was chosen to relieve as many small businesses and municipalities as possible from the regulatory requirements while still maintaining significant emission reduction.

This cutoff excludes those landfills who would be least able to afford the costs of a landfill gas collection and control system and are less likely to have successful energy recovery projects. However, depending on sitespecific factors including landfill gas characteristics and local markets, some landfills smaller than the design capacity exemption level may be able to make a profit by installing collection and control systems that recover energy. While the rule does not require control of landfills smaller than 2.5 million Mg, the EPA encourages energy recovery in cases where it is profitable. The EPA has developed a Landfill Methane Outreach Program to encourage more widespread utilization of landfill gas as an energy source. Information can be obtained by calling the Landfill Methane Outreach Program Hotline at (202) 233–9042. Available publications are identified in section 1.2.1 of the promulgation BID.

Since some landfills record waste by volume and have their design capacities calculated in volume, the EPA also established an equivalent design capacity exemption of 2.5 million m<sup>3</sup> of waste. The density of solid waste within different landfills varies depending on several factors, including the compaction practices. Any landfill that reports waste by volume and wishes to establish a mass design capacity must document the basis for their density calculation.

#### B. Emission Rate Cutoff

Some commenters asserted that the proposed emission rate cutoff of 150 Mg/yr should be made more stringent, while others favored the proposal cutoff or higher. The commenters favoring the more stringent level indicated that the EPA's data on NMOC concentration, the benefits of energy recovery and reduced global warming, and the reduced health risks all supported an increased stringency level.

The Climate Change Action Plan, signed by the President in October, 1993, calls for EPA to promulgate a "tough" landfill gas rule as soon as possible. This initiative also supports a more stringent emission rate cutoff that will achieve greater emission reduction.

Due to the small-size exemption, only landfills with design capacities greater than 2.5 million Mg of waste or 2.5 million cubic meters of waste will be affected by this rule. It is estimated that a landfill of 2.5 million Mg design capacity corresponds to cities greater than about 125,000 people. On the whole, large landfills service areas with large population. A reasonable assumption is that many of these large landfills are in the 400 counties that have been designated as urban ozone nonattainment areas and are developing plans to address ozone nonattainment.

Finally, the new data and modeling methodologies, which were published in the Notice of Data Availability on June 21, 1993, significantly reduced the emission reduction and corresponding effectiveness of the rule. Therefore, a more stringent emission rate cutoff would achieve similar emission reductions at similar cost effectiveness to the proposed rule.

Based on all of these reasons, the EPA reevaluated the stringency level and chose an emission rate cutoff of 50 Mg/ yr of NMOC for the final rules. This revision would affect more landfills than the proposal value of 150 Mg/yr of NMOC; however, the 50 Mg/yr of NMOC will only affect less than 5 percent of all landfills and is estimated to reduce NMOC emissions by approximately 53 percent and methane emissions by 39 percent. The 150 Mg/ yr emission rate cutoff would have reduced NMOC emissions by 45 percent and methane emissions by 24 percent. The incremental cost effectiveness of control of going from a 150 Mg/yr cutoff level to a 50 Mg/yr cutoff level is \$2,900/Mg NMOC reduction for new landfills and \$3,300/Mg for existing landfills.

The values for NMOC cost effectiveness do not include any credit for the benefits for toxics, odor, explosion control, or the indirect benefit of methane control. A revised cost effectiveness could be calculated with an assumed credit value for one or more of the other benefits. As an example, assuming a \$30/Mg credit for the methane emission reduction, the incremental cost effectiveness from the proposal cutoff of 150 Mg/yr to the final cutoff of 50 Mg/yr would be reduced to \$660/Mg NMOC.

#### C. Collection System Design Specifications

Commenters indicated that the proposed design specifications for the collection system were overly prescriptive, discouraged innovation, and did not prevent off-site migration of LFG. In the new § 60.759 for design specifications, certain criteria still require proper landfill gas collection; however, the proposed design specifications for the LFG collection system were removed from the final regulations. Instead, the final rule allows sources to design their own collection systems. Design plans must meet certain requirements and be signed by a registered professional engineer, and are subject to agency approval. These changes were made to provide flexibility and encourage technological innovation.

#### D. Timing for Well Placement

The proposed regulations required the installation of collection wells at applicable landfills within 2 years of initial waste placement. Commenters indicated that the installation of wells within 2 years was not practiced at many landfills, because many cells were still active (receiving waste) 2 years after initial placement. Collection wells installed at these cells would have to be covered over, which would decrease the operational life of the well and be costly and inefficient.

The proposed timing for the placement of collection wells has been revised to reduce costs and better coincide with common operational practices at MSW landfills. The final regulation allows for well installation up to 5 years from initial waste placement for active cells. An area that reaches final grade or closure must install collection wells within 2 years of initial waste placement.

#### E. Operational Standards

In response to commenters concerns about the operation of collection systems, the final NSPS contains a new section, § 60.753, "Operational Standards for Collection and Control Equipment." Various operational provisions that had previously been located throughout the proposed rule have been organized under this one section, and new provisions on collection and control systems have been added. The new section addresses the following areas: (1) Collection of gas from active areas containing solid waste older than 5 years (changed from 2 years at proposal); (2) operation of the collection system with negative pressure at each wellhead (except as noted in the rule); (3) operation of the collection system with a landfill temperature less than 55° (or a higher established temperature) and either an N<sub>2</sub> level less than or equal to 20 percent or an  $O_2$ level less than or equal to 5 percent; (4) operation of the collection system with a surface concentration less than 500 ppm methane; (5) venting all collected gases to a treatment or control device; and (6) operation of the treatment or control device at all times when the collected gas is routed to the control device. The numerical requirements (for the N<sub>2</sub> or O<sub>2</sub> levels, landfill temperature, and surface concentration) are new requirements that will verify that the system is being adequately operated and maintained. In conjunction with the new operational provisions, the compliance, testing and monitoring sections were revised to reference and support these new or relocated provisions.

#### F. Surface Emission Monitoring

Numerous commenters asserted that the proposed rules did not address surface methane emissions resulting from insufficient well spacing or from breaks in the cover material. The commenters recommended that monitoring of surface emissions be required to ensure the proper operation of collection system equipment. Upon further analysis, the EPA decided to require surface emission monitoring and the maintenance of negative pressure at all wells, except under specified conditions, to ensure proper collection system design and operation. Based on information submitted by commenters, a maximum surface concentration of 500 ppm methane should be demonstrated to indicate proper operation of the collection system. Monitoring is to be done quarterly, with provisions for increasing monitoring and corrective procedures if readings above 500 ppm are detected. Instrumentation specifications, monitoring frequencies, and monitoring patterns have been structured to provide clear and straightforward procedures that are the minimum necessary to assure compliance.

#### G. Model Default Values

The EPA received additional data after proposal on the model defaults that were included in the tier system calculations. These default values are used to calculate whether the NMOC concentration is above the cutoff level for control requirements of 50 Mg/yr. The new information received lead the EPA to revise the default values for the site-specific methane generation rate constant (k), the methane generation potential (L<sub>o</sub>), and the NMOC concentration (C<sub>NMOC</sub>). In the absence of site-specific data, the landfill owner or operator would use the default values for k, L<sub>o</sub>, and C<sub>NMOC</sub> in order to estimate the annual NMOC emission rate. More information on the model defaults may be found in the final BID (EPA-453/R-94-021) and the memorandum "Documentation of Small-Size Exemption Cutoff Level and Tier 1 Default Values (Revised)," October 21, 1993, (Docket No. A-88-09, Item No. IV-B-5).

The Tier 1 default values of k, Lo, and C<sub>NMOC</sub> tend to overstate NMOC emission rates for most landfills, and are intended to be used to indicate the need to install a collection and control system or perform a more detailed Tier 2 analysis. It is recommended that these default values not be used for estimating landfill emissions for purposes other than the NSPS and EG. The EPA document "Compilation of Air Pollution Emission Factors" (AP–42) provides emission estimation procedures and default values that can be used for emissions inventories and other purposes.

#### **VII.** Permitting

#### A. New Source Review Permits

Today's rulemaking under section 111(b) establishes a new classification of pollutants subject to regulation under the CAA: "MSW landfill emissions." Therefore, PSD rules now apply to all subject stationary sources which have increases in landfill gas above the significance level, 50 tpy or more of NMOC. Landfills below the 2.5 million Mg design capacity exemption, which are not required by the regulations to install controls, may exceed this significance level. In this case, the State will need to determine if controls should be installed for purposes of PSD or NSR compliance.

The proposed significance level for MSW landfill emissions of 40 tpy of NMOC was changed to 50 tpy after consideration of public comments. The PSD significance level for VOC emissions is 40 tpy. At proposal, the landfill gas emission level was set at 40 tpy of NMOC to be consistent with the 40 tpy level for VOC. However, NMOC contains organic compounds that are not VOC. An NMOC emission rate of roughly 50 tpy corresponds to a VOC emission rate of 40 tpy.

The components of MSW landfill emissions that are regulated as pollutants or precursors of an air pollutant listed under section 108 of the CAA are also regulated by other provisions of CAA as applicable. For example, the components of MSW landfill emissions that are emitted as photochemically reactive VOCs are regulated, as applicable, under the nonattainment provisions for ozone contained in part D of title I of the CAA.

#### B. Operating Permits

Section 502 of the CAA and § 70.3(a) require any source subject to standards or regulations under section 111 of the CAA to obtain part 70 operating permits. However, landfills below 2.5 million Mg design capacity are not

subject to standards under section 111 because they are not required to put on controls and are not subject to emission limits. These landfills are subject to a reporting requirement under the section 111 rule; however, this requirement determines applicability of the standard and does not make them "subject" for the purposes of part 70. Consequently, landfills below 2.5 million Mg design capacity are not subject to part 70, provided they are not major sources; and this is stated in §60.752(a) of the rule. If landfills below 2.5 million Mg design capacity are major sources, they must obtain a part 70 permit under the same deadlines and requirements that apply to any other major source. States may request additional information to verify whether landfills have the potential to emit at major source levels.

For landfills above the 2.5 million Mg design capacity exemption, part 70 operating permits are required. These landfills are subject to emission limits and will most often be major sources. Since landfill emissions increase over time, a landfill over 2.5 million Mg may not be major in the beginning; however, as the landfill progresses to capacity, it may become major. Many of the landfills above the 2.5 million Mg exemption will be required to collect and control the gas under the regulation. The issuance of a permit will also help enforce and implement the standard. Therefore, the EPA has decided to require permits for all landfills with design capacities above 2.5 million Mg, whether or not the landfill will be required to install a collection and control system.

The regulation also provides for termination of operating permits. Landfill emissions, unlike emissions from other source categories, decrease over time after the landfill is closed. If a landfill has closed and a control system was never required or the conditions for control system removal specified in the regulation have been met, an operating permit is no longer necessary.

#### **VIII. Administrative Requirements**

#### A. Docket

The docket (Docket No. A–88–09) is an organized and complete file of all the information considered by the EPA in the development of this rulemaking. The docket is a dynamic file, since material is added throughout the rulemaking development. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with

# Attachment E

U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; Proposed Rule, 79 Fed. Reg. 41,796 (July 17, 2014) (excerpts)

#### ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 60

[EPA-HQ-OAR-2003-0215; FRL-9912-12-OAR]

#### RIN 2060-AM08

#### Standards of Performance for Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency.

#### ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing a new subpart, 40 CFR part 60, subpart XXX that updates the Standards of Performance for Municipal Solid Waste Landfills. Under section 111 of the Clean Air Act, the EPA must review, and, if appropriate, revise standards of performance at least every 8 years. The EPA's review of the standards for municipal solid waste landfills applies to landfills that commence construction, reconstruction, or modification after July 17, 2014. The proposed standards reflect changes to the population of landfills and an analysis of the timing and methods for reducing emissions. The proposed standards also address other regulatory issues including the definition of landfill gas treatment systems, among other topics. The new subpart will reduce emissions of landfill gas, which contains both nonmethane organic compounds and methane. These avoided emissions will improve air quality and reduce public health and welfare effects associated with exposure to landfill gas emissions.

**DATES:** *Comments.* Comments must be received on or before September 15, 2014.

Public Hearing. If anyone contacts the EPA requesting a public hearing by July 22, 2014, we will hold a public hearing on August 12, 2014, in Washington, DC at the William Jefferson Clinton East Building, Room 1153, 1201 Constitution Avenue NW., Washington, DC 20004. The public hearing will convene at 9:00 a.m. and end at 6:00 p.m. (Eastern Standard Time). There will be a lunch break from 12:00 p.m. to 1:00 p.m. Please contact Ms. Virginia Hunt at (919) 541–0832 or at hunt.virginia@ epa.gov to register to speak at one of the hearings. The last day to pre-register in advance to speak at the hearings will be Friday August 8, 2014. Additionally, requests to speak will be taken the day of the hearing at the hearing registration desk, although preferences on speaking times may not be able to be fulfilled. If you require the service of a translator or

special accommodations such as audio description, please let us know at the time of registration.

If no one contacts the EPA requesting a public hearing to be held concerning this proposed rule by July 22, 2014, a public hearing will not take place. If a hearing is held, it will provide interested parties the opportunity to present data, views or arguments concerning the proposed action. The EPA will make every effort to accommodate all speakers who arrive and register. Because this hearing, if held, will be at U.S. government facilities, individuals planning to attend the hearing should be prepared to show valid picture identification to the security staff in order to gain access to the meeting room. In addition, you will need to obtain a property pass for any personal belongings you bring with you. Upon leaving the building, you will be required to return this property pass to the security desk. No large signs will be allowed in the building, cameras may only be used outside of the building and demonstrations will not be allowed on federal property for security reasons.

The EPA may ask clarifying questions during the oral presentations, but will not respond to the presentations at that time. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral comments and supporting information presented at the public hearing. Commenters should notify Ms. Hunt if they will need specific equipment, or if there are other special needs related to providing comments at the hearings. Verbatim transcripts of the hearing and written statements will be included in the docket for the rulemaking. The EPA will make every effort to follow the schedule as closely as possible on the day of the hearing; however, please plan for the hearing to run either ahead of schedule or behind schedule. Information regarding the hearing (including information as to whether or not one will be held) will be available at: http:// www.epa.gov/ttnatw01/landfill/ landflpg.html.

**ADDRESSES:** Submit your comments, identified by Docket ID Number EPA–HQ–OAR–2003–0215, by one of the following methods:

• Federal eRulemaking Portal: http:// www.regulations.gov. Follow the online instructions for submitting comments.

• *Email: A-and-R-docket@epa.gov.* Include docket ID No. EPA–HQ–OAR– 2003–0215 in the subject line of the message. • Fax: (202) 566–9744. Attention Docket ID No. EPA–HQ–OAR–2003– 0215.

• *Mail:* Environmental Protection Agency, EPA Docket Center (EPA/DC), Mailcode 28221T, Attention Docket ID No. EPA-HQ-OAR-2003-0215, 1200 Pennsylvania Avenue NW., Washington, DC 20460. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attn: Desk Officer for EPA, 725 17th Street NW., Washington, DC 20503.

• *Hand/Courier Delivery:* EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue NW., Washington, DC 20004. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA–HQ–OAR–2003– 0215. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at http:// www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute.

Do not submit information that you consider to be CBI or otherwise protected through *http://* www.regulations.gov or email. Send or deliver information identified as CBI to only the mail or hand/courier delivery address listed above, attention: Mr. Roberto Morales, OAQPS Document Control Officer (Room C404-02), Office of Air Quality Planning and Standards, U.S. EPA, Research Triangle Park, NC 27711, Attention Docket ID No. EPA-HQ-OAR-2003-0215. The http:// www.regulations.gov Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through http:// www.regulations.gov, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact emission thresholds but do not meet the design capacity thresholds. Further, installation of GCCS at landfills with design capacities between 2.5 and 3.0 million Mg are well demonstrated. According to the LMOP database, there are more than 50 landfills out of 70 in this size range that have installed GCCS.

Options that reduce the design capacity threshold without also lowering the NMOC emission threshold would create additional reporting and permitting burden without any additional environmental benefit. These types of options would not change the number of landfills required to control emissions, but they would increase the number of landfills required to obtain an operating permit and also increase the number of landfills required to complete Tier 1 or Tier 2 emission calculations and reports.

When the EPA promulgated the 2.5 million Mg design capacity threshold in 1996, we considered the impact on small entities based on public comment (61 FR 9910). Today, small entities still tend to own smaller sized landfills, whereas larger entities tend to own larger regional landfills. Approximately 10 percent of the landfills subject to subpart WWW or the MSW landfills state or federal plan implementing subpart Cc are owned by small entities. Further, the cost burden for installing a collection and control system is more significant for small landfills, which are more often owned by small entities, than larger landfills. Certain costs to construct the gas collection system (e.g., flat fees for drill rig mobilization, and monitoring and construction costs) remain relatively constant regardless of the size of the landfill.

For these reasons, the EPA is not proposing any changes to the current design capacity threshold of 2.5 million Mg and 2.5 million m<sup>3</sup>.

# *E.* What are the implementation concerns with reducing the NMOC threshold?

The EPA recognizes that NMOC emissions are site specific, varying widely from landfill to landfill and understands that a majority of landfills currently affected by subpart WWW conduct Tier 2 testing in order to refine their NMOC emission estimates before installing a GCCS.

Lowering the NMOC emission threshold would result in earlier GCCS installations, 13 percent more emission reductions, and a dollar-per-Mg cost to control NMOC that is higher than the baseline (\$6,000/Mg NMOC vs. \$4,400/ Mg NMOC). Despite these higher costs, the EPA also recognizes the value of reducing methane emissions (\$1.50/Mg CO<sub>2</sub>e vs. \$1.10/Mg CO<sub>2</sub>e at baseline) that are associated with a lower NMOC emission threshold, as discussed in sections III and VI.B of this preamble. Based on these considerations, among others, the EPA is proposing to reduce the NMOC emission threshold from 50 Mg/yr to 40 Mg/yr. See section VI.B of this preamble for more details.

#### F. What are the implementation concerns with shortening the initial or expansion lag times?

The emission reductions achieved by reducing the initial or expansion lag time are affected by the size of the landfill, waste placement patterns, and annual acceptance rates. For example, the size of the landfill and the filling cycle affects how much and when emission reductions would be achieved. Based on comments received from SERs and Federalism consultation participants, modern landfill designs typically do not reach final grade before 7 years. Because the landfills NSPS allows two options for expanding the GCCS (2 years after initial waste placement in closed areas and 5 years after initial waste placement in active areas), any reduction to the 2 year lag time for closed areas would not likely achieve any actual additional reductions from these larger landfills because the majority of landfills are complying with the 5-year allowance period instead of the 2-year allowance period. Modifying the 5-year provision may also have a limited actual impact on emission reductions. Many landfills in wet climates install wells ahead of the 5year schedule for odor or energy recovery purposes. When examining the effects of shortening the lag times, the emission reductions vary over the time period considered. To visually observe how reducing the lag times affects emissions and reductions over the 10year period following proposal, see the charts comparing emissions from reduced lag times in the docketed memorandum, "Cost and Emissions Impacts Resulting from the Landfills NSPS Review. 2014.'

When isolating the timeframe for initial GCCS installation from the other control criteria, modeling showed that the reductions in year 2023 are lower than those estimated to be achieved under the current baseline. Although the initial GCCS would be installed earlier, for example in year 2020, it would also be designed slightly smaller (i.e., a smaller number of wells) than a GCCS installed in a later year. By 2023, the system would not have been expanded yet, thus, the total amount of emission reductions achieved in 2023 will be less than the baseline until the system is expanded in 2024.

Reducing the expansion lag time would achieve a short period of modeled reductions during every expansion cycle because the GCCS would be expanded one year earlier. Emission reductions in year 2023 would be approximately 27 percent higher than an option that did not shorten the expansion lag time. However, when considered over a 10-year period, the additional emission reduction would be approximately 8 percent.

Small entity representatives and Federalism consultation participants expressed concern about the potential shortening of lag times. For details, refer to the docketed report "Summary of Small Entity Outreach. 2014."

According to the commenters, reduced lag times would result in the installation of more GCCS equipment in active fill areas. Wells located in these areas are more frequently damaged as a result of daily filling operations and the movement of equipment. Damaged wells must be repaired with well extensions and/or redrilling of wells. In addition, waste in active fill areas undergoes significant settlement. This settlement affects the alignment of gas header equipment, requiring more frequent repairs, troubleshooting, and replacement of equipment. These repairs can add a significant cost to the construction and operation of a GCCS that is not currently accounted for in the LFGcost estimates and also increase the amount of system downtime.

In addition to the implementation concerns, reducing the lag times would require more frequent mobilization of drill rig equipment, purchase of GCCS infrastructure, and system repairs, which could lead to higher costs. In year 2023, the dollar-per-Mg cost to reduce the initial and/or expansion lag times in conjunction with reducing the NMOC threshold are higher than the options that do not adjust the lag times (\$6,900 to \$11,300/Mg NMOC vs. \$6,000/Mg NMOC). This higher cost is due in part to the timing of the first round of wellfield expansions at these new landfills, many of which were modeled to expand their systems in 2023, and thus incurring additional costs in that year to operate both the initial GCCS and the first set of expansion wells.

Small entity representatives and Federalism consultation participants raised several practical concerns with reducing the expansion lag time. Reducing the expansion lag time would result in more wells located in active fill areas because more of the face of the landfill is active after only 2 years of waste acceptance and the landfill owner or operator must add wells into these active areas sooner.

In addition, active fill areas are still in the aerobic phase of waste decomposition. Installing wells in areas with high oxygen levels increases the chance of subsurface fires. It also leads to more frequent exceedances of the current wellhead monitoring standards for oxygen. In these cases the landfill owner or operator would also be unlikely to request a higher operating value for oxygen because they would have difficulty meeting the two criteria in proposed 40 CFR 60.763(c) for a higher operating value demonstration: A higher operating value must not cause fires and must not significantly inhibit anaerobic decomposition by killing methanogens. Neither of these criteria would apply to wells located in active fill areas.

Horizontal LFG collection wells may provide some relief to these implementation concerns that were raised by the SERs, while also allowing for the wells to be installed more quickly after the waste is placed in the landfill. These types of wells consist of perforated pipe in gravel-filled trenches constructed within the waste mass as an active area is filled. The wellheads are installed remotely outside of the active fill area to allow landfill owners/ operators to monitor the wells. Although the horizontal collection infrastructure is installed as the waste is placed in the fill area, the collectors are not brought online under an active vacuum until a sufficient refuse layer has been placed on top of the collectors. This time period is necessary in order to prevent air infiltration in the landfill. However, this time period is often shorter than the timeframe needed to install vertical wells, and can be as short as a few months after refuse is buried.<sup>20</sup>

The EPA is aware of several horizontal collector installations, including several landfills in California<sup>21</sup> and 18 different landfills that reported using horizontal collectors in the voluntary data collection effort for this rulemaking (see "Summary of Landfill Dataset Used in the Cost and Emission Reduction Analysis of Landfills Regulations. 2014").

The shorter length of time associated with bringing horizontal collectors online can be especially important at landfills employing liquids recirculation

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techniques or located in wetter climates, given the higher LFG generation rates at those sites (see section V.G of this preamble). Bringing these collectors online more quickly and more proactively addresses odor concerns at landfills. These systems are also useful in landfills that practice "over-filling," where new waste is placed on top of a section of the landfill that was capped temporarily. SERs did express some implementation concerns with horizontal collectors, indicating that these systems have a shorter lifetime than vertical wells and require more frequent replacement.

For the reasons presented in this section, the EPA is not proposing to shorten the initial or expansion lag times from the lag times codified in subpart WWW. However, the EPA requests comment on the feasibility and potential benefits of reducing either or both of the lag times. Specifically, the EPA requests comment on the practicality, cost, and emission reduction implications of installing or expanding the wellfield on active areas in a shorter timeframe. The EPA believes that this may be appropriate since horizontal collector systems have been installed at several landfills that were not in operation when the NSPS was originally promulgated in 1996. The EPA also requests data and/or comment on the potential emission reductions and corresponding costs that could result from reduced lag times. The EPA also notes that the cost analysis presented in section X of this preamble is based on vertical wells and the EPA is interested in any comments and data that address any differential in costs between these two types of systems.

#### G. Request for Comment on BSER

The EPA is requesting comment on several items regarding BSER. EPA is requesting comment on the proposed design and operational standards for new sources that EPA believes are necessary to ensure a GCCS is well designed and well operated. The EPA is requesting comment on additional emission control technologies that are in place at landfills—other than a GCCS as described here—that could be considered BSER. We request descriptions of such systems, an indication of their current use, data demonstrating emission reductions, and corresponding costs of such systems. The EPA is also requesting comment on whether a well designed and well operated GCCS in conjunction with any of the technologies or practices discussed in section V.A of this preamble should be considered to be BSER.

The EPA is also taking comment on whether it should consider reducing the design capacity threshold or initial lag times for landfills that are located in a wet climate or that recirculate leachate or add other liquids to the landfills to accelerate waste decomposition. Wetter wastes decompose more quickly than drier wastes and as a result generate more landfill gas in the short term. Therefore, it may be appropriate to require these landfills to install the gas collection system sooner, which SERs indicated is already occurring in practice for landfills in wetter climates. Similarly, smaller landfills in wetter climates, or those employing leachate recirculation, may also generate earlier spikes in landfill gas emissions that could exceed the NMOC threshold. Although these landfills are exempt from proposed subpart XXX under the design capacity threshold of 2.5 million Mg and 2.5 million cubic meters, if a smaller design capacity threshold were adopted for these wet landfills, more emission reductions may be achieved.

If a separate set of thresholds and/or lag times were to apply to these wet landfills, the EPA requests comment on how a wet landfill might be defined. For example, a wet landfill could be defined as a landfill that has precipitation of greater than 25 inches per year and/or recirculates leachate (or other liquids).

#### VI. Rationale for the Proposed Changes Based on Review of the NSPS

To determine which option to propose, the EPA considered the emission reductions that are expected to be achieved under the criteria in the baseline (subpart WWW), as well as emission reductions that would be achieved under several control options more stringent than the baseline.

# A. What are the environmental impacts and costs associated with the baseline?

In this analysis, the baseline contains the same gas collection and control requirements and thresholds (2.5 million Mg or 2.5 million cubic meters and 50 Mg NMOC per year) that are in subpart WWW. For the baseline, the initial lag time is 30 months; and the expansion lag time is 2 years after initial waste placement in cells that are closed or at final grade or 5 years after initial waste placement in active areas of the landfill. These parameters are described in detail in section V of this preamble.

Table 2 of this preamble summarizes the impacts of the baseline for year 2023. The table includes emission reductions for NMOC, methane, and carbon dioxide equivalent (CO<sub>2</sub>e) and corresponding annualized net costs based on the annualized control, testing,

<sup>&</sup>lt;sup>20</sup> Barlaz et al., Controls on Landfill Gas Collection Efficiency: Instantaneous and Lifetime Performance 59 J. Air & Waste Mgmt. Ass'n 1399, 1402–03 (Dec. 2009).

<sup>&</sup>lt;sup>21</sup> SCS Engineers, Technology and Management Options for Reducing Greenhouse Gas Emissions. Prepared for California Integrated Waste Management Board.

meet the design capacity thresholds and application of GCCS at landfills with design capacities between 2.5 and 3.0 million Mg is well demonstrated), alternative option 3.0/40 is also not being proposed.

*Proposed option 2.5/40.* Based on the emission reduction and cost discussions above and consistent with the President's Methane Strategy as discussed in section III of this preamble, the EPA is proposing to reduce the NMOC threshold to 40 Mg/yr. Lowering the NMOC threshold would result in earlier GCCS installations and additional NMOC and methane reductions compared to the baseline, as shown in Table 3 of this preamble. This lowered threshold achieves reductions without adjusting the initial and expansion lag times and incurring the associated costs and implementation concerns.

Reducing the NMOC threshold from the baseline-level of 50 Mg/yr to 40 Mg/ yr would affect only three more landfills in 2023 but would achieve an estimated 13 percent additional reduction in emissions of NMOC and methane compared to the baseline. Further, this proposal would maintain the same control device removal criteria as the baseline except that the controls would have to stay on until three successive tests for NMOC emissions were below the NMOC emission threshold of 40 Mg/ yr instead of 50 Mg/yr. Depending on the waste-in-place of the landfill at closure and other site-specific factors (e.g., waste composition, climate), it may take more than 30 years after closure for a large modern landfill to emit less than the NMOC emission threshold, and in turn qualify for capping or removing the GCCS. Although the emission reductions associated with these later years in the landfills' lifetimes are not incorporated in the environmental and economic impacts of the baseline and options under consideration, the lower threshold associated with this proposal would require controls to be installed for a slightly longer period than the baseline.

Although some commenters have expressed concerns about the quantity of emissions after landfills have closed and the GCCS has ceased to operate, the analysis the EPA conducted demonstrates that GCCS would be installed for a significant period after landfill closure that is commensurate with the size and corresponding emissions profile of each affected landfill. For these reasons, the EPA is proposing that emissions must be below an emissions threshold of 40 Mg/yr as one of the three criteria for determining when a GCCS may be capped or removed. The EPA is also requesting comment on whether these three criteria are appropriate, and if alternative criteria such as consecutive quarterly measurements below a surface emission threshold should also be considered. RCRA, specifically subpart F of Part 258, also requires supplemental basic post-closure care to maintain cover integrity.

Reducing the NMOC threshold also recognizes the opportunity to build upon progress to date and achieve even more reductions of landfill gas and its components, consistent with the President's Methane Strategy as discussed in section III of this preamble. Landfill gas generated from established waste (waste that has been in place for at least a year) is typically composed of roughly 50 percent methane and 50 percent carbon dioxide by volume, with less than 1 percent NMOC. Because the components of landfill gas are associated with substantial health, welfare, and climate effects, additional reductions of landfill gas would improve air quality and reduce health and welfare effects associated with exposure to landfill gas emissions. Note that in 2012, landfills continued to be the third largest source of humanrelated methane emissions in the United States, representing 18.1 percent of total methane emissions.<sup>24</sup> Methane emissions represent 8.7 percent of all GHG emissions (in CO<sub>2</sub>e) in the United States.

Alternative option 2.0/34. Consistent with the President's Methane Strategy and the potential to achieve a near-term beneficial impact in mitigating global climate change (see section III of this preamble), the EPA considered even more stringent alternatives in its analysis of control options that may achieve additional reductions of methane and NMOC. For example, reducing the NMOC threshold below 40 Mg/yr in conjunction with reducing the design capacity to below 2.5 million Mg or 2.5 million cubic meters, an alternative option 2.0/34 would require controls at 11 landfills by 2023, which is the same number of landfills required to control under this proposal. However, under this more stringent option, four of the 11 landfills would install controls one year earlier. The extent of the emission reductions for this option depends on the time period considered. For example, in year 2023, emission reductions would not be any greater than the proposal. However, when averaged over the 10-year period (2014-2023), this more stringent option would achieve additional NMOC and methane reductions compared with the proposal.

Refer to the Environmental Impacts Analysis,25 and the docketed memoranda "Cost and Emissions Impacts Resulting from the Landfills NSPS Review. 2014" for details on the estimated reductions. Additional emission reductions would be expected to be achieved over the lifetime of the landfills subject to subpart XXX because the lower NMOC threshold would require earlier installation of controls and also require the controls to remain installed for a longer period. The annualized cost to implement alternative option 2.0/34 would be higher than the proposal. The EPA did not analyze an option that reduced the NMOC threshold below 40 Mg/year without also reducing the design capacity threshold. In light of these additional reductions, as well as the additional costs to affected entities, the EPA is soliciting comment on whether an NMOC threshold below 40 Mg/yr in conjunction with a reduced design capacity threshold should be considered for new landfills subject to subpart XXX.

#### VII. Summary of Clarifications and Resolutions That Are the Result of Implementation Activity

The EPA proposed amendments to the landfills NSPS (40 CFR part 60, subpart WWW) on May 23, 2002 (67 FR 36475) to address implementation issues. Consideration of public comments received and additional implementation activity led to the proposal of further clarifications on implementing the landfills regulations on September 8, 2006. After considering public comments received on the September 8, 2006 amendments and additional implementation activity, we are proposing resolutions and clarifications of the issues specifically identified below under new subpart XXX. The EPA plans to address amendments and clarifications resulting from implementation activities as they apply to subparts Cc and WWW in a separate document. The EPA will also address any potential changes to subparts Cc and WWW in a separate document. Thus EPA is not taking final action on either the May 23, 2002 or the September 8, 2006 proposed rules at this time. In addition to the specifically identified resolutions and clarifications associated with the May 23, 2002 and September 8, 2006 proposed rules, we are proposing a number of provisions in subpart XXX that are intended to address other implementation issues

<sup>&</sup>lt;sup>25</sup> Municipal Solid Waste Landfills, Economic Impact Analysis for the Proposed New Subpart to the New Source Performance Standards.

#### *H. Submitting Corrective Action Timeline Requests*

During implementation of subpart WWW, the question has been raised about whether a landfill needs agency approval of corrective action timelines that exceed 15 calendar days but are less than the 120 days allowed for installing a GCCS. The intent of the rule is to require agency approval of corrective action timelines only if a landfill does not fix an exceedance in 15 days and is unable to or does not plan to expand the gas collection system within 120 days. We have included provisions in subpart XXX (40 CFR 60.765(a)(5)) to clarify this point. Excluding system expansion, all other types of corrective actions expected to exceed 15 calendar days should be submitted to the agency for approval of an alternate timeline. In addition, if a landfill owner or operator expects the system expansion to exceed the 120-day allowance period, it should submit a request and justification for an alternative timeline. We have not proposed a specific schedule for submitting these requests for alternative corrective action timelines because investigating and determining the appropriate corrective action, as well as the schedule for implementing the corrective action, will be site specific and depend on the reason for the exceedance. We clarify that a landfill should submit an alternative time line request as soon as possible (i.e., as soon as they know that they would not be able to correct the exceedance in 15 days or expand the system in 120 days) to avoid being in violation of the rule. If the landfill waits until 120 days after the exceedance to submit an alternative time line, then by the time the regulatory agency has the chance to review the time line and determine if it is approvable, the landfill will already be in violation of the requirement to expand the system within 120 days. After submitting the alternative timeline request, the landfill should work with its permitting authority to communicate the reasons for the exceedances, status of the investigation, and schedule for corrective action.

To address implementation concerns associated with the time allowed for corrective action, the EPA requests comment on an alternative that extends the requirement for notification from 15 days to as soon as practicable, but no later than 60 days. Many requests for an alternative compliance timeline express the need for additional time to make necessary repairs to a well that requires significant construction activities. Extending the time period to as soon as practicable, but no later than 60 days

may reduce the burden and ensure sufficient time for correction. If the EPA were to extend the time period to as soon as practicable, but no later than 60 days, then the EPA is also considering the removal of the provision to submit an alternative timeline for correcting the exceedance. Thus, by no later than day 60, the landfill would have to either have completed the adjustments and repairs necessary to correct the exceedance, or be prepared to have the system expansion completed by day 120. The EPA is also requesting input on whether 60 days is the appropriate amount of time that would allow owners or operators to make the necessary repairs.

#### I. Other Corrections and Clarifications

The clarifications and provisions described in this section apply to new subpart XXX. During implementation of subpart WWW, the EPA learned about potential confusion in the rule caused by the terms "control and treatment system" and "control system." It was requested that the EPA revise the term "control or treatment system" to read "control system." We agree that the term treatment system is a subset of the control system as described in subpart WWW (40 CFR 60.752(b)(2)(iii)(C)) and are proposing to make this change in proposed subpart XXX. While making this change, we also conducted an extensive review of the remainder of the rule text to make several editorial and consistency changes to how the terms "control system" and "collection and control system" were used. As part of this review, we clarified our intent for the terms "device" and "equipment" to be used interchangeably with "system" in the context of the landfills NSPS; and we are proposing to replace these terms with "system" in several places, as appropriate, for consistency. We also identified editorial inconsistencies in the use of how the terms "control system" and "collection and control system" were referenced and we are proposing in subpart XXX to change the text to reference the correct term, consistent with the intent of the rule text.

We propose to include language in subpart XXX to exempt owners or operators of boilers and process heaters with design capacities of 44 megawatts or greater from the requirement to conduct an initial performance test. Available data demonstrate that boilers and process heaters with heat input capacities of 44 megawatts or greater consistently achieve the required level of control, and the exemption of these boilers from testing has been included in several other air regulations, such as those for the chemical industry and petroleum refineries.

We propose to apply new language in subpart XXX (40 CFR 60.768(b)(2)(i) and 40 CFR 60.768(c)(1)(i)) by removing the term "combustion" from the requirement to monitor temperature of enclosed combustors. The amendment clarifies that the "combustion" temperature does not have to be monitored, because, for some enclosed combustors, it is not possible to monitor temperature inside the combustion chamber to determine combustion temperature. Instead, temperature can be monitored at another location, as long as the monitored temperature relates to proper operation of the enclosed combustor.

We propose to include a corrected test method cross-reference in subpart XXX (40 CFR 60.765(c)(3)) necessitated by the reorganization of Method 21 in appendix A to 40 CFR part 60.

We propose to include definitions of "household waste" and "segregated yard waste" in subpart XXX (40 CFR 60.761) to clarify our intent regarding the applicability of subpart XXX to landfills that do not accept household waste, but accept segregated vard waste. We intend for subpart XXX to apply to municipal solid waste landfills that accept general household waste (including garbage, trash, sanitary waste), as indicated in the definitions. We did not intend these rules to apply to landfills that accept only segregated yard waste and non-household waste such as construction and demolition and vard waste.

We are clarifying the definition of "Modification" in subpart XXX to include an increase in the permitted design capacity in terms of not only the volume, but also the mass.

The EPA is exploring options to achieve additional emissions reductions from existing landfills under CAA section 111(d) in an ANPRM. The EPA will consider all of the information it receives in response to the ANPRM in the context of its review of the NSPS and will respond to that information accordingly. In light of our interest in valuing methane reductions in our review of these standards as well as the number of cost-effective measures for existing landfills described in the ANPRM, the EPA is also exploring whether it is reasonable to review the definition of modification for landfills. A revision to the definition may provide additional opportunities to apply costeffective measures to mitigate landfill gas emissions in modified sources because of the close relationship of control strategies that may apply to both modified landfills and existing sources.

The EPA requests comment on changes that may be appropriate and whether these changes should be enacted to achieve additional emissions reductions.

## IX. Request for Comment on Specific Provisions

The EPA is specifically requesting public comment on three issues: Landfill gas treatment, wellhead monitoring, and enhanced surface monitoring.

#### A. Definitions for Treated Landfill Gas and Treatment System and Treatment System Monitoring

The EPA is requesting public comment on an alternative approach for defining treatment system and treated landfill gas. The alternative approach would define *Treated landfill gas* as landfill gas processed in a treatment system according to subpart XXX and would define Treatment system as a system that filters, de-waters, and compresses landfill gas. The alternative approach would be available for only new landfills subject to subpart XXX that treat the landfill gas for subsequent sale or beneficial use. The EPA is considering providing this flexibility for new landfills that beneficially use landfill gas, given the site-specific and end-use specific treatment requirements for different energy recovery technologies. The EPA is also requesting comment on providing this flexibility for all landfills. Most landfills that beneficially use landfill gas either combust the landfill gas in a device that achieves 98 percent destruction of NMOCs or they treat gas for sale or onsite use. This level of treatment and subsequent combustion not only achieves the environmental benefits of reducing landfill gas emissions, but also utilizes landfill gas as an energy resource.

This technical aspects of this alternative approach are consistent with public comments on previous notices (67 FR 36475, May 23, 2002 and 71 FR 53271, September 8, 2006). It is also consistent with input from the SERs and recent Federalism consultation participants who stated that the extent of filtration, de-watering, and compression can be site dependent, and that different sites require different levels of gas treatment to protect the combustion devices that use treated landfill gas as a fuel and ensure good combustion. The alternative treatment provisions are also consistent with the 2002 proposed definition of treatment system as "a system that filters, dewaters, and compresses landfill gas." The alternative definition of treatment

system gas allows the level of treatment to be tailored to the type and design of the specific combustion equipment in which the landfill gas is used. Instead of meeting numerical specifications for treated landfill gas, owners/operators would specify the level of treatment based on the type and design of the specific combustion equipment that uses the treated landfill gas. Owners/ operators would identify monitoring parameters and keep records that demonstrate that such parameters effectively monitor filtration, dewatering, or compression system performance necessary for the end use of the treated landfill gas. We are also proposing to define "treated landfill gas'' to mean landfill gas processed in a treatment system. The intent of the treatment option is to require active lowering of the dew point consistent with the better available treatment systems, as such, we did not intend knock-out pots (for example) to qualify.

Owners/operators would develop a site-specific treatment system monitoring plan that would not only accommodate site-specific and end-use specific treatment requirements for different energy recovery technologies, but would also ensure environmental protection. Most landfill owners and operators that treat landfill gas combust the landfill gas in a combustion device that achieves 98 percent destruction of NMOCs. Thus, the treatment option offers a similar level of environmental protection as combusting the landfill gas. Landfill owners and operators that are beneficially using landfill gas are motivated to efficiently treat landfill gas for the intended purpose in order to protect energy recovery equipment, maintain warranties on equipment, and meet the gas specifications often specified in contractual requirements with third parties purchasing the gas. Thus, preparing the monitoring plan would document procedures to ensure that the landfill gas has been adequately treated for the intended use. Having a properly operated and efficient treatment system should minimize downtime of the entire GCCS (or routing of the landfill gas to a flare due to shutdown of end-use equipment) because the end-use equipment will continue to operate properly and will need less maintenance if the gas is treated appropriately. By minimizing downtime of the entire system, the destruction of NMOC will be maximized.

The plan would be required to include monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated landfill gas. The plan would be required to include monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for the intended end use of the treated landfill gas. Documentation of the monitoring methods and ranges, along with justification, must be included in the site-specific monitoring plan. In the plan, the owner/operator would also need to identify who is responsible (by job title) for data collection, explain the processes and methods used to collect the necessary data, and describe the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems.

The monitoring plan may rely on references to existing corporate documents (e.g., standard operating procedures, quality assurance programs or other documents) provided that the elements required by the monitoring plan are easily recognizable.

The owner or operator would be required to revise the monitoring plan to reflect changes in processes, monitoring instrumentation, and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime.

The plan must be kept on site and must be available for inspection. In addition, upon request by the Administrator, the owner or operator would be required to make all information that is collected in conjunction with the monitoring plan available for review during an audit or inspection.

#### B. Wellhead Monitoring Requirements

The EPA is requesting public comment on alternative wellhead monitoring requirements in proposed subpart XXX. One alternative monitoring provision could be in the form of an exclusion from the temperature and oxygen/nitrogen monitoring requirements, or a reduction in the frequency of monitoring. For example, the EPA could reduce the frequency of wellhead monitoring for these three parameters (temperature and oxygen/nitrogen) from monthly to a quarterly or semi-annual schedule. Owners or operators would continue to monitor the wellhead for negative pressure.

The EPA is specifically requesting comment on whether this adjustment should apply only to landfills that beneficially use landfill gas, and if so whether any quantity of the recovered LFG should qualify for alternative wellhead monitoring. Alternatively, the EPA is requesting comment on whether it would be more appropriate to require a certain percentage of the overall recovered LFG to be beneficially used in order to exempt landfills from or reduce the frequency of the wellhead monitoring requirements. The EPA also requests comments on the availability of this flexibility to small entities owning or operating landfills, regardless of beneficial use.

The EPA would provide these alternatives to encourage new landfills to beneficially use landfill gas. Both of these alternative options (exclusion or reduced monitoring frequency) would provide monitoring relief to these landfills. Landfill owners and operators must operate their GCCS in a manner that collects the most landfill gas and minimizes losses of landfill gas through the surface of the landfill. In addition, landfills would still have to prepare and submit to the regulating authority a gas collection design plan, prepared by a professional engineer.

As proposed, subpart XXX requires landfill owners and operators to operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. Instead of having the landfill owner or operator conduct monthly monitoring of temperature and nitrogen/oxygen at the wellheads, the EPA is considering relying on landfill surface emission monitoring requirements in combination with maintenance of negative pressure at wellheads to indicate proper operation of the GCCS and minimization of surface emissions. The potential removal of the temperature and nitrogen/oxygen operational standards and associated wellhead monitoring requirements for these three parameters would be complemented by the surface monitoring provisions discussed in this preamble. As discussed in section VII.F and VIII.F of this preamble, we are reiterating that landfills must monitor all cover penetrations and openings within the area of the landfill where waste has been placed and a gas collection system is required.

Given recent technological advancements in data storage and transmission, the EPA is also considering an alternative to automate the wellhead monthly monitoring provisions. Automation could reduce long-term burden on landfill owner/ operators as well as delegated authorities by allowing for a more frequent, but less labor-intensive, data collection system consisting of remote wellhead sensors (i.e. thermistors, electronic pressure transducers, oxygen cells) and a centralized data logger.

The use of continuous monitoring would allow more immediate detection and repair. This would eliminate the time between when the exceedance of the parameter occurs and when it is detected. It could also improve enforceability of the rule by allowing inspectors to review information on the data logger in real time during a site visit. Another advantage to automating the monitoring is that it could provide flexibility for incorporating additional parameters into the monitoring program. The EPA is soliciting comment on this alternative, including the types of parameters that are best suited for an automated monitoring alternative, examples of successful automated monitoring programs at MSW landfills and their associated costs, additional considerations for equipment calibration, and input on any averaging times that might be appropriate to determine when one or more monitored parameters have been exceeded.

#### C. Enhanced Surface Monitoring Requirements

The EPA is requesting public comment on potential alternative approaches to the surface emission monitoring in proposed subpart XXX. Subpart XXX collection and control requirements are intended for landfills to maintain a tight cover that minimizes any emissions of landfill gas through the surface. The surface emissions monitoring procedures in proposed subpart XXX require quarterly surface emissions monitoring to demonstrate that the cover and gas collection system are working properly. The operational requirements in subpart XXX (40 CFR 60.763(d)) specify that the landfill must "... operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover.'

Proposed subpart XXX requires quarterly monitoring and includes provisions for increased monitoring and corrective procedures if readings above 500 ppm are detected. Instrumentation specifications, monitoring frequencies, and monitoring patterns are structured to provide clear and straightforward procedures that are the minimum necessary to assure compliance.

In this document, we are requesting public comment on potential alternatives to the surface monitoring procedures in proposed subpart XXX. Potential alternatives could include provisions such as those in a California regulation (provisions in California Air **Resources Board**, Final Regulation Order, Methane Emissions from Municipal Solid Waste Landfills (Article 4, Subarticle 6, sections 95460 to 95476, title 17, California Code of Regulations)) and include changing the walking pattern that traverses the landfill, adding an integrated methane concentration measurement, and allowing sampling only when wind is below a certain speed. For subpart XXX, we are requesting

comment on reducing the interval for the walking pattern that traverses the landfill from 30 meters (98 ft.) to 25 ft. We are also requesting comment on the addition of a methane concentration limit of 25 ppm as determined by integrated surface emissions monitoring. This would be in addition to the 500 ppm emission concentration as determined by instantaneous surface emissions monitoring. Integrated surface emissions monitoring provides an average surface emission concentration across a specified area. For integrated surface emissions monitoring, the specified area would be individually identified 50,000 square foot grids. A tighter walking pattern and the addition of an integrated methane concentration would more thoroughly ensure that the collection system is being operated properly, that the landfill cover and cover material are adequate, and that methane emissions from the landfill surface are minimized. As part of these potential changes, the EPA is also considering not allowing surface monitoring when the average wind speed exceeds 5 miles per hour or the instantaneous wind speed exceeds 10 miles per hour because air movement can affect whether the monitor is accurately reading the methane concentration during surface monitoring. We are considering this change because measurements during windy periods are usually not representative of the emissions.

The EPA estimated the costs associated with both the proposed subpart XXX surface monitoring requirements (which are the same as the surface monitoring requirements in subpart WWW) and potential changes to the surface monitoring provisions under the proposed option 2.4/40 and applied them to the set of new landfills that would be subject to control requirements under the respective option. To determine the costs, the EPA used the following assumptions: Most landfills will hire a contractor to conduct the quarterly monitoring. The landfill will incur labor costs based on the time it takes to walk the traverse (hours per acre), the size of the landfill (acres), and a labor rate (dollars per hour). The landfill will also incur an equipment rental rate (dollars per hour). Equipment rental rates are dollars per day/week/month, depending on the size of the landfill and time to traverse the acreage during each quarterly period. See the docketed memo "Methodology for Estimating Testing and Monitoring Costs for the MSW Landfill Regulations. 2014," which contains the details for determining the costs that a landfill would incur to conduct enhanced surface monitoring.

Using the techniques discussed in section V.A of this preamble, the EPA

estimated the number of landfills that are expected to install controls under the baseline, as well as the proposed option 2.5/40. Then, the EPA applied surface monitoring costs to the respective set of landfills because landfills that must install controls must also conduct surface monitoring. Table 5 of this preamble compares the enhanced surface monitoring costs that would be incurred for new landfills under the baseline and proposed option 2.5/40.

Control option	Surface monitoring option	Number of landfills affected	Number of landfills controlling	Total annual cost (2012\$)	Incremental cost	Total cost per controlled landfill	Incremental cost per controlled landfill
Baseline (2.5/50)	No change (30 meter traverse).	17	8	42,300	N/A	5,300	N/A
	Enhanced (25-foot traverse, inte- grated sample).	17	8	312,800	270,500	39,100	33,800
Proposed option (2.5/40).	No change (30 meter traverse).	17	11	50,000	7,700	4,500	700
	Enhanced (25-foot traverse, inte- grated sample).	17	11	362,900	320,600	33,000	29,100

Several factors contribute to the cost of enhanced surface monitoring. Monitoring along a traverse with a 25 ft. interval would increase monitoring time, and thus the labor costs, compared to monitoring along a 30 meter (98 ft.) interval. Monitoring along the tighter traverse pattern would take approximately four times as long, because the distance is approximately four times. For a landfill to conduct the integrated surface emissions monitoring, the EPA assumed the landfill would rent a handheld portable vapor analyzer with a data logger. The data logger is necessary to obtain an integrated reading over a single 50,000 square foot grid. However, the EPA does not expect that requiring an integrated methane concentration would add significant cost because landfills could use the same instrument that they currently use for the instantaneous readings and these instruments can be programmed to provide an integrated value as well as an instantaneous value.

The EPA recognizes that these provisions could reduce surface emissions and that these emissions reductions are difficult to quantify. The EPA also understands that there are potential implementation concerns with these enhanced procedures. Surface monitoring is a labor intensive process and tightening the grid pattern would increase costs. Of the eight landfills expected to install controls under the baseline, it would take these landfills over 29 hours, on average, to complete each quarterly traverse pattern. Tightening the traverse pattern to 25feet instead of 30-meters would require over 79 hours per quarter, or more than 200 additional hours per year compared to the current 30-meter traverse pattern. At this time, the EPA is not proposing surface monitoring provisions that differ from those outlined in subpart WWW, but we are soliciting comment on techniques and data to estimate the emission reductions associated with enhanced surface monitoring.

The EPA is requesting comment on allowing the use of alternative remote measurement and monitoring techniques for landfills that exceed the surface monitoring concentrations in subpart XXX. The EPA would like information to determine whether or not to allow these alternative techniques to be used to demonstrate that surface emissions are below the methane surface concentrations in the subpart XXX. Alternative remote measurement and monitoring techniques may include radial plume mapping (RPM), optical remote sensing, Fourier Transform Infrared (FTIR) spectroscopy, cavity

ringdown spectroscopy (CRDS), tunable diode laser (TDL), tracer correlation, micrometeorological eddy-covariance, static flux chamber, or differential absorption. The EPA is also seeking comment on the frequency of testing and the format of the standard to use these technologies as an alternative to average surface concentration as measured by Method 21. Incorporation of these technologies in subpart XXX would require a change in format of the standard to be consistent with the technology.

#### D. Alternative Emission Threshold Determination Techniques

The EPA is considering adjusting the emission threshold determinations that dictate when a GCCS must be installed, including variations in the modeling parameters as well as adding sitespecific emission threshold determination. These alternatives may provide additional reporting and compliance flexibilities for owners and operators of affected landfills.

#### 1. Modeling Adjustments

As proposed, subpart XXX has three different tiers available to an affected landfill to estimate whether or not the landfill exceeds the NMOC emission threshold of 50 Mg per year. The simplest Tier 1 calculation method uses default values for the potential methane generation capacity  $(L_0)$  and methane generation rate (k) to determine when the landfill exceeds the 50 Mg NMOC per year emission rate cutoff. The default L<sub>0</sub> is 170 m<sup>3</sup> per Mg of waste (equal to 5,458 cubic feet methane per ton of waste) and the k values are 0.05 per year for areas receiving 25 inches or more of rainfall per year and 0.02 per year for areas receiving less than 25 inches of rainfall. The Tier 1 default NMOC concentration is 4,000 ppmv as hexane. If the Tier 1 calculated NMOC exceeds 50 Mg per year, the landfill must install controls or demonstrate, using more complex Tier 2 or 3 procedures, that NMOC emissions are less than 50 Mg per year.

The EPA is soliciting comment on allowing for alternative Tier 1 default values and modeling techniques based on the amount of organics in the waste. For example, the  $L_0$  is a function of the moisture content and organic content of the waste and L<sub>0</sub> decreases as the amount of organic matter decreases. Recent studies have shown that average U.S. landfill L<sub>0</sub> values have decreased 22 percent between 1990 and 2012 (from 102.6 m<sup>3</sup> per Mg of waste to 79.8 m<sup>3</sup> per Mg of waste) due to increased recovery of organic materials.<sup>27</sup> Subpart XXX could allow for landfill-specific L<sub>0</sub> values to be calculated based on the amount of degradable organic carbon (DOC), similar to components of Equation HH-1 in the GHGRP for MSW landfills (40 CFR part 98 subpart HH).

Subpart HH of the GHGRP also provides separate k-values for different types of materials, which could be used as alternate Tier 1 default values in the revised NSPS. Sewage sludge and food waste have the highest k values, followed by garden waste, diapers, paper, textiles, and wood and straw.<sup>11</sup>

The IPCC model employs a modeling method to accommodate separate k and DOC modeling parameters as well as separate calculations for six different categories of organic wastes.<sup>28</sup>

If the EPA incorporates alternative Tier 1 modeling values in subpart XXX, the EPA would also need to allow for an alternative first-order decay model structure to compute a total methane generation rate for the landfill based on the sum of the methane generated from each separate waste stream. This alternative model may incorporate material-specific k and  $L_0$  values, instead of a single pair of k and  $L_0$ values applied to bulk MSW. The EPA requests comment on whether the alternative modeling parameters and model structure in subpart HH, or other default parameters or modeling procedures would be appropriate to use for emission threshold determinations in subpart XXX.

#### 2. Site-Specific Measurements

Under the proposed subpart XXX, there are three different tiers available to an affected landfill to estimate whether or not the landfill exceeds the NMOC emission threshold of 50 Megagrams per year. If an affected landfill fails a Tier 2 test (i.e., the calculated NMOC emissions are greater than 50 Mg/year), then the landfill must conduct Tier 3 testing or install and operate an active GCCS. The EPA received comments while conducting outreach with small entities that recommended a new Tier 4 surface emission monitoring (SEM) demonstration to allow increased flexibility for landfills that exceed modeled NMOC emission rates if they can demonstrate that site-specific methane emissions are low. This SEM demonstration would be conducted using similar procedures in proposed subpart XXX (see proposed 40 CFR 60.765(d)). If the monitoring finds that methane emissions are below a level that the EPA finalizes in the NSPS review, then installation of a GCCS could be delayed.

As an example, the California Air Resources Board (ARB) adopted the Methane Emissions from MSW Landfills regulation in 2009.<sup>29</sup> Under this rule, if a landfill exceeds the waste-in-place and heat input thresholds, the landfill may conduct an SEM demonstration prior to being required to install a GCCS. If the surface methane emissions show any exceedances above 200 ppm the landfill must install a GCCS. This SEM demonstration is similar to the Tier 4 option being considered by the EPA.

The EPA is soliciting comment about this new Tier 4 option or other ideas for more flexible emission threshold determination "Tiers" and what implementation procedures for each determination may be appropriate. As the EPA takes this new Tier 4 option under consideration, there are some implementation procedures that would need to be established. The EPA

requests comment on all aspects of implementing a new Tier 4 option, including the following specific items: (1) Which areas of the landfill would be subject to SEM requirements because these areas would no longer be limited to areas with GCCS installed for applicability purposes; (2) what number of exceedances over a specified time period that would require GCCS installation (proposed subpart XXX specifies a new well must be installed at three or more exceedances in a quarter); (3) what frequency of SEM demonstration (e.g., quarterly monitoring for landfills accepting waste, annual monitoring for closed landfills) is appropriate; and (4) what exceedance level is appropriate for determining if a GCCS must be installed (200 ppm or some other level).

#### X. Impacts of Proposed Revisions

The impacts shown in this section are expressed as the incremental difference between facilities affected by baseline and the proposed reduction of the NMOC emission threshold to 40 Mg/yr from the current NSPS level of 50 Mg/ yr. There are incremental costs, emissions, and secondary impacts associated with capturing and/or utilizing the additional LFG under this proposal.

As discussed in section V.B of this preamble, for most NSPS, impacts are expressed 5 years after the effective date of the rule. However, for the landfills NSPS, impacts are expressed 10 years after (year 2023) because the landfills regulations require controls at a given landfill only after the increasing NMOC emission rate reaches the level of the regulatory threshold. Additionally, the regulations allow the collection and control devices to be capped or removed at each landfill after certain criteria are met, which includes having the GCCS operate a minimum of 15 years. Controls would not be required over the same time period for all landfills. The impacts are a direct result of control; therefore, the annualized impacts change from year to year. By 2023, over half of the modeled new landfills are expected to have installed controls and thus, the EPA considered the impacts of the proposal relative to the baseline in 2023, as discussed in section V.B and VI of this preamble. The methodology for estimating the impacts of the NSPS is discussed in section VI of this preamble and in the docketed memorandum "Methodology for Estimating Cost and Emission Impacts of MSW Landfills Regulations. 2014." The results of applying this methodology to the population of future landfills potentially subject to this proposal are in the

<sup>&</sup>lt;sup>27</sup> Stege, Alex. The Effects of Organic Waste Diversion on LFG Generation and Recovery from U.S. Landfills. SWANA's 37th Annual Landfill Gas Symposium. 2014.

<sup>&</sup>lt;sup>28</sup> Intergovernmental Panel on Climate Change (IPCC), *IPCC Guidelines for National Greenhouse Gas Inventories.* Volume 5 (Waste), Chapter 3 (Solid Waste Disposal). 2006.

<sup>&</sup>lt;sup>29</sup> California Code of Regulations, title 17, subchapter 10, article 4, subarticle 6, section 95463, Methane Emissions from Municipal Solid Waste Landfills.

# Attachment F

U.S. EPA, Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills; Proposed Rules, 80 Fed. Reg. 52,100 (Aug. 27, 2015) (excerpts)

#### ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 60

[EPA-HQ-OAR-2014-0451; FRL-9930-64-OAR]

RIN 2060-AS23

#### Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency.

ACTION: Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing a new subpart that updates the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (Emission Guidelines). The EPA determined that it was appropriate to review the landfills Emission Guidelines based on changes in the landfills industry since the Emission Guidelines were promulgated in 1996. The EPA's review of the Emission Guidelines for municipal solid waste (MSW) landfills applies to landfills that accepted waste after November 8, 1987, and commenced construction, reconstruction, or modification on or before July 17, 2014. Based on its initial review, the EPA has determined that it is appropriate to propose revisions to the Emission Guidelines that reflect changes to the population of landfills and the results of an analysis of the timing and methods for reducing emissions. This action proposes to achieve additional reductions of landfill gas (LFG) and its components, including methane, by lowering the emissions threshold at which a landfill must install controls. This action also incorporates new data and information received in response to an advanced notice of proposed rulemaking and addresses other regulatory issues including surface emissions monitoring, wellhead monitoring, and the definition of landfill gas treatment system.

In addition to considering information received in response to this proposed rule in evaluating potential changes to the Emission Guidelines, the EPA intends to consider the information in evaluating whether changes to the requirements for new sources beyond those in the July 17, 2014, proposed rule for new sources are warranted.

The proposed revisions to the Emission Guidelines, once implemented through revised state plans or a revised federal plan, would reduce emissions of LFG, which contains both nonmethane organic compounds and methane. Landfills are a significant source of methane which is a potent greenhouse gas (GHG) pollutant. These avoided emissions will improve air quality and reduce public health and welfare effects associated with exposure to landfill gas emissions.

#### DATES:

*Comments.* Comments must be received on or before October 26, 2015. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your comments on or before September 28, 2015.

Public Hearing. If anyone contacts the EPA requesting a public hearing by September 1, 2015, the EPA will hold a public hearing on September 11, 2015 from 1:00 p.m. (Eastern Standard Time) to 5:00 p.m. (Eastern Standard Time) at the location in the ADDRESSES section. If no one contacts the EPA requesting a public hearing to be held concerning this proposed rule by September 1, 2015, a public hearing will not take place. Information regarding whether or not a hearing will be held will be posted on the rule's Web site located at http:// www.epa.gov/ttnatw01/landfill/ landflpg.htm. Please contact Ms. Aimee St. Clair at (919) 541-1063 or at stclair.aimee@epa.gov to register to speak at the hearing. The last day to preregister to speak at the hearing will be September 8, 2015.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2014-0451, to the Federal eRulemaking Portal: http:// www.regulations.gov. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the Web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit

http://www2.epa.gov/dockets/ commenting-epa-dockets.

Public Hearing. If a public hearing is held, it will be at the U.S. Environmental Protection Agency building located at 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Information regarding whether or not a hearing will be held will be posted on the rule's Web site located at http:// www.epa.gov/ttnatw01/landfill/ landflpg.htm.

Please see section II.D of the **SUPPLEMENTARY INFORMATION** for detailed information on the public hearing.

Docket: All documents in the docket are listed in the *http://* www.regulations.gov index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in http:// www.regulations.gov or in hard copy at the EPA Docket Center, EPA/DC, EPA WJC West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: For information concerning this proposal, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143–05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541–3154; fax number: (919) 541–0246; email address: ward.hillary@epa.gov.

#### SUPPLEMENTARY INFORMATION:

Acronyms and Abbreviations. The following acronyms and abbreviations are used in this document.

- ACUS Administrative Conference of the United States
- ANPRM Advance notice of proposed rulemaking
- ANSI American National Standards Institute
- ARB Air Resources Board
- BMP Best management practice
- BSER Best system of emission reduction Btu British thermal unit
- CAA Clean Air Act
- CA LMR California Landfill Methane Rule
- CBI Confidential business information
- CDX Central Data Exchange
- CEA Council of Economic Advisers
- CEDRI Compliance and Emissions Data Reporting Interface

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E. Third-Party Design Plan Certification

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Order 13563: Improving Regulation and

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E. Executive Order 13132: Federalism

F. Executive Order 13175: Consultation

and Coordination With Indian Tribal

G. Executive Order 13045: Protection of

H. Executive Order 13211: Actions That

Significantly Affect Energy Supply,

J. Executive Order 12898: Federal Actions

To Address Environmental Justice in

This action proposes changes to the

MSW landfills Emission Guidelines

resulting from the EPA's review of the

Emission Guidelines under Clean Air

review identified a number of advances

in technology and operating practices

our evaluation of those advances and

our understanding of LFG emissions.

The resulting changes to the Emission

additional reductions in emissions of

including methane. This proposed rule

is consistent with the President's 2013

federal agencies to focus on "assessing

current emissions data, addressing data

gaps, identifying technologies and best

incentive-based opportunities to reduce methane emissions." The proposed

President's Climate Action Plan" June 2013. https://

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practices for reducing emissions, and

identifying existing authorities and

changes are also consistent with the

<sup>1</sup>Executive Office of the President, "The

www.whitehouse.gov/sites/default/files/image/

president27sclimateactionplan.pdf.

Climate Action Plan,<sup>1</sup> which directs

Guidelines, if adopted, will achieve

landfill gas and its components,

and the proposed changes are based on

Act (CAA) section 111. The EPA's

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I. National Technology Transfer and

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F. Use of Portable Analyzers for Monitoring

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Oxygen

waste impacts?

- CFR Code of Federal Regulations
- CO<sub>2</sub> Carbon dioxide
- CO<sub>2</sub>e Carbon dioxide equivalent
- Degradable organic carbon DOC EPA
- Environmental Protection Agency ERT Electronic Reporting Tool
- GCCS Gas collection and control system
- GHG Greenhouse gas
- GHGRP Greenhouse Gas Reporting Program
- GWP Global warming potential HAP Hazardous air pollutant
- HOV Higher operating value
- IAMS Integrated assessment models
- ICR Information collection request
- IPCC Intergovernmental Panel on Climate Change
- IRFA Initial regulatory flexibility analysis IWG Interagency working group
- lb/MMBtu Pounds per million British
- thermal unit LCRS Leachate collection and removal system
- LFG Landfill gas
- LFGCost Landfill Gas Energy Cost Model
- LMOP Landfill Methane Outreach Program
- m<sup>3</sup> Cubic meters
- Mg Megagram
- Mg/yr Megagram per year
- mph Miles per hour MSW Municipal solid waste
- mtCO<sub>2</sub>e Metric tons of carbon dioxide equivalent
- MW Megawatt
- MWh Megawatt hour
- NAICS North American Industry Classification System
- NMOC Nonmethane organic compound
- NRC National Research Council
- NSPS New source performance standards
- NTTAA National Technology Transfer and Advancement Act
- OAQPS Office of Air Quality Planning and Standards
- OMB Office of Management & Budget
- PM Particulate matter
- PM<sub>2.5</sub> Fine particulate matter
- ppm Parts per million
- ppmvd Parts per million by dry volume
- RCRA Resource Conservation and Recovery Act
- RFA Regulatory Flexibility Act
- RFS Renewable Fuel Standard
- RIA **Regulatory Impacts Analysis**
- SBAR Small Business Advocacy Review
- SC--CH<sub>4</sub> Social cost of methane
- SC-CO<sub>2</sub> Social cost of carbon dioxide
- SEM Surface emissions monitoring
- SER Small entity representative
- SO<sub>2</sub> Sulfur dioxide
- SSM Startup, shutdown and malfunction Tg Teragram
- TIP Tribal implementation plan
- TTN Technology Transfer Network
- U.S. United States
- USGCRP U.S. Global Change Research Program
- VCS Voluntary consensus standard
- VOC Volatile organic compound WWW World Wide Web

Organization of This Document. The following outline is provided to aid in locating information in this preamble.

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- B. Summary of Major Provisions

- C. Costs and Benefits
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- D. Public Hearing
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- B. Proposed Changes to Monitoring, Recordkeeping, and Reporting C. Emission Threshold Determinations
- D. Proposed Changes To Address Closed or Non-Producing Areas
- E. Other Proposed Changes
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  - C. What emissions and emission reduction programs are associated with existing MSW landfills?
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- B. Wellhead Monitoring Requirements
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- D. Submitting Corrective Action Timeline Requests
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- VII. Rationale for Proposed Alternative Emission Threshold Determination Techniques
- VIII. Proposed Changes To Address Closed or Non-Producing Areas
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  - B. Criteria for Capping or Removing a GCCS
  - C. Non-Producing Areas and Wellhead Standards
- IX. Rationale for the Other Proposed Changes A. Landfill Gas Treatment

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B. Enhanced Surface Emissions Monitoring

B. Startup, Shutdown, and Malfunction

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C. Wet Landfills

C. Definitions and Other Rule Changes

X. Request for Comment on Specific

D. Monitoring Wellhead Flowrate

President's Methane Strategy,<sup>2</sup> which directs EPA's regulatory and voluntary programs to continue to pursue emission reductions through regulatory updates and to encourage LFG energy recovery through voluntary programs. These directives are discussed in detail in section III.A of this preamble. This regulatory action also proposes to either resolve or clarify implementation issues that were previously addressed in amendments proposed on May 23, 2002 (67 FR 36475) and September 8, 2006 (71 FR 53271).

#### 1. Need for Regulatory Action

The EPA reviewed the Emission Guidelines to determine the potential for achieving additional reductions in emissions of LFG. Such reductions would reduce air pollution and the resulting harm to public health and welfare. Significant changes have occurred in the landfill industry over time, including changes to the size and number of existing landfills, industry practices, and gas control methods and technologies. Based on the EPA's initial review, we are proposing changes to the Emission Guidelines. The proposed changes, if adopted, will achieve additional emission reductions of LFG and its components (including methane), provide more effective options for demonstrating compliance, and provide clarification of implementation issues raised during the amendments proposed in 2002 and 2006.

#### 2. Legal Authority

The EPA is not statutorily obligated to conduct a review of the Emission Guidelines, but has the discretion to do so when circumstances indicate that it is appropriate. The EPA has determined that it is appropriate to review and propose changes to the Emission Guidelines at this time based on changes in the landfill industry and changes in the size, ownership, and age of landfills since the Emission Guidelines were promulgated in 1996. The EPA compiled new information on landfills through data collection efforts for a statutorily mandated review of the existing new source performance standards (NSPS) (40 CFR part 60, subpart WWW), public comments received on the NSPS proposal (79 FR 41796, July 17, 2014), and public comments received on the Advanced Notice of Proposed Rulemaking (ANPRM) (79 FR 41772, July 17, 2014)

for a review of the Emission Guidelines. This information is allowing the EPA to assess current practices, emissions, and the potential for additional emission reductions.

#### B. Summary of Major Provisions

The proposed revised Emission Guidelines will ultimately apply to landfills that accepted waste after November 8, 1987,<sup>3</sup> and that commenced construction, reconstruction, or modification on or before July 17, 2014 (the date of publication of proposed revisions to the landfills NSPS, 40 CFR part 60, subpart XXX). The proposed rule provisions are described below.

Thresholds for installing or removing controls. The proposed revised Emission Guidelines retain the current design capacity threshold of 2.5 million megagrams (Mg) and 2.5 million cubic meters (m<sup>3</sup>), but reduce the nonmethane organic compounds (NMOC) emission threshold for the installation and removal of a gas collection and control system (GCCS) from 50 Mg/yr to 34 Mg/yr for landfills that are not closed. As proposed, an MSW landfill that exceeds the design capacity threshold must install and start up a GCCS within 30 months after LFG emissions reach or exceed an NMOC level of 34 Mg/vr NMOC. (A megagram is also known as a metric ton, which is equal to 1.1 U.S. short tons or about 2,205 pounds.) Consistent with the existing Emission Guidelines, the owner or operator of a landfill may control the gas by routing it to a non-enclosed flare, an enclosed combustion device, or a treatment system that processes the collected gas for subsequent sale or beneficial use.

Landfill Gas Treatment. The EPA is proposing to address two issues related to LFG treatment. First, the EPA is proposing to clarify that the use of treated LFG is not limited to use as a fuel for a stationary combustion device but also allows other beneficial uses such as vehicle fuel, production of high-Btu gas for pipeline injection, and use as a raw material in a chemical manufacturing process. Second, the EPA is proposing to define Treated landfill gas as LFG processed in a treatment system meeting the requirements in 40 CFR part 60, subpart Cf and to define Treatment system as a system that

filters, de-waters, and compresses LFG for sale or beneficial use. The proposed definition allows the level of treatment to be tailored to the type and design of the specific combustion or other equipment for other beneficial uses such as vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical manufacturing process in which the LFG is used. Owners or operators would develop a site-specific treatment system monitoring plan that would include monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated LFG. They would also keep records that demonstrate that such parameters effectively monitor filtration, de-watering, and compression system performance necessary for the end use of the treated LFG.

Surface Monitoring. The EPA proposes monitoring of all surface penetrations for existing landfills. In proposed 40 CFR part 60, subpart Cf, landfills must conduct surface emissions monitoring (SEM) at all cover penetrations and openings within the area of the landfill where waste has been placed and a gas collection system is required to be in place and operating according to the operational standards in proposed 40 CFR part 60, subpart Cf. Specifically, landfill owners or operators must conduct surface monitoring on a quarterly basis at the specified intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover and all cover penetrations.

Emission Threshold Determination. The EPA is proposing an alternative site-specific emission threshold determination for when a landfill must install and operate a GCCS. This alternative emission threshold determination, referred to as "Tier 4," is based on surface emission monitoring and demonstrates that surface emissions are below a specific threshold. The Tier 4 SEM demonstration would allow landfills that exceed modeled NMOC emission rates using Tiers 1, 2, or 3 to demonstrate that site-specific surface methane emissions are low. A landfill that can demonstrate that surface emissions are below 500 parts per million (ppm) for 4 consecutive quarters would not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded.

*Wellhead Operational Standards.* The EPA proposes to remove the operational

<sup>&</sup>lt;sup>2</sup> Executive Office of the President, "Climate Action Plan Strategy to Reduce Methane, March 2014. https://www.whitehouse.gov/sites/default/ files/strategy\_to\_reduce\_methane\_emissions\_2014-03-28\_final.pdf.

<sup>&</sup>lt;sup>3</sup> This date in 1987 is the date on which permit programs were established under the Hazardous and Solid Waste Amendments of the Resource, Conservation and Recovery Act (RCRA) which amended the Solid Waste Disposal Act (SWDA), 42 U.S.C. 6901–6992k. This date was also selected as the regulatory cutoff in the EG for landfills no longer receiving wastes because the EPA judged States would be able to identify active facilities as of this date.

EPA believes these adjustments provide more flexibility to landfills, can result in additional reductions of LFG emissions from other GCCS components, and will reduce the burden of corrective action on both the landfill owner or operator and the implementing authority. Based on public input, the EPA expects that eliminating the operational standards for oxygen/nitrogen and temperature will drastically reduce the number of requests for HOVs and alternative timelines for making corrections while ensuring that the GCCS continues to operate properly. The procedures for approving HOVs for wellheads not demonstrating compliance with the negative pressure standard are discussed in section VI.D of this preamble.

While the EPA is proposing to remove the requirement to meet operational standards for temperature and nitrogen/ oxygen, the EPA is proposing that landfill owners or operators continue monthly monitoring and recordkeeping of the wellhead temperature and oxygen/nitrogen values, consistent with operational guidance documents and best practices for operating a GCCS in a safe and efficient manner.<sup>62 63</sup> Based on our evaluation of commenters' concern that the oxygen/nitrogen and temperature operational standards can be a limiting factor in promoting earlier and more robust collection of LFG, the EPA is proposing to no longer require the landfill to take corrective action if the monitoring of these parameters demonstrates that a particular value or values is/are exceeded. The EPA is proposing that landfill owners or operators continue monitoring these parameters because, as several industry commenters and regulatory agencies stated, the measurement of these parameters can still serve as useful guidance for landfill operators and landfill gas energy project operators because they assess GCCS performance and thus help to periodically adjust or "tune" the GCCS to minimize LFG emissions and maintain safe operating conditions at the landfill. The equipment used to monitor wellheads commonly includes these parameters, so these parameters can be measured at the same time the technician monitors wellhead pressure without imposing additional burden. The results of this monthly wellhead monitoring will now be kept as records on site because the EPA continues to believe these data will be useful for implementing authorities

when approving modifications to the original GCCS design plan, or when conducting inspections of the site.

The requirement to maintain negative pressure at each wellhead ensures that gas is being routed to a GCCS that was designed and built in accordance with a GCCS design plan that has been approved by a professional engineer. The EPA believes these wellhead standards, together with the surface emission monitoring requirements, are effective and limit the possibility of surface emissions of LFG. This approach also allows landfills and state regulators the time and flexibility to determine the appropriate response for adjusting wellfield operations, as needed, without imposing overly prescriptive requirements. This approach also provides increased flexibility for landfills to install supplemental and temporary gas collection components to achieve additional reductions of LFG without the risk of exceeding oxygen/ nitrogen or temperature operational standards.

# C. Requirements for Updating the Design Plan

The EPA is proposing criteria for when an affected source must update its design plan and submit it to the implementing authority for approval. We are proposing that a revised design plan must be submitted as follows: (1) Within 90 days of expanding operations to an area not covered by the previously approved design plan, and (2) prior to installing or expanding the gas collection system in a manner other than as described in a previously approved design plan.

The EPA is proposing site-specific design plan review and approval procedures that recognize the unique site-specific topography, climate, and other factors affecting the design of the GCCS. However, the EPA solicits comment on ways to streamline the design plan submission and approval procedures as part of its review of the Emission Guidelines. Examples of streamlining may include the potential development of a process by which approved alternative operating parameters could be automatically linked to updates of design plans or development of a process by which alternative operating parameters and updated design plans could be approved on a similar schedule.

#### D. Submitting Corrective Action Timeline Requests

We have included provisions in proposed 40 CFR part 60, subpart Cf (40 CFR 60.36f(a)(3)) to clarify our intent that agency approval of corrective action

timelines is required only if a landfill does not fix an exceedance in 15 days and is unable to or does not plan to expand the gas collection system within 120 days. The EPA is clarifying that "expansion" of the GCCS means a permanent change that increases the capacity of the GCCS, such as increasing the size of header pipes, increasing the blower sizes and capacity, and increasing the number of wells. Excluding system expansion, all other types of corrective actions expected to exceed 15 calendar days should be submitted to the agency for approval of an alternate timeline. In addition, if a landfill owner or operator expects the system expansion to exceed the 120-day allowance period, it should submit a request and justification for an alternative timeline. We have not proposed a specific schedule for submitting these requests for alternative corrective action timelines because investigating and determining the appropriate corrective action, as well as the schedule for implementing the corrective action, will be site specific and depend on the reason for the exceedance. We clarify that a landfill should submit an alternative timeline request as soon as possible (*i.e.*, as soon as the owner or operator knows that it would not be able to correct the exceedance in 15 days or expand the system in 120 days) to avoid being in violation of the rule. If the landfill were to wait until 120 days after the exceedance to submit an alternative timeline, then by the time the regulatory agency has the chance to review the timeline and determine if it is approvable, the landfill will already be in violation of the requirement to expand the system within 120 days. After submitting the alternative timeline request, the landfill should work with its permitting authority to communicate the reasons for the exceedances, status of the investigation, and schedule for corrective action.

To address implementation concerns associated with the time allowed for corrective action, the EPA requests comment on an alternative that extends the requirement for notification from 15 days to as soon as practicable, but no later than 60 days from when an exceedance is identified. Many requests for an alternative compliance timeline express the need for additional time to make necessary repairs to a well that requires significant construction activities. Extending the time period to as soon as practicable, but no later than 60 days, may reduce the burden associated with the approval of an alternative timeline and ensure

<sup>&</sup>lt;sup>62</sup> http://www.epa.ohio.gov/portals/27/engineer/ eguides/guide78.pdf.

<sup>&</sup>lt;sup>63</sup> http://www.nrel.gov/docs/legosti/fy97/ 23070.pdf.

sufficient time for correction without significant environmental detriment. If the EPA were to extend the time period to as soon as practicable, but no later than 60 days, then the EPA is also considering the removal of the provision to submit an alternative timeline for correcting the exceedance. Thus, by no later than day 60, the landfill would have to either have completed the adjustments and repairs necessary to correct the exceedance, or be prepared to have the system expansion completed by day 120. The EPA is also requesting input on whether 60 days is the appropriate amount of time to allow owners or operators to make the necessary repairs.

#### E. Electronic Reporting

In this proposal, the EPA is describing a process to increase the ease and efficiency of performance test data submittal while improving data accessibility. Specifically, the EPA is proposing that owners or operators of MSW landfills submit electronic copies of required performance test and performance evaluation reports by direct computer-to-computer electronic transfer using the EPA-provided software. The direct computer-tocomputer electronic transfer is accomplished through the EPA's Central Data Exchange (CDX) using the **Compliance and Emissions Data** Reporting Interface (CEDRI). The CDX is the EPA's portal for submittal of electronic data. The EPA-provided software is called the Electronic Reporting Tool (ERT), which is used to generate electronic reports of performance tests and evaluations. The ERT generates an electronic report package that will be submitted using the CEDRI. The submitted report package will be stored in the CDX archive (the official copy of record) and the EPA's public database called WebFIRE. All stakeholders will have access to all reports and data in WebFIRE and accessing these reports and data will be very straightforward and easy (see the WebFIRE Report Search and Retrieval link at http://cfpub.epa.gov/webfire/ index.cfm?action=fire.

searchERTSubmission). A description and instructions for use of the ERT can be found at http://www.epa.gov/ttn/ chief/ert/index.html, and CEDRI can be accessed through the CDX Web site at www.epa.gov/cdx. A description of the WebFIRE database is available at http:// cfpub.epa.gov/oarweb/index.cfm? action=fire.main.

The proposal to submit performance test data electronically to the EPA applies only to those performance tests conducted using test methods that are supported by the ERT. The ERT supports most of the commonly used EPA reference methods. A listing of the pollutants and test methods supported by the ERT is available at *http:// www.epa.gov/ttn/chief/ert/index.html.* 

We believe that industry would benefit from this proposed approach to electronic data submittal. Specifically, by using this approach, industry will save time in the performance test submittal process. Additionally, the standardized format that the ERT uses allows sources to create a more complete test report resulting in less time spent on data backfilling if a source failed to include all data elements required to be submitted. Also through this proposal, industry may only need to submit a report once to meet the requirements of the applicable subpart because stakeholders can readily access these reports from the WebFIRE database. This also benefits industry by cutting back on recordkeeping costs as the performance test reports that are submitted to the EPA using CEDRI are no longer required to be retained in hard copy, thereby, reducing staff time needed to coordinate these records.

Since the EPA will already have performance test data in hand, another benefit to industry is that fewer or less substantial data collection requests in conjunction with prospective required residual risk assessments or technology reviews will be needed. This would result in a decrease in staff time needed to respond to data collection requests.

State, local, and tribal air pollution control agencies will also benefit from having electronic versions of the reports they are now receiving because they will be able to conduct a more streamlined and accurate review of electronic data submitted to them. For example, the ERT would allow for an electronic review process, rather than a manual data assessment, making review and evaluation of the source provided data and calculations easier and more efficient. In addition, the public will also benefit from electronic reporting of emissions data because the electronic data will be easier for the public to access. How the air emissions data are collected, accessed, and reviewed will be more transparent for all stakeholders.

One major advantage of the proposed submittal of performance test data through the ERT is a standardized method to compile and store much of the documentation required to be reported by this rule. The ERT clearly states what testing information would be required by the test method and has the ability to house additional data elements that might be required by a delegated authority.

In addition, the EPA must have performance test data to conduct effective reviews of CAA section 111 standards, as well as for many other purposes, including compliance determinations, emission factor development, and annual emission rate determinations. In conducting these required reviews, the EPA has found it ineffective and time consuming, not only for us, but also for regulatory agencies and source owners or operators, to locate, collect, and submit performance test data. In recent years, stack testing firms have typically collected performance test data in electronic format, making it possible to move to an electronic data submittal system that would increase the ease and efficiency of data submittal and improve data accessibility.

A common complaint from industry and regulators is that emission factors are outdated or not representative of a particular source category. With timely receipt and incorporation of data from most performance tests, the EPA would be able to ensure that emission factors, when updated, represent the most current range of operational practices. Finally, another benefit of the proposed data submittal to WebFIRE electronically is that these data would greatly improve the overall quality of existing and new emissions factors by supplementing the pool of emissions test data for establishing emissions factors

In summary, in addition to supporting regulation development, control strategy development, and other air pollution control activities, having an electronic database populated with performance test data would save industry, state/ local/tribal agencies, and the EPA significant time, money, and effort while also improving the quality of emission inventories, air quality regulations, and enhancing the public's access to this important information.

#### VII. Rationale for Proposed Alternative Emission Threshold Determination Techniques

The EPA is proposing an emission threshold determination based on sitespecific surface emissions monitoring (SEM) that provides flexibility for when a landfill must install and operate a GCCS. If the owner or operator limits landfill surface methane emissions and can demonstrate that those emissions are below 500 ppm methane for 4 consecutive quarters, then the requirement to install a GCCS is not triggered even though estimates using Tiers 1, 2, and/or 3 may show that the landfill's annual NMOC emissions have exceeded the regulatory threshold. In device is not operating. Landfill owners or operators would keep records of the estimated emissions and would report the information in the annual compliance report.

As discussed above, malfunctions are by definition sudden, infrequent and not reasonably preventable failures of emissions control, process or monitoring equipment. Further, there are myriad different types of malfunctions that can occur and there are significant difficulties associated with predicting or accounting for the frequency, degree, and duration of various malfunctions that might occur. As a result, the EPA believes that it is generally not technically feasible to establish an alternative emission standard that would apply during periods of malfunction. The EPA also believes that it would be difficult to defend an alternative standard that does not achieve a level of emission reduction comparable to that required by the standard that applies during periods of normal operation in circumstances where there are steps that an owner or operator could take to achieve such reductions such as shutting down the process or having a second control device. In the immediate case, by shutting down the flow to the flare or other control device a source is unlikely to be in violation of the 98 percent emission reduction requirement since there will be no gas flowing to the control device. We are, however, interested in comment on whether there are alternative ways in which the emission limit could be complied with when the control device malfunctions.

#### C. Definitions and Other Rule Changes

We propose to include definitions of "household waste" and "segregated vard waste" in proposed 40 CFR part 60, subpart Cf to clarify our intent regarding the applicability of proposed subpart Cf to landfills that do not accept household waste, but accept segregated yard waste. We also proposed to exclude construction and demolition waste from the definition of household waste. We intend for subpart Cf to apply to MSW landfills that accept general household waste (including garbage, trash, sanitary waste), as indicated in the definitions. We do not intend the landfills rules to apply to landfills that accept only segregated yard waste or a combination of segregated yard waste and nonhousehold waste such as construction and demolition waste.

## X. Request for Comment on Specific Provisions

#### A. Defining Closed Areas of Open Landfills

In the ANPRM for the Emission Guidelines (79 FR 41772), the EPA requested input on how non-producing areas of the landfill, *i.e.*, areas that are no longer generating landfill gas, could be excluded from gas collection requirements when designing a GCCS (79 FR 41792). The EPA also sought input on whether the current criteria for capping or removing a GCCS are appropriate, one of which requires that the landfill be closed (79 FR 41783). As discussed in section VIII.B of this preamble, we are proposing a second set of alternative criteria for capping or removing the GCCS at closed landfills or closed areas of active landfills, based on surface emissions monitoring.

Commenters expressed concern with the requirement for closed areas to be physically separated in order to be excluded from GCCS requirements, noting that many closed areas of active landfills are non-producing but remain physically connected to other areas of the landfill.

To help address the difficulty of controlling landfill gas in lowproducing areas, the EPA is proposing an alternative set of criteria for capping or removing the GCCS that employs a SEM demonstration: (1) The landfill is closed or an area of an active landfill is closed, (2) the GCCS has operated for at least 15 years or the landfill owner or operator can demonstrate that the GCCS will be unable to operate for 15 years due to declining gas flows, and (3) the landfill or closed area demonstrates for 4 consecutive quarters that there are no surface emissions of 500 ppm or greater. The EPA is also requesting comment on whether owners or operators of physically separated, closed areas of landfills may model NMOC emission rates, or may determine the flow rate of landfill gas using actual measurements, to determine NMOC emissions in order to identify areas that can be excluded from gas collection. The EPA considers areas to be physically separated if they have separate liners and gas cannot migrate between the separate areas.

To further address non-producing areas, proposed 40 CFR part 60, subpart Cf contains procedures for excluding areas from gas collection and control. Owners or operators of landfills with physically separated, closed areas may demonstrate that the quantity of NMOC emissions from the area is less than 1 percent of the total NMOC emissions from the entire landfill, and thus exclude the area from control. Under proposed 40 CFR part 60, subpart Cf, owners or operators of landfills with physically separated, closed areas may model NMOC emission rates, or may determine the flow rate of landfill gas using actual measurements, to determine NMOC emissions. Using actual flow measurements would yield a more precise measurement of NMOC emissions for purposes of demonstrating the closed area represents less than 1 percent of the landfills total NMOC emissions.

Because both of these topics rely on defining a closed area of a landfill, the EPA requests comment on how to define closed areas of open landfills.

#### B. Enhanced Surface Emissions Monitoring

The proposed 40 CFR part 60, subpart Cf collection and control requirements are intended to ensure that landfills maintain a tight cover that minimizes any emissions of landfill gas through the surface. The surface emissions monitoring procedures in proposed 40 CFR part 60, subpart Cf are consistent with 40 CFR part 60, subpart WWW and require quarterly surface emissions monitoring to demonstrate that the cover and gas collection system are working properly. However, we are also considering and requesting additional public input on a potential alternative approach to surface emissions monitoring.

The alternative surface monitoring approach includes changing the walking pattern that traverses the landfill from 30 meters (98 ft) to 25 ft and adding a methane concentration limit of 25 ppm as determined by integrated surface emissions monitoring. This would be in addition to the 500 ppm emission concentration as determined by instantaneous surface emissions monitoring. Integrated surface emissions monitoring provides an average surface emission concentration across a specified area. For integrated surface emissions monitoring, the specified area would be individually identified 50,000 square ft grids. A tighter walking pattern and the addition of an integrated methane concentration limit would more thoroughly ensure that the collection system is being operated properly, that the landfill cover and cover material are adequate, and that methane emissions from the landfill surface are minimized in all types of climates. As part of these potential changes, the EPA is also considering not allowing surface monitoring when the average wind speed exceeds 5 miles per hour (mph) or the instantaneous wind speed exceeds 10 mph because air movement can affect whether the

monitor is accurately reading the methane concentration during surface monitoring. We are considering this change because conducting surface emissions monitoring during windy periods may not yield readings that are representative of the emissions. The EPA requested public comment on this same enhanced approach in the landfills NSPS (79 FR 41822) and ANPRM (79 FR 41789).

Many commenters supported the enhanced surface monitoring provisions for detecting surface emissions. A state agency supported reducing the traverse pattern to 25 feet, stating that the tighter traverse pattern would increase the chance of detecting exceedances. An environmental organization supported all elements of the enhanced surface monitoring and contended that the current monitoring at 30 meter intervals leaves most areas of the landfill unmonitored. Both these commenters suggested that the walking pattern be varied each quarter (*i.e.*, offset by 10 meters) to monitor additional areas over time. The environmental organization supported an integrated reading because it would be a better indicator of GCCS performance and they contended that the additional costs were not unreasonable.

Many commenters opposed the enhanced surface monitoring provisions. Commenters that opposed the enhanced surface monitoring provisions primarily cited the additional costs and contended that the additional expense was not warranted because of limited environmental benefits. Two commenters commissioned a study to compare the level of effort and monitoring results of the CA LMR to the SEM requirements under the current NSPS (40 CFR part 60, subpart WWW). The CA LMR utilizes a 25 ft traverse pattern, an instantaneous as well as integrated reading, and prevents sampling during windy conditions (greater than 5 mph average and greater than 10 mph instantaneous).

The study examined monitoring results for eight quarters of NSPS surface monitoring at 42 California landfills, encompassing 27,140 acres. Those results were compared to CA

LMR surface monitoring for 10 quarters at 72 California landfills, including the 42 landfills conducting NSPS surface monitoring, encompassing a total of 57,151 acres. Among other observations, the study concludes that although the CA LMR surface emission monitoring requirements detected 2.1 percent more exceedances than NSPS surface emission monitoring requirements, detecting these additional exceedances is not cost effective. The study also concluded that under the NSPS monitoring, only one landfill was required to expand its GCCS, while under the CA LMR monitoring, only three landfills were required to expand the GCCS. The two commenters that commissioned the study contended that the additional cost to conduct enhanced surface monitoring, estimated by the EPA to be seven times more expensive than NSPS monitoring, was an extraordinary amount of money to spend detecting exceedances at merely an additional 2.8 percent of acres monitored, while increasing gas collection at only one landfill.

The EPA examined the data supporting the study as provided by one of the commenters. The data allowed for direct comparison of exceedance data from 29 landfills, although for different time periods. The study and supporting data provide evidence of greater exceedances under the California approach than the current approach. However, the EPA was unable to determine the magnitude of emission reductions that might result from the greater exceedances under the California approach. See the docketed memorandum entitled "Analysis of Surface Exceedances from California Landfills under the New Source Performance Standards and the California Landfill Methane Rule."

Many commenters, including many state agencies, opposed limiting surface monitoring during windy conditions, stating that the wind restrictions would be a significant inhibitor to completing the required monitoring in many regions of the country due to typical windy conditions. Commenters also stated that it would be difficult to schedule and reschedule dedicated sampling crews and conditions could change quickly during sampling events, causing crews to stop monitoring.

For proposed 40 CFR part 60, subpart Cf, the EPA estimated the costs associated with both the proposed subpart Cf surface monitoring requirements (which are the same as the surface monitoring requirements in 40 CFR part 60, subpart ŴWW) and potential changes to the surface monitoring provisions under the proposed 2.5/34 option and the proposed 2.5/40 option and applied them to the set of existing landfills that would be subject to control requirements under the respective option. To determine the costs, the EPA used the following assumptions: Most landfills will hire a contractor to conduct the quarterly monitoring. The landfill will incur labor costs based on the time it takes to walk the traverse (hours per acre), the size of the landfill (acres), and a labor rate (dollars per hour). The landfill will also incur an equipment rental rate (dollars per hour) as well as a flat fee for purchasing calibration gases and hydrogen to fuel the equipment. Equipment rental rates are dollar per day/week/month, depending on the size of the landfill and time to traverse the acreage during each quarterly period. See the docketed memo, "Updated Methodology for Estimating Testing and Monitoring Costs for the MSW Landfill Regulations. 2015," which contains the details for determining the costs that a landfill would incur to conduct enhanced surface monitoring.

Using the techniques discussed in section V.B of this preamble, the EPA estimated the number of landfills that are expected to install controls under the baseline, as well as the proposed option 2.5/34 and option 2.5/40. Then, the EPA applied surface monitoring costs to the respective set of landfills because landfills that must install controls must also conduct surface monitoring. Table 4 of this preamble compares the enhanced surface monitoring costs that would be incurred for new landfills under the baseline and proposed option 2.5/34 and proposed option 2.5/40.

TABLE 4—COMPARISON OF BASELINE SURFACE MONITORING VERSUS ENHANCED SURFACE MONITORING IN 2025

Control option	Surface monitoring type	Number of landfills controlling	Annual cost	Incremental cost	Total cost per controlled landfill	Incremental cost per con- trolled landfill
Baseline 2.5/50 (2.5 million Mg design capacity/50 Mg/yr NMOC).	No change (30 meter tra- verse).	574	6,327,000	NA	11,000	NA
	Enhanced (25-foot traverse, integrated sample).		43,831,000	37,504,000	76,400	65,300

Control option	Surface monitoring type	Number of landfills controlling	Annual cost	Incremental cost	Total cost per controlled landfill	Incremental cost per con- trolled landfill
Option 2.5/40 (2.5 million Mg design capacity/40 Mg/yr NMOC).	No change (30 meter tra- verse).	636	6,741,000	414,000	10,600	700
<b>3 3 3 3</b>	Enhanced (25-foot traverse, integrated sample).		46,746,000	40,419,000	73,500	63,600
Proposed Option 2.5/34 (2.5 million Mg design capac- ity/34 Mg/vr NMOC).	No change (30 meter tra- verse).	680	7,062,000	735,000	10,400	1,100
,	Enhanced (25-foot traverse, integrated sample).		49,037,000	42,710,000	72,100	62,800

TABLE 4—COMPARISON OF BASELINE SURFACE MONITORING VERSUS ENHANCED SURFACE MONITORING IN 2025— Continued

Several factors contribute to the cost of enhanced surface monitoring. Monitoring along a traverse with a 25 ft. interval would increase monitoring time, and thus the labor costs, compared to monitoring along a 30 meter (98 ft.) interval. Monitoring along the tighter traverse pattern would take approximately 4 times as long, because the distance is approximately 4 times greater. For a landfill to conduct the integrated surface emissions monitoring, the EPA assumed the landfill would rent a handheld portable vapor analyzer with a data logger. The data logger is necessary to obtain an integrated reading over a single 50,000 square foot grid. However, the EPA does not expect that requiring an integrated methane concentration would add significant cost because landfills could use the same instrument that they currently use for the instantaneous readings and these instruments can be programmed to provide an integrated value as well as an instantaneous value.

The EPA recognizes that these provisions could reduce surface emissions and that these emissions reductions are difficult to quantify. The EPA also understands that there are potential implementation concerns with these enhanced procedures. Surface monitoring is a labor intensive process and tightening the grid pattern would increase costs. Of the 574 landfills expected to be controlling in 2025 under the baseline, it would take these landfills over 42 hours, on average, to complete each quarterly traverse pattern. Tightening the traverse pattern to 25 ft instead of 30 meters would require over 165 hours per quarter, or nearly 500 additional hours per year, per landfill, compared to the current 30meter traverse pattern.

At this time, the EPA is not proposing surface monitoring provisions that differ from those outlined in 40 CFR part 60, subpart WWW, but we are soliciting comment on the various elements of enhanced surface emissions monitoring (the width of the traverse pattern, offsetting the walking pattern each quarter (*i.e.*, offset by 10 meters), an integrated reading of 25 ppm, and restrictions during windy conditions), as well as techniques and data to estimate the emission reductions associated with enhanced surface monitoring.

#### C. Wet Landfills

In the ANPRM (79 FR 41784), we solicited input on separate thresholds for wet landfills and how wet landfills might be defined. Among other concerns, we received feedback from commenters expressing concern on potential overlap between wet landfills handled under the Emission Guidelines and bioreactor landfills handled under 40 CFR part 63, subpart AAAA (National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills). A landfill is defined as a bioreactor under 40 CFR part 63, subpart AAAA if it has added liquids other than leachate into the waste mass in a controlled fashion; 68 such bioreactor landfills are required to install and operate a GCCS on an accelerated schedule compared to nonbioreactor landfills. Once a landfill is required to install and operate a GCCS under either 40 CFR part 63, subpart AAAA, or 40 CFR part 60, subparts WWW and Cc, the GCCS requirements are the same. In addition to bioreactors as defined under 40 CFR part 63, subpart AAAA, the EPA is aware of 31 bioreactor projects permitted under the research, development, and

demonstration (RD&D) rule in 11 states and one project on tribal lands.<sup>69</sup> These bioreactor landfills generally do not meet the 40 percent by weight moisture component of the bioreactor definition in 40 CFR part 63, subpart AAAA. Based on the options analyzed and presented in Table 3 of this preamble, proposed option 2.5/34 is estimated to achieve reductions of NMOC and methane emissions at 651 existing open landfills in year 2025. Of these 651 landfills, 18 are identified as having RD&D permits, which permit liquids addition; 343 are located in areas receiving greater than 40 inches of precipitation each year; and an additional 16 landfills report leachate recirculation activities and a k value of  $0.057 \ year^{-1}$  or greater to subpart HH of the GHGRP, but are not located in areas receiving 40 inches of precipitation or more, for a total of 377 "wet" landfills out of those required to control emissions.

Collectively, reductions from these 377 wet landfills constitute approximately 50 percent of the incremental reductions achieved by the proposed option 2.5/34. Nearly all of these incremental reductions are coming from the 343 landfills that are located in areas receiving 40 inches of precipitation or more. Based on this analysis, the NMOC threshold of 34 Mg/yr in this proposal achieves significant reduction in emissions from wet landfills.

The EPA conducted a preliminary analysis to determine the additional reductions that could be achieved if the initial lag time was shortened by 1 year and the expansion lag time was shortened by 2 years and applied to open wet landfills in addition to the lower NMOC emission threshold of 34 Mg/yr. The results of this analysis show

<sup>&</sup>lt;sup>68</sup> Under 40 CFR part 63, subpart AAAA, bioreactor means a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

<sup>&</sup>lt;sup>69</sup> EPA/600/R–14/335. Permitting of Landfill Bioreactor Operations: Ten Years after the RD&D Rule.

that an additional approximately 220 Mg/yr of reductions in NMOC emissions and 35,200 Mg/yr of reductions in methane (879,000 mtCO<sub>2</sub>e/yr) could be achieved from these 377 wet landfills in 2025.

It is important to note that the impacts of the options in Table 3 as well as this preliminary analysis of wet landfills were conducted using a k value of 0.04 for any landfill that is located in an area with at least 25 inches of rainfall, consistent with the analysis discussed at 79 FR 41805. This modeling parameter was used for all but nine of the 377 wet landfills discussed above. Those nine landfills, which are either RD&D landfills or reported significant leachate recirculation to subpart HH of the GHGRP were modeled using a k value of 0.02 because they were located in arid areas.

The results of the impacts analyses presented in Table 3 of this preamble and above could differ significantly if alternative modeling parameters (k and/ or L<sup>o</sup>) were used to model emissions from this group of wet landfills. For example, subpart HH of the GHGRP uses a k value of 0.057 for landfills that exceed 40 inches per year when considering both leachate recirculation and precipitation. The EPA also identified a study containing alternative k values for five different bioreactor landfills.<sup>70</sup> One commenter urged the EPA to consider more representative k values when calculating emission reductions from wet landfills, and cited several studies for EPA review.71 72 73 This commenter also requested that the EPA adopt shorter lag times for these wet landfills. Another commenter urged the EPA to finalize the changes proposed in 2009 to AP-42 emission factors for MSW landfills, which included a much higher k value of 0.3 for wet landfills, among other changes.<sup>74</sup> Another commenter provided input that leachate recirculation will have negligible impact

<sup>73</sup> Barlaz et al., Controls on Landfill Gas Collection Efficiency: Instantaneous and Lifetime Performance 59 J. Air & Waste Mgmt. Ass'n 1399, 1402–03 (Dec. 2009).

<sup>74</sup> U.S. EPA AP 42, Fifth Edition, Volume I, Chapter 2, Draft Section 2.4: Solid Waste Disposal http://www.epa.gov/ttn/chief/ap42/ch02/draft/ d02s04.pdf. on the total precipitation value that ultimately dictates which k value to use. This commenter also referenced its prior comments expressing concerns that the draft AP–42 k value for wet landfills was too high, and provided several studies containing alternative k values for wet landfills.<sup>75 76 77</sup>

Given the additional emission reductions that could be achieved from shortening the lag times at wet landfills and in consideration of the President's Methane Strategy, the EPA is soliciting input on whether the wet landfills not subject to the requirements in 40 CFR part 63, subpart AAAA should be subject to different schedules for installing and expanding their GCCS under the Emission Guidelines. Additionally, the EPA requests comment on how these wet landfills that are not bioreactors (as defined in subpart AAAA) might be defined. Finally, recognizing the wide range of k values used to model emissions at wet landfills (0.057 to 0.3), the EPA requests comment and data to support revising the k value used for assessing the impacts on wet landfills, as well as the k value landfills should use in Tier 1 and Tier 2 emission threshold determinations. The EPA also requests comment on whether revisions to the k value for wet landfills would require changes to the Lo modeling parameter for wet landfills.

#### D. Monitoring Wellhead Flowrate

Based on comments received and discussed in section VI.B of this preamble, as well as the proposal to eliminate the operating standards for oxygen/nitrogen and temperature, the EPA is requesting input on whether it should add a requirement to monitor wellhead flowrate to help ensure a welloperated GCCS. Monitoring wellhead flow rate would allow the landfill owner or operator to detect low gas flow and whether a well is waterlogged, clogged, or pinched. The EPA is also requesting comment on any other wellhead monitoring parameters that would help ensure a well-operated GCCS.

## E. Third-Party Design Plan Certification Program

In the ANPRM for existing landfills (79 FR 41784, July 17, 2014), the EPA solicited input on the possibility of establishing a third-party design plan certification program and provided examples of several rules and programs with third-party verification components. The third-party program would supplement or replace the current approach of requiring EPA or state review and approval of sitespecific design plans and plan revisions with a program whereby independent third parties would review the design plans, determine whether they conform to applicable regulatory criteria, and report their findings to the approved state programs or the EPA (for states without approved programs). The process of approving site-specific design plans and plan revisions can be extremely resource-intensive for regulators and regulated entities alike. The EPA believes modifying the regulations to provide for the review and approval of the plans by competent and independent third parties could reduce these burdens. Such an independent program would need to be designed to ensure that, among other things, the third parties are competent, accurate, independent, and appropriately accredited. The program would also need to ensure that the reviews are thorough, independent, and conducted pursuant to clear and objective design plan review criteria. Finally, the program would need to ensure that the system is transparent, including requiring appropriate public disclosures, and that there is regular and effective oversight of the third-party system. Some criteria for auditor competence, independence, reporting, and oversight requirements provisions might include the following:

• Engaging a third-party inspection team (team) and submitting the members' resumes and qualifications to EPA;

• Requiring the team to have at least one person with landfill industry expertise acceptable to the EPA, one expert in environmental compliance auditing, and one expert in chemical process safety management;

• Restricting team members to those who have not previously performed work for the respondents;

• Restricting team members from working for the respondents or any of the respondents' officers for 5 years after completion of inspections;

• After giving the respondents notice of the first upcoming inspection, restricting the team from

<sup>&</sup>lt;sup>70</sup> Barlaz, Morton et al., Performance of North American Bioreactor Landfills II: Chemical and Biological Characteristics. Journal of Environmental Engineering. Volume 136, No. 8. August 2010.

<sup>&</sup>lt;sup>71</sup>Xiaoming Wang et al., Using Observed Data to Improve Estimated Methane Collection From Select U.S. Landfills, Environ. Sci. Technol. 3251, 3256 (2013).

<sup>&</sup>lt;sup>72</sup> Hamid R. Amini et al., Comparison of First-Order Decay Modeled and Actual Field Measured Municipal Solid Waste Landfill Methane Data, 33 Waste Management 2720, 2725 (2013).

<sup>&</sup>lt;sup>75</sup> Staley, B.F. and M.A. Barlaz, 2009, "Composition of Municipal Solid Waste in the U.S. and Implications for Carbon Sequestration and Methane Yield," Journal of Environmental Engineering, Vol. 135, No. 10, October 1, 2009.

<sup>&</sup>lt;sup>76</sup> U.S. EPA, Landfill Bioreactor Performance, Second Interim Report; EPN600/R–07/060, Office of Research and Development, National Risk Management Laboratory: Cincinnati, OH, 2006.

<sup>&</sup>lt;sup>77</sup> Tolaymat, T.M., Green, R.B., Hater, G.R., Barlaz, M.A., Black, P., Bronston, D., and J. Powell, "Evaluation of Landfill Gas Decay Constant for Municipal Solid Waste Landfills Operated as Bioreactors." Submitted to the Journal of the Air & Waste Management Association. 2009.

# Attachment G

U.S. EPA, Standards of Performance for Municipal Solid Waste Landfills; Supplemental Proposal, 80 Fed. Reg. 52,162 (Aug. 27, 2015) (excerpts) Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

*Treated landfill gas* means landfill gas processed in a treatment system as defined in this subpart.

*Treatment system* means a system that filters, de-waters, and compresses landfill gas for sale or beneficial use.

Untreated landfill gas means any landfill gas that is not treated landfill gas.

[FR Doc. 2015–20899 Filed 8–26–15; 8:45 am] BILLING CODE 6560–50–P

#### ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 60

[EPA-HQ-OAR-2003-0215; FRL-9928-96-OAR]

#### RIN 2060-AM08

#### Standards of Performance for Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Supplemental proposal.

**SUMMARY:** The Environmental Protection Agency (EPA) is issuing this supplemental proposal for the Standards of Performance for Municipal Solid Waste (MSW) Landfills to address the nonmethane organic compound (NMOC) emission rate threshold at which an affected MSW landfill must install controls. The EPA is in the process of reviewing the Standards of Performance for MSW Landfills based on changes in the landfills industry since the standards were promulgated in 1996 and issued a proposed rulemaking on July 17, 2014. The EPA's review of the Standards of Performance for MSW Landfills (also referred to as the New Source Performance Standards or NSPS for MSW Landfills) applies to landfills that commenced construction, reconstruction, or modification after July 17, 2014.

This document proposes to achieve additional reductions of landfill gas (LFG) and its components, including methane, through a lower emission threshold at which MSW landfills must install and operate a gas collection and control system (GCCS). This document supplements the proposed July 17, 2014, rulemaking by further lowering, from 40 megagrams per year (Mg/yr) to 34 Mg/yr, the proposed NMOC emissions threshold at which controls would be required. This change to the 2014 proposed threshold is based on additional data we have reviewed that indicate greater potential for reductions in methane emissions from these sources than we originally estimated that can be achieved at reasonable cost. Accordingly, the EPA is proposing to establish the NMOC emission rate threshold for installing a GCCS at 34 Mg/yr and is requesting comment specifically on whether this is appropriate. The EPA is also soliciting comment on the number of facilities that might ultimately become subject to proposed new subpart XXX. The EPA intends to consider the information received in response to this supplemental proposal prior to finalizing revised Standards of Performance for MSW Landfills. The EPA is seeking comment only on the two issues addressed by this supplemental proposal and the supplemental proposal does not otherwise reopen the comment period for the July 17, 2014, proposed rule. DATES: Comments. Comments must be received on or before October 26, 2015. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your comments on or before September 28, 2015.

Public Hearing. If anyone contacts the EPA requesting a public hearing by September 1, 2015, the EPA will hold a public hearing on September 11, 2015 from 1:00 p.m. (Eastern Standard Time) to 5:00 p.m. (Eastern Standard Time) at the location in the ADDRESSES section. If no one contacts the EPA requesting a public hearing to be held concerning this proposed rule by September 1, 2015, a public hearing will not take place. Information regarding whether or not a hearing will be held will be posted on the rule's Web site located at http://www.epa.gov/ttnatw01/landfill/ landflpg.htm. Please contact Ms. Aimee St. Clair at (919) 541-1063 or at stclair.aimee@epa.gov to register to speak at the hearing. The last day to preregister to speak at the hearing will be September 8, 2015.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2003-0215, to the *Federal eRulemaking Portal: http:// www.regulations.gov.* Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or withdrawn. The EPA may publish any comment received to its

public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit http://www2.epa.gov/dockets/ commenting-epa-dockets.

Public Hearing. If a public hearing is held, it will be at the U.S. Environmental Protection Agency building located at 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Information regarding whether or not a hearing will be held will be posted on the rule's Web site located at http:// www.epa.gov/ttnatw01/landfill/ landflpg.htm.

Please see section I.C of the Supplementary Information for detailed information on the public hearing.

*Docket:* All documents in the docket are listed in the *http://* www.regulations.gov index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in http:// www.regulations.gov or in hard copy at the EPA Docket Center (EPA/DC), EPA WJC West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The Docket Center is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Air Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: For information concerning this supplemental proposal, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (E143–05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541–3154; fax

# Attachment H

Nat'l Waste & Recycling Ass'n, et al., Petition for Rulemaking, Reconsideration, and Administrative Stay (Oct. 27, 2016) (excerpts) Petitioners: National Waste & Recycling Association, Solid Waste Association of North America, Republic Services, Inc., Waste Management, Inc., and Waste Management Disposal Services of Pennsylvania, Inc.

### PETITION FOR RULEMAKING, RECONSIDERATION, AND ADMINISTRATIVE STAY

### DOCKET I.D. EPA-HQ-OAR-2003-0215; EPA-HQ-OAR-2014-0451

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#### I. Introduction

On August 29, 2016, the Environmental Protection Agency ("EPA" or "Agency") promulgated final rules entitled, Standards of Performance for Municipal Solid Waste Landfills, 81 Fed. Reg. 59332-59384 (Aug. 29, 2016) ("Subpart XXX"), and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 81 Fed. Reg. 59276-59330 (Aug. 29, 2016) ("Subpart Cf") (collectively referred to as the "Final Rules"). Prior to publication of the Final Rules, EPA issued the following notices of proposed rulemaking: *Standards of* Performance for Municipal Solid Waste Landfills, 79 Fed. Reg. 41795-41843 (July 17, 2014) and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Advanced Notice of Proposed Rulemaking, 79 Fed. Reg. 41771-41793 (July 17, 2014) (collectively referred to as "2014 Proposal"). A year later, EPA issued supplemental proposals, entitled *Standards of* Performance for Municipal Solid Waste Landfills, 80 Fed. Reg. 52162-52168 (Aug. 27, 2015) and Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills; Proposed Rule, 80 Fed. Reg. 52100-52162 (Aug. 27, 2016) (collectively referred to as "2015 Supplemental Proposal"). The Final Rules are intended to update existing rules regulating municipal solid waste ("MSW") landfills - the Standards of Performance for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart WWW ("Subpart WWW") and the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart Cc ("Subpart Cc").

Pursuant to Section 553(e) of the Administrative Procedure Act ("APA"), 5 U.S.C. § 553(e), the National Waste & Recycling Association, the Solid Waste Association of North America, Republic Services, Inc., Waste Management, Inc., and Waste Management Disposal Services of Pennsylvania, Inc. (collectively referred to as "Petitioners") request that EPA immediately undertake a rulemaking to revise the Final Rules, as further specified in Section III, below. Additionally, pursuant to Section 307(d)(7)(B) of the Clean Air Act, 42 U.S.C. § 7607(d)(7)(B) ("CAA" or "Act"), Petitioners request that EPA reconsider certain aspects of the Final Rules, as set forth in Section IV, below. Finally, Petitioners request that EPA immediately grant Petitioners' request for administrative stay of the Final Rules, as more fully detailed in Section V, below, in order to suspend the effectiveness of the Final Rules and to allow the Agency time to correct the significant substantive and procedural flaws identified in this Petition.

### II. Petitioners' Background

The National Waste & Recycling Association ("NWRA") is a trade association that represents private-sector waste and recycling companies in the United States, and manufacturers and service providers who do business with those companies. NWRA's members operate in all 50 states and the District of Columbia. NWRA provides leadership, education, research, advocacy, and safety expertise to promote North American waste and recycling industries, serve as their voice, and create a climate where members prosper and provide safe, economically sustainable, and environmentally sound services.

The Solid Waste Association of North America ("SWANA") is a California nonprofit public benefit corporation. Its membership includes more than 8,500 public and private sector professionals committed to advancing from solid waste management to resource management through their shared emphasis on education, advocacy and research. For more than 50 years, SWANA has been the leading professional association in the solid waste management field. Republic Services, Inc.<sup>1</sup> ("Republic") serves residential, municipal, commercial, and industrial customers nationwide and is dedicated to providing dependable solutions for recycling and waste challenges. Republic provides reliable service through 340 collection operations, 201 transfer stations, 193 active landfills, 67 recycling centers, eight treatment, recovery and disposal facilities, 12 salt water disposal wells, and 69 landfill gas and renewable energy projects across 41 states and Puerto Rico. Republic maintains approximately 125 closed MSW landfills. Republic is a holding company and all operations are conducted by its subsidiaries.

Waste Management, Inc.<sup>2</sup> ("WM") is North America's leading provider of integrated waste management and environmental solutions. Through its network of subsidiaries, including Waste Management Disposal Services of Pennsylvania, Inc., WM operates 244 active, solid waste landfills, and at 136 of them, operates beneficial landfill-gas-to energy ("LFGTE") projects. These projects produce renewable electricity, renewable fuel for stationary facilities, and renewable transportation fuel for vehicles, including about 1000 of WM's own refuse collection trucks. WM maintains approximately 200 closed MSW landfills.

Petitioners have engaged with EPA during the rulemaking period and submitted comments on both the 2014 Proposal and 2015 Supplemental Proposal. *See* NWRA & SWANA, Comments on 2014 Proposal, Docket ID EPA-HQ-OAR-2003-0215-0108 & EPA-HQ-OAR-2014-0451-0062 ("NWRA & SWANA 2014 Comments"); NWRA & SWANA, Comments on 2015 Supplemental Proposal, Docket ID EPA-HQ-OAR-2003-0215-0196 & EPA-HQ-OAR-2014-0451-0186 ("NWRA & SWANA 2015 Comments"); Republic Services, Comments on

<sup>&</sup>lt;sup>1</sup> Republic Services, Inc. is a holding company and all operations are conducted by its wholly-owned and majorityowned subsidiaries. This Petition is being filed by Republic Services, Inc. on behalf of these consolidated subsidiaries (collectively "Republic").

<sup>&</sup>lt;sup>2</sup> Waste Management, Inc., a Delaware Corporation, is a holding company and all operations are conducted by its wholly-owned and majority-owned subsidiaries. This Petition is being filed by Waste Management, Inc. on behalf of these consolidated subsidiaries (collectively "Waste Management").

Proposed Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2003-0215-0099 ("Republic 2014 NSPS Comments"); Republic Services, Comments on Supplemental Proposal – Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2003-0215-0202 ("Republic 2015 NSPS Comments"); Republic Services, Comments on the Advanced Notice of Proposed Ruling Making for Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2014-0451-0061 ("Republic 2014 EG Comments"); Republic Services, Comments on Proposed Rules; Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2014-0451-0176 ("Republic 2015 EG Comments"); Waste Management, Inc., Comments on 2014 Proposal, Docket ID EPA-HQ-OAR-2003-0215-0100 & ("WM 2014 Comments"); Waste Management, Inc., Comments on 2015 Supplemental Proposal, Docket ID EPA-HQ-OAR-2003-0215-0198 & EPA-HQ-OAR-2014-0451-0192 ("WM 2015 Comments"). Additionally, WM, Republic, and other industry stakeholders have provided supplemental information relating to implementation of Subparts WWW and Cc, which can be found in the docket for Subpart XXX at the following Docket ID numbers: EPA-HQ-OAR-2003-0215-0003, EPA-HQ-OAR-2003-0215-0007, EPA-HQ-OAR-2003-0215-0053, EPA-HQ-OAR-2003-0215-0055, EPA-HQ-OAR-2003-0215-0057, EPA-HQ-OAR-2003-0215-0058.

### III. Petition for Rulemaking

Petitioners ask EPA to initiate rulemaking to address certain aspects of EPA's Final Rules that were raised in comments at proposal. Under Section 553(e) of the APA, any party can ask any agency to issue, amend, or repeal a rule. 5 U.S.C. § 553(e). Although Section 307(d) of the CAA states that Section 553 of the APA shall not apply to the promulgation or revision of

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most nationally-applicable CAA rules, including NSPS or EG rules,<sup>3</sup> the federal courts continue to recognize the right of the public to petition EPA for rulemaking under the CAA.<sup>4</sup>

The Petitioners recognize that the federal courts' authority to review EPA decisions on whether to grant or deny petitions for rulemaking is "extremely limited and highly deferential." See WildEarth Guardians v. EPA, 751 F.3d 649 (D.C. Cir. 2014) (denying a challenge to EPA's decision to deny a petition for rulemaking under Section 111 on the basis of ongoing budget uncertainties and limited resources). Nevertheless, Petitioners believe that the Final Rules are fundamentally flawed, are inconsistent with the structure and purpose of Section 111 of the CAA, and therefore warrant revision. Accordingly, Petitioners submit this petition for rulemaking in the hope that EPA will recognize that numerous flaws remain unaddressed, despite timely comments raising those concerns, and initiate a rulemaking process to address them. Since Petitioners believe that the issues for which rulemaking is requested below can be more fully vetted through an official notice and comment rulemaking process, the issues are described here only in general terms. Petitioners look forward to providing greater detail and proposed solutions for the concerns identified below during the rulemaking process. Nevertheless, because Petitioners did comment on the issues identified in this Section III during the rulemaking process for the Final Rule, such issues are also ripe for judicial review. 42 U.S.C. § 307(d).

### A. Overlapping Applicability of Old and New Subparts

In promulgating the Final Rules, the Agency has created an unintelligible web of standards that apply to MSW landfills in contravention of Section 111, consisting of: (1) old

<sup>&</sup>lt;sup>3</sup> 42 U.S.C. § 307(d).

<sup>&</sup>lt;sup>4</sup> *Massachusetts v. EPA*, 415 F.3d 50, 53 (D.C. Cir. 2005) (noting that Section 307 authorizes judicial review of EPA's decision to deny a petition for rulemaking), *rev'd and remanded on other grounds by* 549 U.S. 497, 527 (2007) (referring to the filing of a petition for rulemaking under the CAA as "procedural right" and confirming that the denial of such a petition may be addressed via judicial review under Section 307). *Accord Friends of the Earth v. EPA*, 934 F. Supp.2d 40, 54 (D.D.C. 2013) ("EPA is required to respond to a citizen petition for rulemaking.") (citing *Massachusetts v. EPA*).

penetrations." In addition to providing a definition of "cover penetrations," the Agency must remove the reference to "any openings" in the Final Rules to avoid creating undue confusion.

EPA has recognized that a completely literal interpretation of "cover penetrations" was not intended. Specifically, EPA noted in the preambles to the Final Rules that "[c]over penetrations include wellheads, but do not include items such as survey stakes, fencing or litter fencing, flags, signs, trees, and utility poles." 81 Fed. Reg. at 59288. EPA also confirmed more broadly in the Response to Comments Document that "cover penetrations" is only intended to include "component[s] of the GCCS system or leachate collection and control system that completely passes through the landfill cover into waste, such as wellheads, leachate risers, and manholes." Response to Comments Document at 745. This more limited definition of "cover penetrations" is logical—a "cover penetration" should not present a significant emissions concern if it does not reach the waste mass, and most do not, so only those deep enough to reach waste warrant monitoring.

Although EPA's clarification in the preambles to the Final Rules is helpful and appreciated, Petitioners are concerned that some risk of confusion remains without a codified definition of "cover penetrations." Therefore, Petitioners respectfully request that EPA convene a rulemaking proceeding to adopt a clear definition of "cover penetrations" into the regulatory text to codify the guidance that EPA has provided in its preambles.

### IV. Petition for Reconsideration

Pursuant to Section 307(d)(7)(B) of the CAA, EPA "shall convene a proceeding for reconsideration of [a] rule and provide the same procedural rights as would have been afforded had this information been available at the time the rule was proposed" so long as the party seeking reconsideration can demonstrate: (1) "that it was impracticable to raise such objection" during the public comment period or that "the grounds for such objection arose after the period

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for public comment (but within the time specified for judicial review)"; and (2) "such objection is of central relevance to the outcome of the rule." 42 U.S.C. § 7607(d)(7)(B). An objection "is of central relevance to the outcome of [a] rule" when that objection "provides substantial support for the argument that the regulation should be revised." *Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 125 (D.C. Cir. 2012). EPA's Final Rules present several issues that meet these two criteria. As set forth herein, several aspects of the Final Rules were added after proposal, which fundamentally change the considerations addressed by commenters at proposal and significantly increase the compliance burden and overall impact of the Final Rules. Therefore, EPA must convene a reconsideration proceeding on the issues identified in this Section IV.

In addition, EPA's Final Rules are unlawful because EPA failed to provide adequate notice of many critical aspects of them. The United States Court of Appeals for the District of Columbia ("D.C. Circuit") has held that lack of notice claims are subject to the CAA reconsideration process, and so Petitioners raise those claims here as well. *See EME Homer City v. EPA*, 795 F.3d 118, 137 (D.C. Cir. 2015). With regard to the notice that EPA is required to provide in promulgating CAA rules, the D.C. Circuit has consistently held that EPA does not satisfy the Act's notice and comment requirement when the final rule is not the "logical outgrowth" of the proposed rule. *See e.g. Envtl. Integrity Project v. EPA*, 358 F.3d 936, 951-52 (D.C. Cir. 2005); *Northeast Maryland Waste Disposal Authority v. EPA*, 358 F.3d 936, 951-52 (D.C. Cir. 2004). A requirement in a final rule is the logical outgrowth of a proposed rule only if "interested parties should have anticipated that the change was possible, and thus reasonably should have filed their comments on the subject during the notice-and-comment period." *Northeast Maryland Waste Disposal Authority*, 358 F.3d at 952. The "logical outgrowth

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# Attachment I

Nat'l Waste & Recycling Ass'n, et al., Petition for Rulemaking, Reconsideration, and Administrative Stay; Resubmission (Jan. 30, 2017)
USCA Case #17-1157



National Waste & Recycling AssociationsM







January 30, 2017

#### Via Overnight Mail

The Honorable Catherine McCabe Acting Administrator United States Environmental Protection Agency Office of the Administrator, Mail Code 1101A 1200 Pennsylvania Avenue, N. W. Washington, DC 20460

Kevin Minoli Acting General Counsel United States Environmental Protection Agency Office of General Counsel 1200 Pennsylvania Avenue, N.W. WJC North Building, Suite 4000 Washington, DC 20460 Sarah Dunham Acting Assistant Administrator United States Environmental Protection Agency Office of Air and Radiation, Mail Code 6101A 1200 Pennsylvania Avenue, N.W. Washington, DC 20460

RE: Pending Petition for Administrative Reconsideration, Rulemaking, and Stay of the Landfill New Source Performance Standards and Emission Guidelines

Dear Ms. McCabe, Ms. Dunham, and Mr. Minoli,

On October 27, 2016, representatives of the waste management sector (both public and private organizations) asked EPA to reconsider, revise, and stay two climate change related rules promulgated

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by EPA pursuant to Section 111 of the Clean Air Act that impose revised performance standards on both new and existing municipal solid waste landfills respectively entitled, "Standards of Performance for Municipal Solid Waste Landfills," 81 Fed. Reg. 59332-59384 (Aug. 29, 2016), and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills," 81 Fed. Reg. 59276-59330 (Aug. 29, 2016). Both regulations were promulgated as part of President Obama's Climate Action Plan: Strategy to Reduce Methane Emissions.

Because we have not received any response from EPA on the petition to date, and in recognition of the recent change in leadership at EPA, we have enclosed the petition for your review. As you will note, the petition identifies numerous and substantial questions of law and policy with the new rules, including the way the rules overlap and conflict with existing rules governing the source category.

We also wanted to draw your attention to similarities that these landfill rules share with other regulations that EPA may reevaluate, in particular EPA's Clean Power Plan and Oil & Gas Rules. For example, the cost-benefit analysis underpinning the landfill rules heavily relies on EPA's "social cost of methane" framework (derived from the Agency's "social cost of carbon" framework) that has been the subject of much debate and criticism. In addition, EPA's new rule for existing landfills relies on the same Section 111(d) authority for which EPA has been heavily criticized in the context of the Clean Power Plan. To the extent that EPA decides to discontinue the Agency's use of the "social cost of methane" or follows a more restrained interpretation of its Section 111(d) authority, EPA should likewise reconsider the landfill rules cited above.

In addition to filing the enclosed administrative petition with the Agency, the petitioners have challenged the new landfill rules in the U.S. Court of Appeals for the D.C. Circuit, and the parties will shortly need to propose a briefing schedule to the Court. Although the petitioners are prepared to proceed with the judicial challenge, we believe that a reconsideration of the rules could lead to an appropriate outcome without the need for litigation. Therefore, we request that EPA grant the enclosed petition and work with the waste management sector to develop a revised rule.

As set forth in the enclosed petition, the petitioners request that EPA issue an administrative stay of the rules using its authority under the Administrative Procedure Act. Although rule revisions are our ultimate goal, a stay is critical to avoid forcing the regulated community and states across the country to begin the process of implementing a set of rules that may ultimately change, which would result in a significant waste of resources. Such a stay would therefore be a particularly cost-effective administrative step, and would also be consistent with the January 20, 2017 directive from Reince Priebus, Assistant to the President and White House Chief of Staff, that all agency and department heads consider proposing for notice and comment a rule to delay the effectiveness of regulations presenting substantial questions of law or policy.

We recognize that many tasks will demand your attention in this time of transition, but hope you will recognize the need for swift action in this case. Fortunately, EPA can quickly and easily eliminate the time pressure with respect to the landfill performance standards by granting the enclosed

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petition. Should you have any questions regarding this correspondence, please contact any of the undersigned at your convenience.

Respectfully submitted,

<u>/s/ Kevin J. Kraushaar</u> Kevin J. Kraushaar 4301 Connecticut Avenue NW #300 Washington, D.C. 20008 (202) 364-3743

Counsel for National Waste & Recycling Association <u>/s/ Barry S. Shanoff</u> Barry S. Shanoff 1100 Wayne Avenue, Suite 650 Silver Spring, Maryland 20910 (301) 585-2898

Counsel for Solid Waste Association of North America

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Carol F. McCabe MANKO, GOLD, KATCHER & FOX 401 City Avenue, Suite 901 Bala Cynwyd, Pennsylvania 19004 (484) 430-2304

Counsel for Waste Management, Inc. and Waste Management Disposal Services of Pennsylvania, Inc. /s/ Carroll W. McGuffey III

Carroll W. McGuffey III M. Buck Dixon TROUTMAN SANDERS LLP 600 Peachtree St. NE, Suite 5200 Atlanta, Georgia 30308 (404) 885-3698

Counsel for Republic Services, Inc.

cc: Justin Heminger (DOJ)

# Attachment J

Letter from E. Scott Pruitt, EPA Administrator, to Carroll W. McGuffey, Republic Services, et al. (May 5, 2017)

Filed: 08/04/2017

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

May 5, 2017

THE ADMINISTRATOR

Mr. Carroll W. McGuffey III Mr. M. Buck Dixon Counsel for Republic Services Troutman Sanders LLP 600 Peachtree Street NE, Suite 5200 Atlanta, Georgia 30308

Mr. Barry Shanoff Counsel for Solid Waste Association of North America 1100 Wayne Avenue, Suite 650 Silver Spring, Maryland 20910

Mr. Kevin J. Kraushaar Counsel for National Waste & Recycling Association 4301 Connecticut Avenue, NW, #300 Washington, D.C. 20008

Ms. Carol F. McCabe Mr. Michael Dillon Counsel for Waste Management Inc. and Waste Management Disposal Services of Pennsylvania Manko, Gold, Katcher & Fox 401 City Avenue, Suite 901 Bala Cynwyd, Pennsylvania 19004

RE: Convening a Proceeding for Reconsideration of final rules entitled "Standards of Performance for Municipal Solid Waste Landfills," 81 Fed. Reg. 59332 and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills," 81 Fed. Reg. 59276, both published August 29, 2016.

Dear Mr. McGuffey, Mr. Dixon, Mr. Shanoff, Mr. Kraushaar, Ms. McCabe and Mr. Dillon:

This letter concerns a petition from National Waste & Recycling Association, Solid Waste Association of North America, Republic Services, Inc., Waste Management, Inc., and Waste Management Disposal Services of Pennsylvania, Inc., dated October 27, 2016, to the U.S. Environmental Protection Agency requesting reconsideration, and in some circumstances an administrative stay, of provisions included in the EPA's final rules entitled "Standards of Performance for Municipal Solid Waste Landfills," 81 Fed. Reg. 59332 (August 29, 2016) (i.e. the NSPS), and "Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills,"

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81 Fed. Reg. 59276 (August 29, 2016) (i.e. the emission guidelines), pursuant to section 307(d)(7)(B) of the Clean Air Act.

We find, under CAA section 307(d)(7)(B), that the petition has raised several objections to the provisions in both subpart XXX and subpart Cf that arose after the comment period or were impracticable to raise during the comment period and that are of central relevance to the outcome of the rule. Therefore, by this letter the EPA is convening a proceeding for reconsideration of the following topics: 1) tier 4 surface emission monitoring; 2) annual liquids reporting; 3) corrective action timeline procedures; 4) overlapping applicability with other rules; 5) the definition of cover penetration and 6) design plan approval. As part of the reconsideration process, the EPA expects to prepare a notice of proposed rulemaking that will provide an opportunity for notice and comment on the issues raised in the petition that meet the standard of CAA section 307(d)(7)(B), as well as any other matter we believe will benefit from additional comment.

As a result of this reconsideration, the EPA intends to exercise its authority under CAA section 307(d)(7)(B) to issue a 90-day stay of the effectiveness of both the NSPS (subpart XXX) and the emission guidelines (subpart Cf). The EPA believes it is appropriate to stay the effectiveness of both rules in their entirety because the topics listed above are integral to both rules. Sources need not comply with these requirements while the stay is in effect.

This letter does not address other requests for reconsideration raised in this and other petitions. Nor does it address the merits of, or suggest a concession of error on, any issue raised in the petition.

If you have any questions on this action, please contact Mr. Peter Tsirigotis in the Office of Air Quality Planning and Standards at (888) 627-7764 or airaction@epa.gov.

Respectfully yours, lets tai W

E. Scott Pruitt

(Page 114 of Total)

## Attachment K

Letter from Ann Weeks, Clean Air Task Force, et al., to E. Scott Pruitt, EPA Administrator (June 14, 2017)

June 14, 2017

Administrator E. Scott Pruitt Office of the Administrator, Code 1101A **Environmental Protection Agency** 1200 Pennsylvania Avenue, N.W. Washington, DC 20460

#### Request for Withdrawal of Administrative Stay of Landfill Methane Rules

Dear Administrator Pruitt,

The undersigned respectfully request that the Environmental Protection Agency (EPA) withdraw the 90-day Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. 82 Fed. Reg. 24,878 (May 31, 2017). EPA's last-minute stay of these long-overdue protections is contrary to the Clean Air Act (CAA) and arbitrarily overlooks the significant risks to public health and climate that result from a delay in implementing these protections.

As we explain below, EPA lacks legal authority under section 307(d)(7)(B) of the CAA to reconsider and stay the landfills standards. An administrative stay under section 307 must be based on a legitimate reconsideration sought on valid grounds. Reconsideration is only available for objections that were impracticable to raise during the rulemaking comment period, or where the grounds for objection arose after the period for public comment (but within the time specified for judicial review). Those objections must also be of central relevance to the outcome of the rule. 42 U.S.C. § 7607(d)(7)(B). None of the issues EPA has identified for reconsideration meet these standards.<sup>1</sup>

Moreover, EPA's decision to issue the stay fails to even acknowledge the harmful impacts of a delay in implementing these protections. Landfills are among the nation's largest sources of methane, a potent climate pollutant, and they also emit substantial quantities of smog-forming and hazardous air pollutants. Communities across the nation who bear the burden of landfill pollution on a daily basis will be harmed by EPA's unjustified decision to delay these protections—yet EPA gave those concerns no weight at all in its decision.

We also note that the public was at no time given an opportunity to provide input on this decision. Indeed, EPA did not make any public announcement of its decision until more than two weeks after the date of EPA's letter granting reconsideration.<sup>2</sup> EPA's lack of transparency and its decision to delay vital safeguards on specious grounds is part of an unfortunate pattern that has emerged under your tenure at EPA. See, e.g., 82 Fed. Reg. 25,370 (June 5, 2017).

<sup>&</sup>lt;sup>1</sup> The Notice of Stay is based on six issues raised in a Petition for Rulemaking, Reconsideration, and Administrative Stay submitted on October 27, 2016, and on a letter from EPA to entities in the waste management industry sent May 5, 2017 in response to that petition. 82 Fed. Reg. 24,878. The six issues identified for reconsideration are: 1) Applicability of the Tier 4 Surface Emissions Monitoring option; 2) Annual Liquids Reporting; 3) Corrective Action Timeline Procedures; 4) Overlapping Applicability with Other Rules; 5) Definition of Cover Penetration; and 6) Design Plan Approval. Id. at 24,878-79.

<sup>&</sup>lt;sup>2</sup> EPA's decision to stay the landfills standards was signed May 22, 2017. 82 Fed. Reg. at 24,879.

#### 1. <u>BECAUSE THERE ARE NOT VALID GROUNDS FOR RECONSIDERATION, THE</u> <u>STAY IS UNLAWFUL</u>

Because none of the six issues listed for reconsideration meet the section 307(d)(7)(B) standard, there is no basis for reconsideration under that provision and EPA has no authority to stay the rules.

For example, the Notice of Stay states that the public had no opportunity to comment on the final rule's restriction of Tier 4 applicability, and that had Tier 4 applicability been finalized differently, it would have been of central relevance to the rule's outcome. 82 Fed. Reg. at 24,879. But in fact, in its rule proposal, EPA requested "input on all aspects of implementing a new Tier 4 option." 79 Fed. Reg. 41,772, 41,791 (July 17, 2014). The final Tier 4 option was formulated in response to the solicited comments and is a logical outgrowth of the proposal.<sup>3</sup>

Likewise, commenters noted—and EPA considered—the possibility of conflicts between the performance standards and a preexisting national emission standard for hazardous air pollutants for the same industry, which involved similar control requirements, 81 Fed. Reg. 59,276, 59,279 (Aug. 29, 2016), an issue which EPA now states was "impracticable" to raise during the comment period.

These examples are typical of the treatment of all issues for which the EPA has now granted reconsideration.<sup>4</sup>

EPA's proposal put stakeholders on notice by providing "reasonably specific[]" descriptions of "the range of alternatives being considered"<sup>5</sup> and explicitly requested comment on the objections on which EPA now purports to grant reconsideration. *See, e.g.*, 80 Fed. Reg. 52,000, 52,126 (Aug. 27, 2015). Unsurprisingly, stakeholders—including those industry representatives who now seek reconsideration—in fact raised those objections during the comment period.

Indeed, of the six issues EPA has announced it is reconsidering, only three were actually included in the request for reconsideration; the other three were listed in support of a petition for further rulemaking.<sup>6</sup> As the parties who sought further rulemaking correctly recognized, any

<sup>&</sup>lt;sup>3</sup> See 80 Fed. Reg. 52,100, 52,111 (Aug. 27, 2015) (exploring the possibility of "limit[ing] surface monitoring during windy conditions"); see also EPA, Responses to Public Comments on EPA's Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Landfills: Proposed Rules, Dkt. No. EPA-HQ-OAR-2014-0451 [hereinafter "Response to Comments"] at 520, 527-28 (responding to comments expressing support for Tier 4 and proposing an expansion of its use); *id.* at 530, (recommending Tier 4 availability be limited to existing landfills).

<sup>&</sup>lt;sup>4</sup> *See, e.g.*, EPA, Responses to Comments at 234-42 (describing comments requesting that the Agency not "apply different standards to 'wet landfills'" without further information); *id.* at 995-96, 1013-16 (responding to industry comments on proposed corrective action timelines and providing recommendations); *id.* at 724-26, 734-36 (responding to industry comments expressing disagreement with EPA's interpretation of cover penetration and asking for clarification).

<sup>&</sup>lt;sup>5</sup> Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 549 (D.C. Cir. 1983).

<sup>&</sup>lt;sup>6</sup> National Waste and Recycling Association *et al.*, Petition for Rulemaking, Reconsideration, and Administrative Stay (Oct. 27, 2016) (petitioning for further rulemaking to address overlapping applicability of standards, design plan approval process, and clarification of "cover penetrations" definition).

contemplated changes to these final rules regarding those issues must take the form of new rulemaking, not reconsideration. If the prerequisites for reconsideration under section 307(d)(7)(B) are not met, no stay is authorized and existing regulations must remain effective until the completion of a notice and comment rulemaking to modify or replace them.

#### 2. <u>THIS STAY PREVENTS THE REALIZATION OF IMPORTANT</u> <u>ENVIRONMENTAL AND PUBLIC HEALTH BENEFITS</u>

As the third largest source of human-related methane emissions in the U.S., landfills produce dangerous amounts of methane, a highly potent greenhouse gas. Landfills also emit Non-Methane Organic Compounds (NMOC), which include volatile organic compounds (VOC) that form ozone and particulate matter pollution, and hazardous air pollutants (HAPs). Exposure to these pollutants is associated with significant public health and environmental effects, including premature deaths, cardiovascular problems such as heart attacks, respiratory problems such as asthma attacks and bronchitis, and injury to vegetation. HAPs such as benzene and toluene are associated with further serious health concerns. Those who live near landfills thus face elevated risks of all these harms.

EPA's landfill standards were first issued in 1996, and until last year they had not been reviewed or updated in any meaningful way, despite the CAA's requirement that standards of performance for new sources be reviewed and revised at least once every eight years. 42 U.S.C. § 7607(b)(1)(B). These long-overdue revisions to the landfill standards represent important steps toward reducing the presence of these pollutants in our air. Merely by lowering the threshold at which a landfill must install Gas Collection and Control Systems (GCCS) to 34 Mg NMOC/year, it is expected that, by 2025, NMOC reductions of almost 2,100 Mg/year and methane reductions of over 320,000 metric tons will be achieved. 81 Fed. Reg. at 59,278-80; 81 Fed. Reg 59,332, 59,335 (Aug. 29, 2016). The final rule is also expected to result in a reduction of over 300,000 Mg of carbon dioxide (CO<sub>2</sub>) emissions per year. *Id*. Simply put, these rules will result in significant reductions in emissions of climate-destabilizing pollutants and also will avoid negative public health and welfare effects associated with local exposure to these emissions.

The public benefits of implementing these regulations are substantial. When the rules were finalized in 2016, EPA estimated the pollution reduction benefits from them would yield global monetized climate benefits of up to \$1.38 billion by the year 2025. *Id.* The Agency also projected that the monetized climate benefits associated with diminished CO<sub>2</sub> and methane emissions alone would be over \$500 million in 2025. *Id.* Additionally, the annual net benefits of the final rules are projected to be over \$450 million in 2025. *Id.* 

Lastly, these rules clarify Surface Emissions Monitoring (SEM) requirements to ensure cover penetrations are inspected regularly. They also closed a loophole that previously allowed landfills to disregard emissions guidelines during periods of startup, shutdown, and malfunction.

The unauthorized and unjustified stay you have imposed delays and diminishes these benefits, and harms public health and the environment.

For these reasons, we respectfully request that the stay of the rules be withdrawn.

Respectfully submitted,

Ann Weeks James Duffy Clean Air Task Force 18 Tremont Street, Ste. 530 Boston, MA 02108 Counsel for Clean Air Council, Clean Wisconsin, and Conservation Law Foundation Tomas Carbonell Peter Zalzal Environmental Defense Fund 1875 Connecticut Avenue NW, Ste. 600 Washington, DC 20009

David Doniger Melissa Lynch Natural Resources Defense Council 1152 15<sup>th</sup> Street, Ste. 300 Washington, DC 20005

# Attachment L

Letter from Ann Weeks, Clean Air Task Force, et al., to E. Scott Pruitt, EPA Administrator (July 10, 2017)

July 10, 2017

Administrator E. Scott Pruitt Office of the Administrator **Environmental Protection Agency** Mail Code 1101A 1200 Pennsylvania Avenue, N.W. Washington, DC 20460

#### Second Request for Withdrawal of Administrative Stay of Landfill Methane Rules

Dear Administrator Pruitt,

The undersigned respectfully submit this additional request that the Environmental Protection Agency (EPA) withdraw the 90-day Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 82 Fed. Reg. 24,878 (May 31, 2017), in light of the recent decision in Clean Air Council v. Pruitt, No. 17-1145 (D.C. Cir. July 3, 2017) vacating EPA's 90-day stay of certain provisions of the new source performance standards for methane emissions from oil and gas production.

In *Clean Air Council*, the court determined that "industry groups had ample opportunity to comment on all four issues on which EPA granted reconsideration." Slip op. at 23. "Because it was thus not 'impracticable' for the industry groups to have raised such objections during the notice and comment period, CAA section 307(d)(7)(B) did not require reconsideration and did not authorize the stay." Id.

EPA similarly lacks authority to stay the landfills standards. As we discussed in our June 14 letter requesting withdrawal of the administrative stay of the landfill rules (enclosed), none of the issues EPA identified for reconsideration meet the requirements for reconsideration under Clean Air Act section 307(d)(7)(B): issues that are of central relevance to the outcome of the rule, which either were impracticable to raise during the public comment period or arose after that period. In the proposed landfill rules, EPA solicited comment on the issues for which the agency has now granted reconsideration. Stakeholders, including those seeking reconsideration, had the opportunity to raise—and in fact did raise-their objections during the public comment period.

As the prerequisites for reconsideration under section 307(d)(7)(B) are not met, the stay of the landfill rules is not authorized and the existing regulations must remain effective until the completion of a notice and comment rulemaking to modify or replace them. Clean Air Council, slip op. at 10-12.

We respectfully request that the stay of the landfill rules be withdrawn in accordance with Clean Air Council.

Respectfully submitted,

Ann Weeks James Duffy Clean Air Task Force 18 Tremont Street, Ste. 530 Boston, MA 02108 Counsel for Clean Air Council, Clean Wisconsin, and Conservation Law Foundation

David Doniger Melissa Lynch Natural Resources Defense Council 1152 15th Street, Ste. 300 Washington, DC 20005

Enclosure: Letter from Ann Weeks, Clean Air Task Force, et al., to E. Scott Pruitt, Administrator, U.S. EPA (June 14, 2017)

CC: Justin D. Heminger, U.S. Department of Justice

### Attachment M

Letter from E. Scott Pruitt, EPA Administrator, to David Doniger, Natural Resources Defense Council (July 11, 2017)





#### Filed: 08/04/2017 Page 93 of 177

### E. SCOTT PRUITT **ADMINISTRATOR**

July 11, 2017

Mr. David Doniger Director, Climate and Clean Air Program Natural Resources Defense Council 1152 15th Street, Suite 300 Washington, D.C. 20005

Dear Mr. Doniger:

Thank you for your letter of June 14, 2017, in which you requested that the U.S. Environmental Protection Agency withdraw the 90-day stay of the 2016 New Source Performance Standard and Emission Guidelines for the Municipal Solid Waste Landfill Industry.

On May 5, 2017, the EPA granted reconsideration of several issues within the 2016 NSPS and EG. To reduce regulatory burden during this reconsideration period, the EPA issued a 90-day stay of these requirements on May 31, 2017. The May 5, 2017, letter also noted that we intend to look broadly at the entire 2016 NSPS and EG during this reconsideration proceeding.

The EPA will continue to work with stakeholders to ensure the NSPS and EG meet these objectives. We look forward to engaging with you further to discuss these matters.

Again, thank you for your letter.

Respectfully yours.

E. Scott Pruitt

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(Page 124 of Total)

## Attachment N

Office of Management and Budget, Notice Pending EO 12866 Regulatory Review: Extension of Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (last visited July 30, 2017)

Executive Office of	THE PRESIDENT			Administration
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EPA/OAR	<b>RIN:</b> 2060- <i>A</i>	<b>\</b> T60	Publication ID: Update 2	2017
Title: ●Extension of Stay of Standard: _andfills Abstract:	s of Performance for Municipal Solid Waste I	Landfills and Emission Guidelin	es and Compliance Times for Mun	icipal Solid Waste
The EPA finalized the Standards of P. Compliance Times for Municipal Solid ndustry representatives. The petition to raise during the comment period ar stay the rules in their entirety. In a pre extend the stay in this action. Sources	erformance for Municipal Solid Waste Landfil Waste Landfills, also finalized on August 29 raised at least one objection to the rule requ Id that is of central relevance to the rule. In a vious action, both the new source performar s will not need to comply with any requirement	IIs on August 29, 2016 (81 FR 5 , 2016 (81 FR 59276). The EP/ irrements included in the final ru a letter signed May 5, 2017, the nece standards and emission gui nts under these rules while the	59332) and its companion rule, Em A received a petition in response to the that arose after the comment pe Administrator granted reconsidera delines were stayed for 90 days. T stay is in effect.	ission Guidelines and ) the final rules from priod or was impracticabl tion and showed intent t The EPA intends to furthe
Agency: Environmental Protection Agency(EPA)		Priority: Substantive, No	nsignificant	
<b>RIN Status:</b> First time published in the Unified Agenda		Agenda Stage of Rulemaking: Proposed Rule Stage		
Major: No		Unfunded Mandates: No		
CFR Citation: <u>40 CFR 60</u>				
Legal Authority: <u>42 U.S.C. 7411 Clea</u>	an Air Act			
Legal Deadline: None				
Action		Date	FR Cite	3
NPRM	06/00/2017			
Final Rule	07/00/2017			
Regulatory Flexibility Analysis Req	uired: No	Government Levels Affe	ected: Local, State, Tribal	
Small Entities Affected: Businesses, Governmental Jurisdictions		Federalism: No		
Included in the Regulatory Plan: No	)			
RIN Data Printed in the FR: No				
Related RINs: Related to 2060-AM08	s, Related to 2060-AS23			
Agency Contact: Andrew Sheppard				
Environmental Protection Agency				
E143-03,				
Research Triangle Park, NC 27709				
Email: sheppard.andrew@epa.gov				
Robin Dunkins Environmental Protection Agency Office of Air and Radiation E143-03				
Research Triangle Park, NC 27711 Phone:919 541-5335				

View Rule

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7/30/2017

# Attachment O

Office of Management and Budget, Notice Pending EO 12866 Regulatory Review: Stay of Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (last visited July 30, 2017)

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EPA/OAR	<b>RIN:</b> 2060-AT64		Publication ID: Update 2017		
Title: •Stay of Emission Guidelines	and Compliance Times for Municipal	Solid Waste Landfills			
Major: No CFR Citation: <u>40 CFR 60</u> Legal Authority: <u>42 U.S.C. 7411 C</u>	ilean Air Act	Unfunded Mandates: No	)		
Action	Source	Description		Date	
None		2000.191101		2010	
Timetable:		l.			
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NPRM	06/00/2017				
Final Rule	08/00/2017				
Regulatory Flexibility Analysis R Small Entities Affected: No Included in the Regulatory Plan: RIN Data Printed in the FR: No	∍ <b>quired:</b> No No	Government Levels Affe	<b>∍cted:</b> Local, State, Tribal		
Agency Contact: Peter Tsirigotis Environmental Protection Agency Office of Air and Radiation 6204J, 109 T.W. Alexander Drive, N Research Triangle Park, NC 27711 Phone:888 627-7764	fail Code D205-01,				

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## Attachment P

Declaration of Gina Trujillo, Natural Resources Defense Council

#### **DECLARATION OF GINA TRUJILLO**

I, Gina Trujillo, do hereby affirm and state:

1. I am the Director of Membership for the Natural Resources Defense Council (NRDC). I have held this position since January 2015. I previously served as NRDC's Director of Member Development and Member Services for over nine years.

2. My current duties at NRDC include supervising the preparation of materials that NRDC distributes to members and prospective members. Those materials describe NRDC and identify its mission. In my previous position, I supervised the maintenance and updating of NRDC's membership database, which is a listing of those persons who are members of NRDC.

3. NRDC is a membership organization incorporated under the laws of the State of New York. It is recognized as a not-for-profit corporation under Section 501(c)(3) of the United States Internal Revenue Code.

4. NRDC currently has more than 346,000 members nationwide. NRDC has members in all fifty states and the District of Columbia.

5. When an individual becomes a member of NRDC, the member authorizes NRDC to take legal action on his or her behalf to protect the environment and public health.

6. NRDC's mission statement declares that "The Natural Resources Defense Council's purpose is to safeguard the Earth: its people, its plants and animals, and the natural systems on which all life depends." NRDC's mission includes the

#### (Page 130 of Total)

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prevention and mitigation of global climate change in order to protect and maintain NRDC's members' use and enjoyment of natural resources threatened by climate change.

7. Through its Climate and Clean Air Program, NRDC pursues federal and state policies to curb air pollution and limit emissions of the pollutants that are causing climate change. NRDC seeks to reduce emissions of methane from municipal solid waste landfills, which are the nation's second largest industrial source of methane.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on: 7/27/17 Automatic

# Attachment Q

Declaration of Joseph O. Minott, Clean Air Council

### UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

Philadelphia County)Commonwealth of Pennsylvania)

### **DECLARATION OF JOSEPH O. MINOTT**

I, Joseph O. Minott, hereby declare and state as follows:

1. This declaration is based on my personal knowledge. I am over the age of eighteen (18) and suffer no legal incapacity. I submit this declaration in support of Clean Air Council's ("CAC") Petition for Review in the above-referenced matter.

2. I am currently the Executive Director of CAC and have served in this position for thirty (30) years. Before serving as Executive Director I was a staff attorney at CAC for four years. My position at CAC requires me to be responsible for achieving CAC's goals and mission, and to be familiar with CAC's structure, activities and membership.

3. The, Clean Air Council, originally named The Delaware Valley Citizen's Council for Clean Air, was established in 1967. CAC is a 501(c)(3) non-profit, membership organization incorporated in Pennsylvania and headquartered at 135 South 19th Street, Suite 300, Philadelphia, Pennsylvania 19103.

CAC currently has nearly 8,000 members, in the Mid-Atlantic 4. regions, most of whom live in the Philadelphia, Pennsylvania area.

5. CAC works to achieve its mission, to protect everyone's right to breathe clean air, through advocacy and legal action. Among CAC's programmatic activities is its "Global Warming Program." CAC's work on this issue began in 2001 when it convened the Mid-Atlantic States Conference on Climate Change. Specifically, CAC works for strong state and federal policies to address climate change pollution, including defending the U.S. Environmental Protection Agency's ("EPA's") authority to regulate greenhouse gas emissions under the Clean Air Act. CAC's climate change work includes a focus on steps to ameliorate the public health damages due to a warmer climate and rising sea levels.

6. My position at CAC requires me to be up to date and knowledgeable about current and future threats to the environment in Pennsylvania, and more broadly, to the Mid-Atlantic region in which Pennsylvania is centrally located.

Among the most important current and future threats to 7. Pennsylvania's natural and built environment is the ongoing damage due to a changing climate in the region. I am aware of the science documenting the existence of climate change, its causes, and its potential adverse impacts on public health and welfare and the environment – specifically to the natural and built environment in the Mid-Atlantic region. I understand that human activities, including the burning of fossil fuels to generate electric power, and production of waste, have resulted in elevated levels of carbon dioxide and methane pollution. Carbon dioxide, methane and other greenhouse gases trap heat in the Earth's atmosphere that would otherwise escape, and that "greenhouse effect" is now causing a variety of climactic and environmental changes, including, but not limited to, increased temperatures, sea level rise, and increases in the frequency and intensity of extreme weather events, including increased precipitation and heavy downpours in northern United States.

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8. I understand that 2016 had the highest average temperatures of any year in recorded U.S. history, and that this is part of a pattern of increased warming globally and in my region. Between 1895 and 2011, average annual temperatures in Pennsylvania, indeed the entire Northeast U.S., increased by almost two degrees Fahrenheit and precipitation increased by more than ten percent.

9. Additionally, I know that global sea levels are projected to rise one to four feet by 2100; a rise of two feet, without any changes in storms, would more than triple the frequency of coastal flooding in the Mid-Atlantic, including along the Schuylkill River, the largest tributary of the Delaware River, which enters the Atlantic Ocean in southern New Jersey. The Schuylkill River in Philadelphia is tidal, with a six-foot tidal range, meaning that water levels are six feet higher at high tide than at low tide.

10. I know also that Philadelphia, as a modern large city, has significantly more impermeable surfaces, such as concrete and asphalt, and less vegetation than surrounding areas, and therefore suffers from a "heat island" effect, whereby average temperatures are several degrees warmer than in the surrounding regions. The "heat island" effect poses a direct health risk because extreme heat events can cause health problems including heat exhaustion, heat stroke, and even death, particularly among at-risk populations such as

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children, the elderly, or those with low socio-economic factors. The "heat island" effect also contributes to greater concentrations of ground-level ozone, or smog, which forms when warm polluted air mixes with sunlight. Hotter areas experience higher localized concentrations of ground-level ozone than cooler areas. Smog is a particular problem in urban areas because of the increased presence of vehicles and industry, as well as the "heat island" effect.

11. Smog irritates the respiratory system, reduces lung function, inflames and damages cells that line your lungs, makes your lungs more susceptible to infections, aggravates asthma, aggravates chronic lung disease, and can cause permanent lung damage. Increasing temperatures associated with climate change will exacerbate smog and associated health problems. CAC's members residing in the Philadelphia region are experiencing the effects of summer smog now and this will continue and intensify if greenhouse gas accumulations in the atmosphere remain unchecked and average temperatures continue to rise.

12. I also know that climate change results in more frost-free days and can contribute to shifts in flowering time and pollen initiation from allergenic plants. Increases in carbon dioxide itself can elevate plant-based allergens, resulting in longer and more intense allergy seasons.

13. I am familiar with the final rule at issue in this litigation: Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. In my opinion, and based on my experience at CAC and with this rulemaking, the final Guidelines, which were stayed, were a significant step forward in reducing greenhouse gas emissions in the United States and confirm the country's international leadership in the global effort to address climate change, and the stay will undermine these benefits.

14. Guidelines for existing landfills were originally promulgated in 1996. This updated rulemaking reflects a number of advances in technology and operating practices for reducing emissions of landfill gas, which includes methane, since that time. Methane is a potent greenhouse gas that causes 86 times more warming than CO<sub>2</sub> in the short-term. I understand that these Guidelines will reduce 1,810 Mg/year of non-methane organic compound emissions from existing landfills and reduce methane by 7.1 mtCO<sub>2</sub>e by 2025.

15. Greenhouse gases are neither hazardous air pollutants nor criteria pollutants and therefore must be regulated under section 111(d). Emission control technology, efficiency, and operational control innovations and development are occurring at a rapid rate. It is imperative to climate change

mitigation that EPA's authority to update section 111(d) emission guidelines be upheld.

In addition to my professional role at CAC, I also have been a 16. CAC member for over twenty (20) years. I am sixty-three (63) years old. I own the property at which I live, located at 2301 Cherry Street, 4J, Philadelphia, Pennsylvania 19103, in Philadelphia County. I have been a resident of Philadelphia or its suburbs for forty-four (44) years.

17. My property is located less than one block from the Schuylkill River and is in a high-risk flood area according to the U.S. Federal Emergency Management Agency. I am aware that increased global temperatures cause increased flooding on tidal rivers like the Schuylkill, due to a combination of sea level rise, storm surge, and extreme precipitation events. Because my property is low-lying and within close proximity to a major river, it is vulnerable to damage from such flooding.

18. Indeed, it is my personal impression that strong storms and flooding events on the Schuylkill have increased in recent years. When my wife and I purchased our condominium four years ago, we thought it would be a beautiful home overlooking the river. Now, we are concerned about our investment because twice in the last few years the river came up over its banks and flooded the basement, garage and elevator shafts of the condominium

complex, rendering them inaccessible. I am concerned that climate change will increase these flooding incidents and undermine our comfort and investment in our home.

19. I suffer from a chronic medical condition called sarcoidosis, which causes shortness of breath, wheezing, and chest pain. The symptoms of sarcoidosis are aggravated by ground-level ozone. I am therefore directly impacted by climate change because increased temperatures lead to more frequent bad ozone days which exacerbate my medical condition.

20. Further, I do not own a car, so I walk around Philadelphia on a daily basis. I also enjoy running, sitting outdoors, and spending time on the patio and roof of my apartment building. More frequent and intense bad ozone days will make it harder for me to breathe when I attempt to walk and exercise outdoors, and will force me to curtail these activities. More frequent and intense bad ozone days are already occurring in Philadelphia and likely to increase if climate change-related temperature increases remain unchecked.

21. I also suffer from seasonal allergies in the spring, due to increased pollen in the air at that time of year. My symptoms include runny eyes, stuffy nose, headache and a "spacey" feeling. Among the effects of climate change in the Mid-Atlantic region is a lengthening of the allergy season, which already is causing me to suffer from these symptoms more often.

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22. I have children and two small grandchildren; one who is almost two years old and one who is five years old. They visit me in Philadelphia often and are an important reason why I am so concerned about the issue of climate change. I worry about how the changing climate will impact their futures and believe we must do everything we can to protect them from its effects.

23. The Guidelines at issue in the above-referenced matter will be a significant step toward addressing climate change and its effect on rising waters, increasing bad ozone, allergens, and our children's future planet. I believe the Guidelines will also make the air that I, my children and my grandchildren breathe cleaner and safer.

24. I understand that EPA recently issued a three-month delay of these landfill rules, and that Clean Air Council has initiated a lawsuit to challenge that delay. I support this lawsuit, because EPA's regulations will reduce air pollution from the landfill in my community and from the landfills in many other communities around the country. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 26th day of July 2017.

Joseph O. Minott 2301 Cherry Street, 4J Philadelphia, PA 19103

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## Attachment R

Declaration of Kathryn A. Nekola, Clean Wisconsin

### UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

Dane County State of Wisconsin

### **DECLARATION OF KATHRYN A. NEKOLA**

I, Kathryn A. Nekola, hereby declare and state as follows:

)

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1. This declaration is based on my personal knowledge. I am over the age of eighteen (18) and suffer no legal incapacity. I submit this declaration in support of Clean Wisconsin's Motion to Intervene in Support of Respondents, in the above-referenced matter.

2. I am the General Counsel for Clean Wisconsin, where I have served for 12 years. In my current position, I lead the organization's legal program, including matters related to climate and energy policies. Due to my current position and my previous experience, I am knowledgeable about Clean Wisconsin's mission, and about how energy policy and climate change impacts the state of Wisconsin, including impacts to public health, natural resources and the built environment.

3. Clean Wisconsin, founded as Wisconsin's Environmental Decade, was established in 1970. Clean Wisconsin is a 501(c)(3) non-profit, membership

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organization incorporated in Wisconsin and headquartered at 634 West Main Street, Suite 300, Madison, Wisconsin 53703.

4. Clean Wisconsin currently has 6,000 members in the Midwest region most of whom live in the state of Wisconsin.

5. Clean Wisconsin works to achieve its mission through education, advocacy, and legal action to protect Wisconsinites' right to breathe clean air and drink clean water. Among Clean Wisconsin's current programmatic activities is its Global Warming Program, and programmatic work to protect clean air and promote clean energy has been a continual focus of the organization since its beginning in 1970. Specifically, Clean Wisconsin is helping to ensure that Wisconsin's economy stays strong and is powered by clean, safe, reliable energy as Clean Wisconsin works for strong state and federal policies to address climate change pollution, including defending the U.S. Environmental Protection Agency's (EPA's) authority to regulate greenhouse gas emissions under the Clean Air Act.

6. Clean Wisconsin has engaged in solid waste disposal and management policies and landfill regulation for most of its 46-year history. Our former Policy Director served on the "Governor's Task Force on Waste Materials Recovery and Disposal" under Governor Doyle in 2005-06; our Government Relations Director currently serves on the Wisconsin Department of Natural Resources' Waste Materials and Management Working Group; and our Executive

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Director serves on the Dane County Solid Waste and Recycling Commission (which deals directly with the management of the Dane County landfill). I am currently a member of the Wisconsin Department of Natural Resources' Technical Working Group to reevaluate and revise an administrative rule pertaining to the beneficial reuse of industrial waste.

7. I understand that this lawsuit challenges an EPA final rule entitled:Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills"("Guidelines").

8. Guidelines for existing landfills were originally promulgated in 1996. This rulemaking reflects a number of advances in technology and operating practices for reducing emissions of landfill gas, which includes methane, since that time. Methane is a potent greenhouse gas that causes 86 times more warming than CO<sub>2</sub> in the short-term. I understand that these Guidelines will reduce 1,810 Mg/year of non-methane organic compound emissions from existing landfills and reduce methane by 7.1 mtCO<sub>2</sub>e in 2025.

9. I understand that human activities, and the decomposition of waste in particular, have resulted in elevated levels of methane pollution in the atmosphere. I am well aware that methane and other greenhouse gases trap heat in the Earth's atmosphere that would otherwise escape, and that the "greenhouse effect" is now causing a variety of climatic and environmental changes, including, but not limited

to, increased temperatures, sea level rise, longer and more severe droughts, and increases in the frequency and intensity of extreme weather events including increased intensity in precipitation events. I am also aware that the increase in average temperatures tends to be higher in the interior of large continents such as North America, and that has been the case in the Midwestern portion of the United States. I understand that 2014 had the highest average temperatures of any year in recorded U.S. history, and that this is part of a pattern of increased warming globally and in the Midwest.

10. I am also aware that in 2014 landfills were the third-largest anthropogenic source of methane emissions in the United States, with municipal solid waste landfills accounting for approximately 18.2 percent of the total methane emissions from all sources. Significant methane generation can continue for 10 to 60 years after initial waste placement.

11. I am aware that rigorous analysis shows that under the expert International Panel on Climate Change's (IPCC's) scenario A1B (that is, the model showing more reductions in greenhouse gas emissions than is the case under the status quo in the United States), there is a 90 percent likelihood that the annual mean temperatures in Wisconsin will rise to somewhere between 3 and 9 degrees Fahrenheit above 1980 levels by the year 2055. I am aware that this analysis also shows that there is a 90 percent likelihood that the annual mean temperature in

Wisconsin will rise to somewhere between 5 and 13 degrees Fahrenheit above 1980 levels by the year 2090, and that the number of days that the daytime high will exceed 90 degrees Fahrenheit is likely to increase by 20 (over 1980 levels) by 2055. I am also aware that the number of rainfall events in excess of 2 inches is likely to increase by 6 days per decade by the year 2055.

12. I am further aware that the impacts of these and other changes in the climate are already being experienced in Wisconsin as a result of human-induced global warming due to methane and other greenhouse gas emissions. Climate change warming patterns will produce further serious harmful impacts to Wisconsin's natural environment, built environment, and public health over the coming centuries. I know that in Wisconsin droughts are already more frequent and will become more severe and longer in duration; that rain and storm events, while occurring less frequently, are now and will become more intense and severe. I know that warming is now having, and will continue to have the greatest impact during the winter months, resulting in less consistent snow cover and more icy conditions. I know that in Wisconsin cities, which have more paved and built-up surfaces and less vegetation than in rural areas, a heat island effect is now causing and will lead to even more severe hot-weather days.

13. I know that insect-borne diseases such as Lyme disease are already spreading into regions of the country (including areas in Wisconsin) where they

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previously had not occurred due to warming winters that no longer kill off the insect hosts; and that Lyme disease will continue to spread, and the season when ticks are able to transmit the disease to humans will continue to lengthen, unless something is done to reduce climactic warming. I know that the incidence and intensity of ozone smog is already increasing and will continue to increase, and ozone smog seasons will lengthen in Wisconsin, with increased temperatures that drive the chemical reaction that forms ground-level ozone. I know that streams and rivers in Wisconsin already are warming, and this will greatly reduce the range and incidence of native cold-water fisheries in Wisconsin, especially brook trout.

14. I know that higher summer temperatures are already causing stress to dairy cows and increase the cost of producing quality milk, which is vital to the economic health of Wisconsin's dairy industry, one of the country's most important sources of milk and other dairy products. I know that because rainfall events are both less frequent but more intense when they do occur, both droughts and flooding are increasing, and this situation is already adding risk and expense to many types of Wisconsin crop farming including grains, fruits, vegetables, herbs, and livestock feed. I know that shorter snow-cover durations resulting from increases in winter thaws are now and will continue to have major impacts on the tourism industry in Wisconsin and increase costs for Wisconsin's timber industry.

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15. I know that it is critical to adapt to these changes and that adaptation will come at a great cost to Wisconsin's economy; moreover, it is also critical to take steps now to reduce methane and other air pollution that causes climate change in order to mitigate those costs. I know that the combined costs of the impacts of climate change and the costs of adapting to minimize those impacts, will be far higher than the cost of mitigating the impacts, particularly from the largest sources such as municipal solid waste landfills.

16. In addition to my professional role with Clean Wisconsin I have also been a dues paying member of Clean Wisconsin for the past 12 years. I am 62 years old, and have been a resident of the state of Wisconsin most of my life. I have two daughters.

17. I am and have been an enthusiastic hiker, biker, and swimmer all of my life. I grew up in northwestern Wisconsin and spend many weekends every year in Douglas, Bayfield, and Sawyer Counties, camping, swimming, and hiking. I also hike and bike in southern Wisconsin and I am aware that plant, bird, and animal habitat, which I enjoy viewing on my walks and bike trips, are affected by global climate change. I am also aware that the increased incidence of tick-borne illnesses such as Lyme Disease have been attributed to global warming, and have myself suffered from Lyme Disease as a result of recreating in Wisconsin forests. Due to my professional work, I am aware that, unless we take significant steps to

reduce current levels of greenhouse gas emissions, Wisconsin's lakes, streams, and forests will be irreversibly altered in ways that will affect habitats, the prevalence of infectious disease, and recreational opportunities. This will be a great personal loss to me and will forfeit recreational opportunities for my daughters. Just as importantly, it will be a major economic and cultural blow to the state of Wisconsin.

18. My daughters both share my love for the outdoor recreational opportunities Wisconsin offers, and I am aware that their lives and their children's lives will be affected even more profoundly – in a negative way – than ours, by climate change impacts to Wisconsin. This fact, more than anything else, is my motivation for working to address climate change and mitigate its impacts on Wisconsin.

19. Municipal solid waste landfills also emit non-methane organic compounds, which include volatile organic compounds, a precursor to ozone and particulate matter, and hazardous air pollutants. Volatile organic compounds can cause eye, nose and throat irritation, headaches, nausea or damage to the liver, kidneys and nervous system. Ozone can cause lung and throat irritation and trouble breathing during exertion. Exposure to particulate matter can cause lung and heart damage. People exposed to hazardous air pollutant have an increased chance of getting cancer or experiencing other serious health effects such as immune system

damage, as well as, neurological, reproductive, developmental and respiratory health problems.

20. I work in downtown Madison, Wisconsin, less than 5 miles from the Dane County Landfill Site, located at 7102 East Broadway, Madison, Wisconsin. This site emitted 52,459 tons of  $CO_2$  equivalent in 2015. Also in 2015, it emitted 63 tons of particulate matter and over 25 tons of hazardous air pollutants. I drive past the landfill site almost daily and am aware of the odor that emanates from it.

21. I recreate near the Dane County Landfill including biking and hiking on the Glacial Drumlin Bike Trail in Cottage Grove Wisconsin, approximately three miles from the Dane County Landfill, and hiking around Upper Mud Lake and Lake Waubesa, approximately four miles from the Dane County Landfill. Each autumn, my family picks apples at the Door Creek orchard, which is three miles from the Dane County Landfill.

22. Compliance with the Guidelines will, as a co-benefit, reduce emissions of hazardous air pollutants, ozone and particulate matter.

23. The Guidelines are a significant step toward addressing climate change and its effect on Wisconsin's air quality, lakes, rivers, ground water, farms, businesses, public health, culture and heritage. I believe the Guidelines will also make the air that I, my children, and my grandchildren breathe cleaner and safer. Clean Wisconsin seeks to intervene on EPA's behalf to defend the Guidelines. I

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support EPA's promulgation of the Guidelines finalized by the Agency, and I

support Clean Wisconsin's efforts to intervene on EPA's behalf.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 12th day of July 2017:

<u>Kathryn A. Nekola</u> Kathryn A. Nekola 430 W. Main Street, Apt. 307 Madison, WI 53703

## Attachment S

Declaration of Sara Molyneaux, Conservation Law Foundation

### UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

Norfolk County ) Commonwealth of Massachusetts )

#### **DECLARATION OF SARA MOLYNEAUX**

I, Sara Molyneaux, hereby declare and state as follows:

1. This declaration is based on my personal knowledge. I am over the age of eighteen (18) and suffer no legal incapacity. I submit this declaration in support Conservation Law Foundation's ("CLF") Petition for Review in the above-referenced matter.

2. I am currently the Chair of the CLF Board of Trustees. I have served on CLF's Board and have been a CLF member for eighteen years. My role at CLF requires me to be responsible for achieving the organization's goals and mission, and to be familiar with CLF's structure, activities, and membership.

3. Founded in 1966, CLF is a 501(c)(3) non-profit, member-supported corporation, organized and existing under the laws of Massachusetts, and headquartered at 62 Summer Street, Boston, Massachusetts 02110. CLF maintains offices in Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. CLF's membership consists of approximately 4,600 individuals, residing in thirtythree states and the District of Columbia, with the largest concentrations in the New England region.

4. CLF's mission is to work to solve the most significant environmental challenges facing New England. CLF relies on sound science and uses the law to create and advocate for innovative strategies to conserve natural resources, protect public health, and promote vital communities in our region. Working to promote effective climate change policies, including defending the U.S. Environmental Protection Agency's ("EPA's") authority to regulate greenhouse gas emissions under the Clean Air Act, constitutes a core element of CLF's mission.

5. My role at CLF requires me to be up-to-date and knowledgeable about current and future threats to the environment in Massachusetts, and more broadly, to the New England region.

6. Among the most important current and future threats to Massachusetts' natural and built environment is the ongoing damage due to a changing climate in the region. I am aware of the science documenting the existence of climate change, its causes, and its potential adverse impacts on public health and welfare and the environment – specifically to the natural and built environment in the New England region. I understand that human activities, especially burning fossil fuels to generate electric power, have resulted in elevated levels of carbon dioxide pollution. Carbon dioxide and other greenhouse gases trap

heat in the Earth's atmosphere that would otherwise escape, and that "greenhouse effect" is now causing a variety of climatic and environmental changes, including, but not limited to, increased temperatures, sea level rise, and increases in the frequency and intensity of extreme weather events, including increased precipitation and heavy downpours in the northern United States.

7. I understand that 2016 had the highest average temperatures of any year in recorded U.S. history, and that this is part of a pattern of increased warming globally and in my region. Between 1895 and 2011, average annual temperatures in Massachusetts, indeed the entire Northeast United States, increased by approximately two degrees Fahrenheit, and precipitation increased by more than ten percent. I understand that sea level rise is already documented in Massachusetts and that global sea levels are projected to rise one to four feet by 2100, substantially increasing coastal flooding risks in my region.

8. I know that urban areas, such as the Greater Boston metropolitan area in Massachusetts, have significantly more impermeable surfaces, including concrete and asphalt and less vegetation than surrounding areas, and therefore suffer from a "heat island" effect, whereby average temperatures are several degrees warmer than in the surrounding regions. The "heat island" effect poses a direct health risk because extreme heat events can cause health problems, including heat exhaustion, heat stroke, and even death, particularly among at-risk

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populations, such as children, the elderly, or those with low socio-economic factors. This "heat island" effect also contributes to greater concentrations of ground-level ozone, which forms when warm polluted air mixes with sunlight. Hotter areas experience higher localized concentrations of ground-level ozone than cooler areas. In turn, ground-level ozone combines with particulate matter to create smog. Smog is a particular problem in urban areas because of the increased presence of vehicles and industry, as well as the "heat island" effect.

9. Ozone smog irritates the respiratory system, reduces lung function, inflames and damages cells that line lungs, makes lungs more susceptible to infections, aggravates asthma, aggravates chronic lung disease and can cause permanent lung damage. Increasing temperatures associated with climate change will exacerbate ground-level ozone and ozone smog and associated health problems. CLF's members residing in urban areas experience the effects of smog, which will continue and intensify if greenhouse gas accumulations in the atmosphere remain unchecked and average temperatures continue to rise.

10. I know that climate change results in more frost-free days and can contribute to shifts in flowering time and pollen initiation from allergenic plants. Increases in carbon dioxide itself can elevate plant-based allergens, resulting in longer, more intense allergy seasons.

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11. I am familiar with the final rule at issue in this litigation: Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. In my opinion, and based on my experience at CLF and with this rulemaking, the final Guidelines stayed by this rule, are a significant step forward in reducing greenhouse gas emissions in the United States and confirm the country's international leadership in the global effort to address climate change.

12. Guidelines for existing landfills were originally promulgated in 1996. The Guidelines which have been stayed in this rulemaking reflect a number of advances in technology and operating practices for reducing emissions of landfill gas, which includes methane, since that time. Methane is a potent greenhouse gas with a much shorter atmospheric lifespan than CO<sub>2</sub>. I understand that these Guidelines will reduce 1,810 Mg/year of non-methane organic compound emissions from existing landfills and reduce methane by 7.1 mtCO<sub>2</sub>e in 2025.

17. CLF's members live and recreate in areas throughout New England that are now, and will be in the future, impacted by climate change, rendering them at risk for the adverse public health effects of climate change. CLF's members also include persons owning property and recreating in coastal areas that have already experienced sea level rise, as well as the accompanying erosion, direct loss of coastal property, and compromised wetland areas. CLF's members further include

elderly persons and others living in urban areas with high concentrations of ground-level ozone, making them particularly vulnerable to the adverse health impacts associated with exposure to these elevated concentrations.

18. In addition to my role at CLF, I have been a resident of Massachusetts for 39 years. I live at 7 Wilsondale Street in Dover, which is located in Norfolk County. My husband and I own property at 581 and 595 Old Post Road in Cotuit, which is located in Barnstable County on Cape Cod. My property in Cotuit is located on the waterfront and is in a high-risk flood area according to the U.S. Federal Emergency Management Agency. I am aware that increased global temperatures cause increased flooding, due to a combination of sea level rise, storm surge, and precipitation events. Because my property is within close proximity to the Atlantic Ocean, it is vulnerable to damage from such flooding.

20. My husband of thirty-six years is a native New Englander and suffers from chronic asthma, which causes shortness of breath, wheezing, coughing, and chest pain. These symptoms are aggravated by ground-level ozone and ozone smog. My husband is, therefore, directly impacted by climate change because increased temperatures lead to more frequent bad ozone days, exacerbating his symptoms.

21. My husband enjoys spending time outdoors and participating in recreational activities. Based on the heightened frequency and intensity of bad

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ozone days, my husband has been forced to curtail these activities. If climaterelated temperature rises remain unchecked, these bad ozone days will only continue to increase, and the associated adverse health impacts will be compounded.

22. I have two children living in New England. They are an important reason why I am so concerned about the issue of climate change. I worry about how the changing climate will impact their health and their futures. I believe we must do everything we can to protect them from climate changes' adverse effects.

23. The Guidelines at issue in the above-referenced matter will be a significant step toward addressing climate change and its effect on rising waters, increasing bad ozone, allergens, and our children's future planet. I believe the Guidelines will also make the air that I, my children, and my grandchildren breathe cleaner and safer.

24. I understand that EPA recently issued a three-month delay of the Guidelines, and that CLF has initiated a lawsuit to challenge that delay. I support this lawsuit, because EPA's regulations will reduce air pollution from the landfill in my community and from the landfills in many other communities around the country.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this B th day of July, 2017.

Sara Molyneaux

Sara Molyneaux 7 Wilsondale Street Dover, MA 02030

## Attachment T

Declaration of Craig Gooding, Natural Resources Defense Council Member

#### DECLARATION OF CRAIG GOODING

I, Craig Gooding, do hereby affirm and state:

 I am currently a member of the Natural Resources Defense Council (NRDC). I have been a member since 2007.

2. I support NRDC's work to protect public health and the environment from the hazards associated with air pollution from municipal solid waste landfills, both in terms of direct threats to our health and impacts on our climate.

3. My wife and I live in Charleston, South Carolina. We have lived in our current home, which is in a relatively recently developed neighborhood, for six years. I was stationed in Beaufort, South Carolina in the 1990s, during which time I was frequently in Charleston and the surrounding area. I have lived in the area off and on since then.

4. My home is less than a mile east of the Charleston County Landfill. The landfill is in the middle of a rapidly developing residential area, including a new development with as many as 6,000 units immediately adjacent to the landfill. Due to the explosive population growth in the Charleston metro area, the landfill is accepting increasing amounts of waste.

5. It is my understanding that the Charleston County Landfill does not currently utilize any method of controlling its emissions of air pollutants.

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6. I understand that landfill emissions include hazardous air pollutants and other pollutants that contribute to smog. I am concerned about the health effects that these air pollutants emitted by the landfill may have on the local community.

7. On clear nights when the wind comes from the west, a strong unpleasant odor from the landfill reaches my home. This occurs roughly once every two weeks. The odor is an oily, chemical smell. Although to my knowledge there is not an incinerator in use at the landfill, the smell resembles burning trash or tires. I believe that the landfill is the source of the odor because it occurs when the wind comes from the direction of the landfill, and it is the only industrial source in that direction—the rest of the area to the west of my home is residential and wetlands.

8. I am concerned about the pollutants that may be associated with the odor. When the smell is strong, my wife and I try to avoid breathing the air—we close up the windows in our house, and do not sit on our screened-in porch or otherwise go outdoors. I worry about the impacts of breathing the air on my own health, and I am concerned about the impacts on my neighbors, many of whom are families with young children.

9. I understand that landfill emissions also include methane and carbon dioxide, both of which are greenhouse gases that contribute to climate change. I am deeply concerned about the effects climate change will have, and is already having, on the Charleston area. Downtown Charleston is barely above sea level, and the surrounding area is a sunken river delta that is now full of tidal creeks and rivers. The

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area is vulnerable to hurricanes and storm surge, and has become more vulnerable over time due to sea level rise, which is driven by climate change.

10. Having spent time in Charleston over the last twenty years, I have seen the effects of sea level rise first-hand: roads around Charleston that never flooded twenty years ago now frequently flood during twice-monthly spring tides (associated with a full moon or new moon). I am an avid kayaker, and spend time kayaking all over the Charleston area in the ocean, harbor, and tidal creeks and rivers. From this vantage point I can see just how much of the area is at risk of flooding, and how much more will be at risk in the future due to sea level rise.

11. I also have significant concerns about other environmental impacts of the landfill. I kayak in the wetlands to the west of the landfill, and I worry about the possible impacts of pollution from the landfill on the natural area. Additionally, there is constant and increasing local traffic from hundreds of trucks transporting waste to the landfill, and the additional air pollution associated with those trucks.

12. I am aware that in 2016 the U.S. Environmental Protection Agency updated its regulations to expand the number of landfills that must control their landfill gas emissions. I support these updated regulations, as they would likely require the Charleston County Landfill to install new controls to limit its air pollution in the near future. I believe these regulations should be fully implemented.

13. I understand that EPA recently issued a notice putting the landfill rules on hold, and that NRDC has initiated a lawsuit to challenge that delay. I support this

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lawsuit, because EPA's regulations will reduce the air pollution from the landfill in my community and from the landfills in many other communities around the country. I believe that my wife's and my health, the health of our neighbors, and the future of Charleston and similarly vulnerable coastal cities, would all be better protected if these rules are implemented immediately.

14. I fully support NRDC in this action.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on July 26, 2017.

Cuaj O. Dody

Craig Gooding

# Attachment U

Declaration of Susan Almy, Conservation Law Foundation Member

### UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

Grafton County ) State of New Hampshire )

### **DECLARATION OF SUSAN ALMY**

I, Susan Almy, hereby declare and state as follows:

1. This declaration is based on my personal knowledge. I am over the age of eighteen (18) and suffer no legal incapacity. I submit this declaration in support of Conservation Law Foundation's ("CLF") Petition for Review, in the above-referenced matter

2. I am currently serving my eleventh term as a Representative of Grafton County District 13, the City of Lebanon, in the New Hampshire House of Representatives. I am also a member of CLF.

3. Among the most important current and future threats to New England's natural and built environment is the ongoing damage due to a changing climate in the region. I am aware of climate change, its causes, and its potential adverse impacts on public health and welfare and the environment—specifically in New England. I understand that human activities have resulted in elevated levels of greenhouse gas pollution in the atmosphere. Methane and other greenhouse gases trap heat in the Earth's atmosphere that would otherwise escape, and that

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"greenhouse effect" is now causing a variety of climatic and environmental changes, including, but not limited to, increased temperatures, sea level rise, and increases in the frequency and intensity of extreme weather events, including warmer winters, reduced snowfall, earlier spring runoff, increased total rainfall, and more frequent violent storms and short-term droughts in New England.

4. I understand that there is part of a pattern of increased warming globally and in my region. I also understand that sea level rise is already documented in New Hampshire and that projected sea level rise over the course of this century will substantially increase coastal and riverine flooding, erosion, and property damages risks in my state. The increased frequency and violence of extreme weather events have already severely impacted the housing stock, businesses, roads, and jobs of my state and our neighboring state, Vermont. Additionally, climate change threatens the viability of industries that contribute significantly to my state's economy, including New Hampshire's ski areas, snowmobiling industry, transportation, fisheries, and agricultural and forestry sectors. These industries are not only key to New Hampshire's economic success but also important the state's cultural heritage and history.

5. As a long-term member of the New Hampshire Ways and Means Committee, I am attuned to the impacts of climate change on New Hampshire's economy. I know that it is critical to adapt to the impacts of climate change and

that adaptation will come at a cost to New Hampshire's economy; moreover, it is also critical to take steps now to reduce methane and other air pollution that causes climate change in order to mitigate those costs. I know that the combined costs of the impacts of climate change and the costs of adapting to minimize those impacts, will be far higher than the cost of mitigating the impacts, particularly from large sources such as municipal solid waste landfills.

6. I am also a member of the City of Lebanon Conservation Commission and the Lebanon Steering Committee on the Implementation of the Master Plan, and I was a member of the Grafton County Executive Committee and the Upper Valley Housing Coalition for many years. Climate change has impacted my work in these positions. The City of Lebanon Conservation Commission has had to deal with many instances of severe erosion and river pollution due to high-intensity storms that have become more frequent in recent years. The Upper Valley Housing Coalition became a leader in immediate response to flooding to save flooded houses. My city saw considerable jobs and property lost in Tropical Storm Irene. Lebanon is now the center for a regional discussion of sustainability measures that municipalities must take to protect against climatic changes and extreme weather events, which burden municipal budgets already strained by stormwater separation mandates and the downshifting of costs from the state and federal government.

My county powers all of its heating and cooling with renewable energy resources, and my city is pursuing multiple avenues to reduce its own carbon footprint.

I understand that this lawsuit challenges an EPA final rule entitled:
Stay of Standards of Performance for Municipal Solid Waste Landfills and
Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills.

8. I understand that the stay will delay Guidelines which would reduce landfill emissions of methane and other dangerous and hazardous air pollutants that can cause serious health effects.

9. I have been a dues paying member of CLF since 2014. I am 71 years old, and I own the property where I live at 266 Poverty Lane, Unit 4B, Lebanon, New Hampshire. I have been a resident of the state of New Hampshire for 23 years, and was domiciled here through my parents during my two decades of work overseas before that. I have no children, but I have two great-nieces.

10. I have chronic asthma, which causes shortness of breath, wheezing, coughing, and chest pain. These symptoms are aggravated by air pollution. I have trouble visiting parts of my state and nation when air pollution peaks in a region. I am directly impacted by methane emissions because such emissions contribute to the formation of ozone smog, which aggravates asthma.

11. I live approximately 2 miles from the Lebanon Landfill and Recycling Center (the "Landfill"), located at 370 Plainfield Road, Route 12-A, West

Lebanon, New Hampshire. This site emits methane and other dangerous and hazardous air pollutants. In recent years, the Landfill has made efforts to reduce its emissions, including through installation of a flare system to burn the Landfill's collected methane emissions.

12. The Landfill is located at the edge of a shopping site, which is among the most popular commercial destinations in my region. A long strip mall and a mini-golf and putting green cover most of a closed cell of the Landfill. I visit the mall or the surrounding area most weeks. Until the Landfill starting flaring its landfill gas, the smell of landfill gas was pervasive during large parts of the year. Despite flaring, the smell of landfill gas is still noticeable to me sometimes, especially when I am driving past the Landfill to access the nearby recycling center or when I am visiting towns located to the south and downwind of the Landfill.

13. The Guidelines impose critical reporting requirements on the Landfill. These reporting requirements are particularly important because the Landfill's current design capacity is not far below the capacity that would trigger emission control requirements under the Guidelines. It is important to me, and I believe my community, to ensure that our regional landfill is properly regulated and guided in accord with up-to-date science and information. Furthermore, the Guidelines' enhanced reporting requirements will ensure transparency and allow for public involvement.

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14. The Guidelines are a significant step toward addressing climate change and its effect on New Hampshire's natural resources, businesses, public health, culture, and heritage. I believe the Guidelines will also make the air that I breathe cleaner and safer.

15. I understand that EPA recently issued a three-month delay of the Guidelines, and that CLF has initiated a lawsuit to challenge that delay. I support this lawsuit, because EPA's regulations will reduce air pollution from the landfill in my community and from the landfills in many other communities around the country.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 18<sup>th</sup> day of July 2017:

Susan Almy 266 Poverty Lane 4B Lebanon, New Hampshire 03766

## Attachment V

Declaration of Douglas I. Foy, Conservation Law Foundation

### UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

Suffolk County

Commonwealth of Massachusetts

#### **DECLARATION OF DOUGLAS I. FOY**

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I, Douglas I. Foy, hereby declare and state as follows:

1. This declaration is based on my personal knowledge. I am over the age of eighteen (18) and suffer no legal incapacity. I submit this declaration in support of Conservation Law Foundation's ("CLF") Petition for Review, in the above-referenced matter

2. I currently serve on the CLF Board of Directors and have been a CLF member for thirty-nine years. I previously served as CLF's President and Chief Executive Officer for twenty-five years. My long-standing roles at CLF have required me to be responsible for achieving the organization's goals and mission, and to be familiar with CLF's structure, activities, and membership.

3. Founded in 1966, CLF is a 501(c)(3) non-profit, member-supported corporation, organized and existing under the laws of Massachusetts, and headquartered at 62 Summer Street, Boston, Massachusetts 02110. CLF maintains offices in Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

#### (Page 176 of Total)

CLF's membership consists of approximately 4,600 individuals, residing in thirtythree states and the District of Columbia, with the largest concentrations in the New England region.

4. CLF's mission is to work to solve the most significant environmental challenges facing New England. CLF relies on sound science and uses the law to create and advocate for innovative strategies to conserve natural resources, protect public health, and promote vital communities in our region. Working to promote effective climate change policies, including defending the U.S. Environmental Protection Agency's ("EPA's") greenhouse gas emissions regulations under the Clean Air Act, constitutes a core element of CLF's mission.

5. My role at CLF requires me to be up-to-date and knowledgeable about current and future threats to the environment in Massachusetts, and more broadly, to the New England region.

6. Among the most important current and future threats to Massachusetts' natural and built environment is the ongoing damage due to a changing climate in the region. I am aware of the science documenting the existence of climate change, its causes, and its potential adverse impacts on public health and welfare and the environment – specifically to the natural and built environment in the New England region. I understand that human activities, including creation and decomposition of waste have resulted in elevated levels of

methane pollution. Methane and other greenhouse gases trap heat in the Earth's atmosphere that would otherwise escape, and that "greenhouse effect" is now causing a variety of climatic and environmental changes, including, but not limited to, increased temperatures, sea level rise, and increases in the frequency and intensity of extreme weather events, including increased precipitation and heavy downpours in the northern United States.

7. I understand that 2016 had the highest average temperatures of any year in recorded U.S. history, and that this is part of a pattern of increased warming globally and in my region. Between 1895 and 2011, average annual temperatures in Massachusetts, indeed the entire Northeast United States, increased by approximately two (2) degrees Fahrenheit, and precipitation increased by more than ten (10) percent. I understand that sea level rise is already documented in Massachusetts and that global sea levels are projected to rise one to four feet by 2100, substantially increasing coastal flooding risks in my region.

8. I know that urban areas, such as Boston, Massachusetts, have significantly more impermeable surfaces, including concrete and asphalt and less vegetation than surrounding areas, and therefore suffer from a "heat island" effect, whereby average temperatures are several degrees warmer than in the surrounding regions. The "heat island" effect poses a direct health risk because extreme heat events can cause health problems, including heat exhaustion, heat stroke, and even

death, particularly among at-risk populations, such as children, the elderly, or those with low socio-economic factors. This "heat island" effect also contributes to greater concentrations of ground-level ozone, which forms when warm polluted air mixes with sunlight. Hotter areas experience higher localized concentrations of ground-level ozone than cooler areas. In turn, ground-level ozone combines with particulate matter to create smog. Smog is a particular problem in urban areas because of the increased presence of vehicles and industry, as well as the "heat island" effect.

9. Ozone smog irritates the respiratory system, reduces lung function, inflames and damages cells that line lungs, makes lungs more susceptible to infections, aggravates asthma, aggravates chronic lung disease and can cause permanent lung damage. Increasing temperatures associated with climate change will exacerbate ground-level ozone and ozone smog and associated health problems. CLF's members residing in urban areas are experiencing the effects of summer smog now, which will continue and intensify if greenhouse gas accumulations in the atmosphere remain unchecked and average temperatures continue to rise.

10. I know that climate change results in more frost-free days and can contribute to shifts in flowering time and pollen initiation from allergenic plants.

Increases in carbon dioxide itself can elevate plant-based allergens, resulting in longer, more intense allergy seasons.

11. I am familiar with the final rule at issue in this litigation: Stay of Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. In my opinion, and based on my experience at CLF and with this rulemaking, the final Guidelines are a significant step forward in reducing greenhouse gas emissions in the United States and confirm the country's international leadership in the global effort to address climate change.

12. Guidelines for existing landfills were originally promulgated in 1996. The Guidelines which have been stayed in this rulemaking reflect a number of advances in technology and operating practices for reducing emissions of landfill gas, which includes methane, since that time. Methane is a potent greenhouse gas with a much shorter atmospheric lifespan than CO<sub>2</sub>. I understand that these Guidelines will reduce 1,810 Mg/year of non-methane organic compound emissions from existing landfills and reduce methane by 7.1 mtCO<sub>2</sub>e in 2025.

17. CLF's members live and recreate in areas throughout New England that are now, and will be in the future, impacted by climate change, rendering them at risk for the adverse public health effects of climate change. CLF's members also include persons owning property and recreating in coastal areas that have already
experienced sea level rise, as well as the accompanying erosion, direct loss of coastal property, and compromised wetland areas. CLF's members further include elderly persons and others living in urban areas with high concentrations of ground-level ozone, making them particularly vulnerable to the adverse health impacts associated with exposure to these elevated concentrations.

18. In addition to my role at CLF, I have been a resident of Massachusetts for 46 years. I am 70 years old. I live at 40 Battery Street, in Boston, which is located in Suffolk County. I have lived at this address for 13 years. I also own property at 65 East India Row, in Boston, which is located in Suffolk County.

19. Both my home and my property are located on the waterfront and are in high-risk flood areas according to the U.S. Federal Emergency Management Agency. I am aware that increased global temperatures cause increased flooding, due to a combination of sea level rise, storm surge, and extreme precipitation events. Because my home and my property are within close proximity to Boston Harbor, they are vulnerable to damage from such flooding.

20. I have children, as well as two granddaughters ages one and four, living in the Boston area and visiting me regularly. They are an important reason why I am so concerned about the issue of climate change. I worry about how the changing climate will impact their health and their futures. I believe we must do everything we can to protect them from the adverse effects of climate change.

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21. The Guidelines at issue in the above-referenced matter will be a significant step toward addressing climate change and its effect on rising waters, increasing bad ozone, allergens, and our children's future planet. I believe the Guidelines will also make the air that I, my children, and my grandchildren breathe cleaner and safer.

22. I understand that EPA recently issued a three-month delay of the Guidelines, and that CLF has initiated a lawsuit to challenge that delay. I support this lawsuit, because EPA's regulations will reduce air pollution from the landfill in my community and from the landfills in many other communities around the country.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 30th day of July, 2017.

Douglas T. Fov

40 Battery Street Boston, MA 02109

## Attachment W

U.S. EPA, Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Advanced Notice of Proposed Rulemaking,
79 Fed. Reg. 41,771 (July 17, 2014) (excerpts)

#### ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 60

[EPA-HQ-OAR-2014-0451; FRL-9913-51-OAR]

RIN 2060-AS23

#### Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

**AGENCY:** Environmental Protection Agency.

**ACTION:** Advanced Notice of Proposed Rulemaking.

SUMMARY: The purpose of this Advanced Notice of Proposed Rulemaking (ANPRM) is to request public input on methods to reduce emissions from existing municipal solid waste (MSW) landfills. The Environmental Protection Agency (EPA) intends to consider the information received in response to the ANPRM in evaluating whether additional changes beyond those in the proposed revisions for new sources are warranted. MSW landfill emissions are commonly referred to as "landfill gas" or "LFG" and contain methane, carbon dioxide  $(CO_2)$ , and nonmethane organic compounds (NMOC). Some existing landfills are currently subject to control requirements in either the landfill new source performance standards (NSPS) or the federal or state plans implementing the landfill emission guidelines; both the NSPS and emission guidelines were promulgated in 1996. The EPA believes that these guidelines merit review to determine the potential for additional reductions in emissions of LFG. Such reductions would reduce air pollution and the resulting harm to public health and welfare. Significant changes have occurred in the landfill industry over time, including changes to the size and number of existing landfills, industry practices, and gas control methods and technologies. The ANPRM recognizes changes in the population of landfills and presents preliminary analysis regarding methods for reducing emissions of LFG. In determining whether changes to the emission guidelines are appropriate, the EPA will, in addition to evaluating the effectiveness of various methods for reducing emissions of LFG, consider the total methane emission reductions that can be achieved in addition to the reductions of NMOC emissions. The EPA is also seeking input on whether it should regulate methane directly. The ANPRM also addresses other regulatory issues including the definition of LFG treatment systems and requirements for

closed areas of landfills, among other topics.

**DATES:** *Comments.* Comments must be received on or before September 15, 2014.

**ADDRESSES:** Submit your comments, identified by Docket ID Number EPA–HQ–OAR–2014–0451, by one of the following methods:

• Federal eRulemaking Portal: http:// www.regulations.gov. Follow the online instructions for submitting comments.

• Email: A-and-R-Docket@epa.gov. Include Docket ID No. EPA-HQ-OAR-2014-0451 in the subject line of your message.

• *Fax:* (202) 566–9744. Attention Docket ID No. EPA–HQ–OAR–2014– 0451.

• *Mail:* Environmental Protection Agency, EPA Docket Center (EPA/DC), Mailcode 28221T, Attention Docket ID No. EPA-HQ-OAR-2014-0451, 1200 Pennsylvania Avenue NW., Washington, DC 20460. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attn: Desk Officer for EPA, 725 17th Street NW., Washington, DC 20503.

• *Hand/Courier Delivery:* EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue NW., Washington, DC 20004. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA–HQ–OAR–2014– 0451. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at http:// www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute.

Do not submit information that you consider to be CBI or otherwise protected through http:// www.regulations.gov or email. Send or deliver information identified as CBI to only the mail or hand/courier delivery address listed above, attention: Mr. Roberto Morales, OAQPS Document Control Officer (Room C404-02), U.S. EPA, Research Triangle Park, NC 27711, Attention Docket ID No. EPA-HQ-OAR-2014-0451. The http:// www.regulations.gov Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless

you provide it in the body of your comment. If you send an email comment directly to the EPA without going through http:// www.regulations.gov, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the *http://* www.regulations.gov index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically at http:// www.regulations.gov or in hard copy at the Air Docket, EPA/DC, WJC West Building, Room B102, 1301 Constitution Ave. NW., Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Air Docket is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: For information concerning this ANPRM, contact Ms. Hillary Ward, Fuels and Incineration Group, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (OAQPS) (E143–05), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541– 3154; fax number: (919) 541–0246; email address: ward.hillary@epa.gov. SUPPLEMENTARY INFORMATION:

Acronyms and Abbreviations. The following acronyms and abbreviations are used in this document.

- ACT Alternative compliance timeline
- ANPRM Advanced Notice of Proposed Rulemaking
- AR4 IPCC Fourth Assessment Report
- ARB Air Resources Board
- BMP Best management practice
- CAA Clean Air Act
- CBI Confidential business information
- CFR Code of Federal Regulations
- CO<sub>2</sub> Carbon dioxide

percent or an oxygen level less than 5 percent. Compliance with these requirements is demonstrated through monthly monitoring. Instead of having the landfill owner or operator conduct monthly monitoring of temperature and nitrogen/oxygen at the wellheads, the EPA is requesting input on relying on landfill surface emission monitoring requirements in combination with maintenance of negative pressure at wellheads to indicate proper operation of the GCCS and minimization of surface emissions. The potential removal of the temperature and nitrogen/oxygen operational standards and associated wellhead monitoring requirements for these three parameters would be complemented by the addition of the surface monitoring provisions discussed in section IV.D.2 of this document.

Given recent technological advancements in data storage and transmission, the EPA is also considering an alternative to automate the wellhead monthly monitoring provisions. Automation could reduce long-term burden on landfill owner/ operators as well as state authorities by allowing for more frequent, but less labor-intensive, data collection through the use of a system consisting of remote wellhead sensors (i.e., thermistors, electronic pressure transducers, oxygen cells) and a centralized data logger.

The use of continuous monitoring would allow more immediate detection and repair. This would eliminate the time between when the exceedance of the parameter occurs and when it is detected. It could also improve enforceability of the rule by allowing inspectors to review information on the data logger in real time during a site visit. Another advantage to automating the monitoring is that it could provide flexibility for incorporating additional parameters into the monitoring program. The EPA is soliciting input on this alternative in general, including: (1) The types of parameters that are best suited for an automated monitoring alternative; (2) examples of successful automated monitoring programs at MSW landfills and their associated costs; (3) additional considerations for equipment calibration; and (4) input on any averaging times that might be appropriate to determine when one or more monitored parameters have been exceeded.

2. Surface Emissions Monitoring

The EPA is requesting input on potential alternative approaches to the surface emission monitoring specified in 40 CFR part 60, subpart WWW. Subpart WWW collection and control

requirements are intended for landfills to maintain a tight cover that minimizes any emissions of LFG through the surface. The surface emissions monitoring procedures in subpart WWW require quarterly surface emissions monitoring to demonstrate that the cover and gas collection system are working properly. The operational requirements in subpart WWW (40 CFR 60.753(d)) specify that the landfill must ". . . operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of LFG, such as distressed vegetation and cracks or seeps in the cover."

Subpart WWW of 40 CFR part 60 includes provisions for increased monitoring and corrective procedures if readings above 500 ppm are detected. Instrumentation specifications, monitoring frequencies, and monitoring patterns are structured to provide clear and straightforward procedures that are the minimum necessary to assure compliance.

We are requesting public input on potential alternatives to the surface monitoring procedures in 40 CFR part 60, subparts Cc and WWW. Potential alternatives could include provisions such as those in the California landfill methane regulation <sup>93</sup> and include changing the walking pattern for inspecting the surface of the landfill, adding an integrated methane concentration measurement, and allowing sampling only when wind is below a certain speed.

We are requesting input on reducing the interval for the walking pattern that traverses the landfill from 30 meters (98 ft.) to 25 ft. We are also requesting input on the addition of an average methane concentration limit of 25 ppm as determined by integrated surface emissions monitoring. This would be in addition to the 500 ppm emission concentration as determined by instantaneous surface emissions monitoring. Integrated surface emissions monitoring provides an average surface emission concentration across a specified area. For integrated surface emissions monitoring, the specified area would be individually identified 50,000

square foot grids. A tighter walking pattern and the addition of an integrated methane concentration would more thoroughly ensure that the collection system is being operated properly, that the landfill cover and cover material are adequate, and that methane emissions from the landfill surface are minimized. As part of these potential changes, the EPA is also requesting input on not allowing surface monitoring when the average wind speed exceeds 5 miles per hour or the instantaneous wind speed exceeds 10 miles per hour because air movement can affect whether the monitor is accurately reading the methane concentration during surface monitoring. We are considering this change because measurements during windy periods are usually not representative of emissions.

We are also soliciting information and associated data on the cost and assumptions for conducting enhanced surface monitoring as described here. Several factors contribute to the cost of enhanced surface monitoring. Monitoring along a traverse with a 25 ft. interval would increase monitoring time, and, thus, the labor costs, compared to monitoring along a 30 meter (98 ft.) interval. Monitoring along the tighter traverse pattern would take approximately four times as long, because the distance is approximately four times when covering a 50,000 square foot grid. For a landfill to conduct the integrated surface emissions monitoring, the EPA assumes the landfill would rent a handheld portable vapor analyzer with a data logger. The data logger would be necessary to obtain an integrated reading over a single 50,000 square foot grid. However, the EPA does not expect that requiring an integrated methane concentration would add significant cost because landfills could use the same instrument that they currently use for the instantaneous readings. These instruments can be programmed to provide an integrated value as well as an instantaneous value.

The EPA recognizes that while these provisions could minimize surface emissions, the actual reduction in emissions is difficult to quantify. Surface monitoring is a labor intensive process and tightening the grid pattern would increase costs. Thus, the EPA is soliciting input on techniques and data to estimate the reductions associated with enhanced surface monitoring.

The EPA is also requesting input on allowing the use of alternative remote measurement and monitoring techniques for landfills that exceed the surface monitoring concentrations in 40 CFR part 60, subpart Cc. The EPA

<sup>&</sup>lt;sup>93</sup> California Code of Regulations, title 17, subchapter 10, article 4, subarticle 6, sections 95460 to 95476, Methane Emissions from Municipal Solid Waste Landfills.

would like information to determine whether to allow these alternative techniques to be used to demonstrate that surface emissions are below the specified methane surface concentrations. Alternative remote measurement and monitoring techniques may include radial plume mapping (RPM), optical remote sensing, Fourier Transform Infrared (FTIR) spectroscopy, cavity ringdown spectroscopy (CRDS), tunable diode laser (TDL), tracer correlation, micrometeorological eddy-covariance, static flux chamber or differential absorption. The EPA is also seeking input on the frequency of testing and the format of the standard if we allow the use of these technologies as an alternative to average surface concentrations as measured by Method 21. Incorporation of these technologies would require a change in format of the standard to be consistent with the technology.

3. Alternative Monitoring Provisions for LFG Treatment

The EPA is requesting input on defining treatment system as a system that filters, dewaters and compresses LFG. This alternative approach would be consistent with public commenters on previous landfills documents (67 FR 36475, May 23, 2002; 71 FR 53271, September 8, 2006). It is also consistent with input from participants in governmental outreach, who stated that the extent of filtration, de-watering and compression can be site dependent, and that different sites require different levels of gas treatment to protect the combustion devices that use treated LFG as a fuel and ensure good combustion. The alternative definition of treatment system would allow the level of treatment to be tailored to the type and design of the specific combustion equipment in which the LFG is used. If treatment system was defined in this manner, owners/operators would need to identify monitoring parameters and keep records that demonstrate that such parameters effectively monitor filtration, de-watering or compression system performance necessary for the end use of the treated LFG.

Owners/operators would also need to develop a site-specific treatment system monitoring plan that would not only accommodate site-specific and end-use specific treatment requirements for different energy recovery technologies, but would also ensure environmental protection. Preparing the monitoring plan would document procedures that landfills are likely already following to ensure that the LFG has been adequately treated for its intended use.

The plan would be required to include monitoring parameters addressing all three elements of treatment (filtration, de-watering, and compression) to ensure the treatment system is operating properly for the intended end use of the treated LFG. The plan would be required to include monitoring methods, frequencies and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for the intended end use of the treated LFG. Documentation of the monitoring methods and ranges, along with justification for their use, would need to be included in the site-specific monitoring plan. In the plan, the owner/ operator would also need to identify who is responsible (by job title) for data collection, explain the processes and methods used to collect the necessary data, and describe the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems.

The owner or operator would be required to revise the monitoring plan to reflect changes in processes, monitoring instrumentation and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime. The EPA requests input on the definition of treatment system and the creation of site-specific treatment system monitoring plans.

#### 4. Monitoring and Reporting Flexibility

Regulatory agencies and landfill owners and operators have expressed concerns about the burden and response time of agencies responsible for reviewing and approving design plans, Alternative Compliance Timeline (ACT) requests, alternative remedies and higher operating value (HOV) requests.

One way to minimize the need for such reviews would be to provide more flexibility in wellhead monitoring provisions, as described in section IV.D.1 of this document.

The EPA also solicits input on other ways to streamline the monitoring, reporting and notification provisions as part of its review of the emission guidelines. For example, currently the subparts Cc and WWW of 40 CFR part 60 require site-specific design plan review and approval procedures, recognizing the unique site-specific topography, climate and other factors affecting the design of a GCCS. However, the EPA solicits input on ways to streamline the design plan submission and approval procedures as part of its review of the emissions guidelines. Examples of streamlining may include the potential development of a process by which approved alternative operating parameters could be automatically linked to updates of design plans or development of a process by which alternative operating parameters and updated design plans could be approved on a similar schedule.

The EPA is also seeking input on the possibility of establishing a third-party design plan certification program. The third-party program would supplement or replace the current approach of requiring the EPA or state review and approval of site-specific design plans and plan revisions with a program by which independent third parties would review the design plans, determine whether they conform to applicable regulatory criteria, and report their findings to the approved state programs or the EPA (for states without approved programs). The program would be designed to ensure that the third-party reviewers are competent, independent, and accredited, apply clear and objective criteria to their design plan reviews, and report appropriate information to regulators. Additionally, there would need to be mechanisms to ensure regular and effective oversight of third-party reviewers by the EPA and/or states that may include public disclosure of information concerning the third parties and their performance and determinations. Utilizing a thirdparty certification program could help to standardize and expedite design plan reviews, and reduce the burden on state regulators. The EPA is considering a broad range of possible design features for such a program. Such features include those discussed or included in several articles,<sup>94 95 96</sup> rules <sup>97 98 99</sup> and programs.100 101

<sup>96</sup> First Annual Oversight Report of the Decentralized Gateway Vehicle Inspection Program, Missouri Department of Natural Resources and the Missouri State Highway Patrol, 2008. http:// www.dnr.mo.gov/gatewayvip/docs/ enforcementrpt.pdf.

<sup>97</sup> Renewable Fuel Standard program. *http://www.epa.gov/OTAQ/fuels/renewablefuels/*.

<sup>98</sup> Wood Heater Compliance Monitoring Program. http://www.epa.gov/compliance/monitoring/ programs/caa/woodheaters.html.

<sup>99</sup>Mandatory Greenhouse Gas Emissions Reporting, California Environmental Protection Agency. http://www.arb.ca.gov/cc/reporting/ghgrep/ghg-rep.htm.

<sup>100</sup> Massachusetts Department of Environmental Protection, Third-Party Underground Storage Tank

<sup>&</sup>lt;sup>94</sup> McAllister, Lesley K., Third-Party Programs to Assess Regulatory Compliance, Presented at the Administrative Conference of the United States, October 22, 2012.

<sup>&</sup>lt;sup>95</sup> Esther Duflo, et al., Truth-Telling By Third-Party Auditors and the Response of Polluting Firms: Experimental Evidence From India, 128 Quarterly Journal of Economics 4 at 1499–1545 (2013).

We are considering the possibility of requiring sources to make design plans (including revisions) available online and easily accessible to the public as well as any impediment to doing so. We are also seeking input on what constitutes a reasonable time period for sources to make the design plans available online.

In addition to electronic storage of design plans, the EPA also plans to include electronic reporting in the forthcoming proposal that could amend subparts Cc and WWW of 40 CFR part 60 as a result of this review.

#### *E. Alternative Emission Threshold Determination Techniques*

The EPA is considering adjusting the emission threshold determinations that dictate when a GCCS must be installed, including variations in the modeling parameters as well as adding sitespecific emission threshold determination. These alternatives may provide additional reporting and compliance flexibilities for owners and operators of affected landfills, including those that use new technologies to increase oxidation of emissions, employ BMPs to increase the effectiveness of GCCS, or increase organics diversion and source separation practices.

#### 1. Modeling Adjustments

An affected landfill currently has three different options (tiers) for estimating whether the landfill exceeds the NMOC emission threshold of 50 Mg per year. The simplest of these, the Tier 1 calculation method, uses default values for the potential methane generation capacity  $(L_0)$  and methane generation rate (k) to determine when the landfill exceeds the 50 Mg NMOC per year emission threshold. The default  $L_0$  is 170 m<sup>3</sup> per Mg of waste (equal to 5,458 cubic feet methane per ton of waste) and the k values are 0.05 per year for areas receiving 25 inches or more of rainfall per year and 0.02 per year for areas receiving less than 25 inches of rainfall. The Tier 1 default NMOC concentration is 4,000 parts per million by volume (ppmv) as hexane. If the Tier 1 calculated NMOC exceeds 50 Mg per year, the landfill must install controls or demonstrate, using more complex Tier 2 or 3 procedures, that NMOC emissions are less than 50 Mg per year.

A revised rule could allow for alternative Tier 1 default values and modeling techniques based on the amount of organics in the waste. For example, the  $L_0$  is a function of the moisture content and organic content of the waste and L<sub>0</sub> decreases as the amount of organic matter decreases. Recent studies have shown that average U.S. landfill L<sub>0</sub> values have decreased 22 percent between 1990 and 2012 (from 102.6  $m^3$  per Mg of waste to 79.8 m<sup>3</sup> per Mg of waste) due to increased recovery of organic materials.<sup>102</sup> A revised rule could allow for landfillspecific L<sub>0</sub> values to be calculated based on the amount of degradable organic carbon (DOC), similar to components of Equation HH-1 in the GHGRP for MSW landfills (40 CFR part 98, subpart HH).

Subpart HH of the GHGRP also provides separate k-values for different types of materials, which could be used as alternate Tier 1 default values in revised emission guidelines. Sewage sludge and food waste have the highest k values, followed by garden waste, diapers, paper, textiles and wood and straw.<sup>11</sup>

The IPCC model employs a modeling method to accommodate separate k and DOC modeling parameters as well as separate calculations for six different categories of organic wastes.<sup>103</sup>

If the EPA pursues incorporating alternative Tier 1 modeling values in any revised emission guidelines, the EPA would also need to allow for an alternative first-order decay model structure to compute a total methane generation rate for the landfill based on the sum of the methane generated from each separate waste stream. This alternative model may incorporate material-specific k and L<sub>0</sub> values, instead of a single pair of k and L<sub>0</sub> values applied to bulk MSW. The EPA requests input on whether the alternative modeling parameters and model structure in subpart HH of 40 CFR part 98, or other default parameters or modeling procedures would be appropriate to use for emission threshold determinations in revised emission guidelines.

The EPA also requests input on whether such an alternative modeling procedure would be limited to only those landfills that are employing organic diversion or source separation.

#### 2. Site-Specific Measurements

As indicated above, under the current emission guidelines, there are three different tiers available to an affected landfill to estimate whether the landfill exceeds the NMOC emission threshold of 50 Mg/yr. If an affected landfill fails a Tier 2 test (i.e., the calculated NMOC emissions are greater than 50 Mg/yr), then the landfill must conduct Tier 3 testing or install and operate an active GCCS.

The EPA received input recommending the addition of a new Tier 4 surface emission monitoring (SEM) demonstration to allow increased flexibility for landfills that exceed modeled NMOC emission rates if they can demonstrate that site-specific methane emissions are actually low. This SEM demonstration would be conducted using procedures similar to those currently in 40 CFR part 60, subpart WWW (see 40 CFR 60.755(d)). If the monitoring finds that methane emissions are below a level that the EPA adopts in the revised emission guidelines, then installation of a GCCS could be delayed.

As an example, the California Air Resources Board (ARB) adopted the Methane Emissions from MSW Landfills regulation in 2009.<sup>104</sup> Under this rule, if a landfill exceeds the waste-in-place and heat input thresholds, the landfill may conduct an SEM demonstration prior to being required to install a GCCS. If the measured surface methane emissions exceed 200 ppm, the landfill must install a GCCS. This SEM demonstration is similar to the Tier 4 option being considered by EPA.

The EPA is soliciting input about this new Tier 4 option or other ideas for more flexible emission threshold determination "Tiers" and what implementation procedures may be appropriate for each determination. As the EPA takes this new Tier 4 option under consideration, there are some implementation procedures that would need to be established. The EPA requests input on all aspects of implementing a new Tier 4 option, including the following specific items: (1) Which areas of the landfill would be subject to SEM requirements because these areas would no longer be limited to areas with GCCS installed; (2) what number of exceedances over a specified time period would require GCCS installation (40 CFR part 60, subpart WWW specifies a new well must be installed at three or more exceedances

Inspection Program. http://www.mass.gov/eea/ agencies/massdep/toxics/ust/third-party-ustinspection-program.html.

<sup>&</sup>lt;sup>101</sup> Massachusetts Licensed Hazardous Waste Site Cleanup Professional Program, *http:// www.mass.gov/eea/agencies/massdep/cleanup/ licensed-site-professionals.html.* 

<sup>&</sup>lt;sup>102</sup> Stege, Alex. The Effects of Organic Waste Diversion on LFG Generation and Recovery from U.S. Landfills. SWANA's 37th Annual Landfill Gas Symposium. 2014.

<sup>&</sup>lt;sup>103</sup> Intergovernmental Panel on Climate Change (IPCC), *IPCC Guidelines for National Greenhouse Gas Inventories*. Volume 5 (Waste), Chapter 3 (Solid Waste Disposal). 2006.

<sup>&</sup>lt;sup>104</sup> California Code of Regulations, title 17, subchapter 10, article 4, subarticle 6, section 95463, Methane Emissions from Municipal Solid Waste Landfills.

in a quarter); (3) what frequency of SEM demonstration (e.g., quarterly monitoring for landfills accepting waste, annual monitoring for closed landfills) is appropriate; (4) what exceedance level is appropriate for determining if a GCCS must be installed (200 ppm or some other level); and (5) whether the Tier 4 option would apply to all landfills that could demonstrate surface emissions less than the determined exceedance level, regardless of how this level was achieved; or, whether this option would be made available to only those landfills employing and maintaining oxidative cover practices, utilizing biofiltration cells, or implementing other established best practices or organics diversion programs as discussed later in this section.

#### F. Considerations for Implementation at Closed vs. Active Landfills

The landfills included as part of this review include landfills that have accepted waste since November 8, 1987, and that commenced construction, reconstruction or modification before July 17, 2014. Table 3 of this document summarizes the closure patterns of the approximately 1,800 landfills potentially affected by 40 CFR part 60, subparts Cc and WWW.<sup>105</sup>

When did landfill stop accepting waste?	All landfills		Landfills	
	Number of landfills	Cumulative waste-in-place (tons) in 2014	capacity of 2.5 million Mg or greater	
			Number of landfills	Cumulative waste-in-place (tons) in 2014
Before 1990 ª	33	84,300,000	10	63,200,000
Between 1990 and 1995	335	662,300,000	62	465,500,000
Between 1995 and 2000	242	583,300,000	56	429,500,000
Between 2000 and 2005	97	402,300,000	29	343,000,000
Between 2005 and 2010	82	310,900,000	27	250,500,000
Between 2010 and 2013	77	469,800,000	31	408,400,000
N/A. Active as of 2014 $^{\rm b}$	966	6,695,300,000	739	6,493,000,000
Total	1,832	9,208,200,000	954	8,453,100,000

<sup>a</sup> But accepted waste after November 8, 1987.

<sup>b</sup> Excludes model landfills that began operating in 2014 and are expected to be subject to the proposed subpart XXX NSPS for MSW Landfills.

The EPA recognizes that existing landfills represent a wide range of points in the life cycle of a typical landfill. Approximately 39 percent of the existing landfills (707/1,832) closed prior to 2005 and those landfills collectively account for approximately 19 percent of the total waste disposed through 2014. Because these wastes were disposed of between 10 and 25 years ago, the LFG emission rates from these older sites are decreasing and have a significantly smaller contribution to emissions from this source category.

Given the wide range of points within a lifecycle that are represented by potentially affected existing landfills, and recognizing that some of the affected sites have not disposed of waste in over 25 years, the EPA believes that the implementation of any adjustments to the current framework or incorporation of alternative control frameworks or monitoring requirements may affect active landfills differently than inactive landfills. Therefore, the EPA requests input on how adjusting the current framework, selecting an alternative framework or modifying the monitoring requirements should be evaluated in terms of practicality, cost and emission reductions as these adjustments affect landfills of various ages and activity levels.

#### G. Implementation Issues

Since the landfills emission guidelines were promulgated in 1996, the EPA has become aware of a number of implementation issues for which landfill owners and operators, as well as regulators, need clarification. This section presents those issues and requests input on those clarifications and potential resolutions.

#### 1. LFG Treatment

In this document, the EPA is soliciting input on what constitutes sufficient LFG treatment. In the **Federal Register** document proposing a new subpart resulting from its review of the landfills NSPS (40 CFR part 60, subpart XXX), the EPA refined a numeric definition of LFG treatment and solicited input on a non-numeric definition that required compression, dewatering, and filtration of LFG, as well as the creation of a site-specific monitoring plan. The EPA requests input on whether a non-numeric or numeric treatment requirement is appropriate for landfills subject to the emission guidelines. Further, the EPA requests input on whether previously proposed definitions of LFG treatment should be adopted or if other approaches to LFG treatment should be explored. We are also requesting input on expanding the use of treated LFG fuel for a stationary combustion device, as some people have previously interpreted this compliance option, but also include other uses such as the production of vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical manufacturing process.

#### 2. Closed Areas

To determine whether NMOC emissions from nonproductive areas of a landfill are less than 1 percent of the total landfill NMOC emissions (and hence controls are not required), the landfills regulations (40 CFR part 60, subparts Cc and WWW) rely on

<sup>&</sup>lt;sup>105</sup> See Docketed Memorandum "Summary of Landfill Dataset Used in the Cost and Emission Reduction Analysis of Landfills Regulations. 2014."

modeled NMOC rates. To refine the measurements of these nonproductive areas, the EPA is requesting input on allowing landfill owners or operators to use either the measured *or* modeled flow of LFG to determine if an area is nonproductive. The EPA is also requesting input on what criteria and procedures would be considered acceptable for making these estimates. The provisions would apply to physically separated, closed areas of landfills.

## 3. Submitting Corrective Action Timeline Requests

If a landfill exceeds a wellhead operating parameter, the landfill owner or operator must initiate corrective action within 5 days and follow the timeline in 40 CFR part 60, subpart WWW for correcting the exceedance. During implementation of subpart WWW, the question has been raised whether a landfill needs agency approval of corrective action timelines that exceed 15 calendar days but are less than the 120 days allowed for installing a GCCS.

The EPA is seeking input on whether a specific schedule for submitting these requests for alternative corrective action timelines is appropriate because investigating and determining the appropriate corrective action, as well as the schedule for implementing the corrective action, will be site specific and depend on the reason for the exceedance. We also solicit input on whether any clarifications should be included in the revised emission guidelines to expedite the submission of any alternative time line requests (i.e., as soon as they know that they would not be able to correct the exceedance in 15 days or expand the system in 120 days) to avoid being in violation of the rule.

To address implementation concerns associated with the time allowed for corrective action, the EPA requests input on an approach that extends the requirement for notification from 15

days to as soon as practicable, but no later than 60 days. Many requests for an alternative compliance timeline express the need for additional time to make necessary repairs to a well that requires significant construction activities. Extending the time period to as soon as practicable but no later than 60 days may reduce the burden and ensure sufficient time for correction. If the EPA were to extend the time period, then the EPA also would consider removing the requirement to submit an alternative timeline for correcting the exceedance. Thus, by no later than day 60, the landfill would have to either have completed the adjustments and repairs necessary to correct the exceedance, or be prepared to have the system expansion completed by day 120. The EPA is also requesting input on whether 60 days is the appropriate amount of time that would allow owners or operators to make the necessary a repairs.

## V. Statutory and Executive Order Reviews

Under Executive Order 12866, titled Regulatory Planning and Review (58 FR 51735, October 4, 1993), this is a "significant regulatory action" because the action raises novel legal or policy issues. Accordingly, the EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Order 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action. Because this action does not propose or impose any requirements, other statutory and Executive Order reviews that apply to rulemaking do not apply. Should the EPA subsequently determine to pursue a rulemaking, the EPA will address the statues and Executive Orders as applicable to that rulemaking.

Nevertheless, the EPA welcomes input and/or information that would help the EPA to assess any of the following: The potential impact of a rule

on small entities pursuant to the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*); potential impacts on federal, state, or local governments pursuant to the Unfunded Mandates Reform Act ((UMRA) (2 U.S.C. 1531– 1538); federalism implications pursuant to Executive Order 13132, titled Federalism (64 FR 43255, November 2, 1999); availability of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104-113; tribal implications pursuant to Executive Order 13175, titled Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 6, 2000); environmental health or safety effects on children pursuant to Executive Order 13045, titled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997); energy effects pursuant to Executive Order 13211, titled Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (66 FR 28355, May 22,2001); paperwork burdens pursuant to the Paperwork Reduction Act (PRA) (44 U.S.C. § 3501); or human health or environmental effects on minority or low-income populations pursuant to Executive Order 12898, titled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629, February 16, 1994). The EPA will consider such comments during the development of any subsequent rulemaking.

#### List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements.

Dated: June 30, 2014.

#### Gina McCarthy,

Administrator.

[FR Doc. 2014–16404 Filed 7–16–14; 8:45 am] BILLING CODE 6560–50–P

# Attachment X

Waste Management, Comments on Supplemental Proposal (Oct. 26, 2015), Doc. No. EPA-HQ-OAR-2003-0215-0198 (excerpts)



October 26, 2015

Via Electronic Transmission: www.regulations.gov Ms. Hillary Ward ward.hillary@epa.gov Fuels & Incineration Group, Sector Policies and Programs Division US Environmental Protection Agency 109 T.W. Alexander Drive (E143-05) Research Triangle Park, NC 27711

## Re: Docket ID No. EPA-HQ-OAR-2003-0215 Docket ID No. EPA-HQ-OAR-2014-0451

Dear Hillary,

Waste Management ("WM") is pleased to provide the following comments on the U.S. Environmental Protection Agency's ("EPA" or "Agency") Supplemental Proposal for the Standards of Performance for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart XXX ("Supplemental NSPS") 80 Fed. Reg. 52162 (August 27, 2015) and the Proposed Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills ("Proposed EG"). 80 Fed.Reg. 52100 (August 27, 2015). WM is North America's leading provider of integrated waste management and environmental solutions. We operate 262 active, solid waste landfills, and at 134 of them, operate beneficial landfill-gas-to energy ("LFGTE") projects. These projects produce renewable electricity, renewable fuel for stationary facilities, and renewable transportation fuel for vehicles, including about 700 of our own refuse collection trucks. The Proposed NSPS and EG rules will have a very significant impact on our landfill facilities and our renewable energy projects.

WM has been working cooperatively with the Agency for over a decade on revisions and clarifications to the existing NSPS standards set forth at 40 C.F.R. Part 60, Subpart WWW ("Subpart WWW") and the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 40 C.F.R. Part 60, Subpart Cc ("Emission Guidelines" or "EG"). With its September 15, 2014 comments on the Proposed NSPS in Subpart XXX , 79 Fed. Reg. at 41796 (July 17, 2014) and the Advanced Notice of Proposed Rulemaking ("ANPRM") for the Emission Guidelines, 79 Fed. Reg. 41772 (July 17, 2014), WM incorporated by reference for inclusion into both dockets WM's comments prepared in response to EPA's proposed rulemaking actions in 2002 and 2006, and additional data submitted in response to various requests by EPA for information relevant to the Landfill NSPS standards.

Because the Agency's proposed Subpart XXX, its Supplemental NSPS and the Proposed EG in Subpart Cf are so closely interrelated, WM is incorporating by reference our September 15, 2014 comments on the proposed Subpart XXX and the ANPRM EG, at Docket Nos. EPA-HQ-OAR-2013-0215-0097, 0100 and EPA-HQ-OAR-2014-0451-0037, 0052. WM has again prepared combined comments on both rulemaking notices, in light of the substantial and apparent overlap among the two proposals and the previously proposed Subpart XXX. WM intends for this letter to be posted in each docket and requests that EPA respond comprehensively to each comment included herein.

Before discussing our views on particular aspects of the proposals, we want to commend you and the management of the Fuels and Incineration Group for the very open and collaborative process used to develop these proposals. You have been open, transparent and have encouraged broad stakeholder information and input, which we believe is reflected in the resulting proposals. WM and EPA have a shared interest in ensuring that the final rules for new, modified and existing landfills are reasonable, cost-effective, easy to implement by both the regulated community and state regulators, and reflect the lessons learned and the extensive reductions already realized by implementation of the current standards.

## **Regulated Pollutant -- Landfill Gas**

# WM Supports EPA's Decision to Maintain Landfill Gas (LFG) <u>as the Regulated Pollutant</u>

WM supports the Agency's continued focus on landfill gas as the regulated pollutant in the Proposed EG Rules (See 80 Fed. Reg. at 52105) and supports the same for the final NSPS. WM provided comments on the Proposed NSPS and ANPRM that outlined our reasoning. (See Docket # EPA-HQ-OAR-2014-0451-0037) First and foremost, the direct regulation of methane is unlikely to fundamentally change the structure of or benefits of the Landfill EG. Landfill gas is well understood to be composed of roughly 50% methane, 50% carbon dioxide and 1% NMOC. 79 Fed. Reg. at 41777. EPA's determination of the Best System of Emission Reduction ("BSER") is based on a well-designed and well-operated landfill gas collection system, and a control system for collected LFG that achieves 98% reduction of NMOC. 79 Fed. Reg. at 41803. This system of BSER is effective for all components of LFG, notwithstanding that EPA identified NMOC as surrogate for LFG in the initial Subpart WWW / EG rulemaking in 1996. See 79 Fed. Reg. at 48100. Therefore, adding methane as a pollutant under the Landfill NSPS/EG will not further reduce methane emissions, because they have already been addressed as a component of LFG, and are inseparable from the NMOCs in the LFG. There would be simply no environmental benefit to regulating methane directly. EPA has neither demonstrated nor suggested that there is a more effective way to address methane emissions than already established via the current regulation of landfill gas emissions as a whole. Further, WM does not believe that there is any more effective or feasible manner in which to reduce methane emissions from landfills than through a well-designed and well-operated landfill gas collection

We are concerned that few landfills will use Tier 4 if EPA finalizes the provision and fails to provide even a single corrective action opportunity. As currently proposed, if a landfill finds a single 500 ppm exceedance during a Tier 4 test, EPA is requiring development of a design plan and installation/operation of a GCCS. The Tier 4 test provides a useful tool to better characterize the actual emissions from a site. Use of Tier 4 should be encouraged rather than discouraged as it will enhance decision-making.

## The Recordkeeping Requirements in 60.39f(g) for Conducting Tier 4 Should Specify that all Readings Above 500 ppm be Recorded with Documentation of Corrective Action Mechanism Implemented and the Results of Re-monitoring

The proposed recordkeeping requirement to maintain records for five years for *every methane concentration reading* is extremely burdensome. As noted above, thousands of data points are generated during a SEM event. To require landfill owner/operators to maintain records of every methane reading generated for a five-year period will quickly overwhelm our recordkeeping systems. Furthermore, the Agency has not demonstrated a need for or an intended use of this voluminous data.

## We Urge EPA to Delete the Wind Speed Criteria, and Maintain the 40 C.F.R. Part 60 Subpart WWW Surface Monitoring Provisions for the Performance of Tier 4

It can be very difficult, and in some cases impossible, to implement SEM in areas where wind restrictions apply. We are very concerned that EPA's proposed wind speed criteria will make the Tier 4 alternative determination impossible to use. As WM noted in comments on the 2014 NSPS proposal and ANPRM, in California, almost 75% of the landfills conducting SEM were forced to request a permanent waiver from the State's allowable wind speed because it is an unworkable standard. A number of states and local solid waste authorities commented on use of a wind speed requirement to describe implementation difficulties in meeting the proposed five miles per hour average or 10 miles per hour instantaneous limit and warned against its adoption.<sup>11</sup>

EPA should not include similar language in promulgating the NSPS and EG rules. Landfill owner/operators will find it very difficult to assemble teams and schedule monitoring events if they must be canceled due to an arbitrary wind speed limit. Furthermore, in many areas of the country, the wind speeds frequently exceed the proposed average and instantaneous limits. In fact, California's allowable 5 mph average wind speed is not technically "windy"; according to the Beaufort wind scale, it is considered a light breeze. We thus ask EPA to retain the current approach for quarterly SEM, and allow Tier 4 monitoring during typical meteorological conditions. This regulatory language has worked well as a guide for conducting quarterly SEM, and is the appropriate guide for conducting Tier 4 SEM.

<sup>&</sup>lt;sup>11</sup> See Docket ID Numbers EPA-HQ-OAR-2014-0451-0033, EPA-HQ-OAR-2014-0451-0149, EPA-HQ-OAR-2003-0215-0125

Additionally, the proposed rule requires that average wind speed be determined using an onsite anemometer with a continuous recorder for the entire duration of the monitoring event. This presents a number of potential implementation problems in the performance of Tier 4 monitoring. Wind speeds will naturally vary across the many acres encompassed by the landfill and so wind speed measurements at a weather station located at the site office, for example, may not be representative of wind speeds on the landfill hill. We are very concerned that maintaining the proposed wind speed criterion will make use of Tier 4 highly problematic if not impossible in many regions of the country.

### We do not Support a Methane Threshold Less than 500 ppmv for Tier 4

The EPA requests comment on whether a level between 200 and 500 ppm is appropriate for the Tier 4 provisions, and whether setting the level below a specific point in this range poses fire or other safety concerns for operating a GCCS.

As EPA states in Docket ID Number EPA-HQ-OAR-2014-0451-0084, California ARB initially proposed a 200 ppm SEM threshold for both GCCS installation and for GCCS operation in its regulation. However, ARB finalized 500 ppm for GCCS operation because a lower threshold could cause an operator to overdraw the vacuum on the GCCS (to avoid a surface exceedance), which in turn could draw in too much oxygen and possibly cause fires. The EPA recognized these concerns with setting the threshold too low, which may in turn cause operators of voluntary GCCS to overdraw the vacuum on the GCCS, and therefore has proposed a level of 500 ppm considering both environmental protection and safety. It appears EPA has already sufficiently answered its own question as to the appropriate level for Tier 4 demonstration. We agree with EPA's analysis to retain the 500ppm limit, as proposed.

### **SEM Intervals Should Not be Changed**

We also noted that in 60.34f, EPA proposes a broad "catch all" standard of "no more than 30meter intervals." This could allow states to be more stringent than both the Emission Guidelines and the NSPS in its state plans. Such ambiguity and compliance uncertainty does not meet practical enforceability standards. It is unclear what the increased cost would be for such a broad standard that could literally range from a zero to 30 meter interval. These costs are not factored into the regulatory impact analysis relied on in this rulemaking, although EPA did estimate costs for reduced monitoring intervals as part of its enhanced monitoring alternative. Accordingly, EPA should maintain its current approach to SEM under Subpart WWW, which provides that SEM must be conducted "at 30-meter intervals (or a site-specific established spacing)" 40 C.F.R. §60.755(c)(1).

Finally, EPA has requested comments on whether landfill owners or operators should provide notification to regulators prior to conducting the quarterly Tier 4 SEM. This notification affords regulators the opportunity to observe the testing and provides greater transparency and trust. As such, this is a reasonable requirement and is acceptable to the landfill industry.

We also recommend that the rules require the landfill owner or operator submit an alternative timeline request for agency approval as soon as practicable where system expansion or alternative remedy for corrective action will require more than 120 days to complete, consistent with the 1998 preamble and rule provisions. EPA should also clarify that significant construction activities such as re-drilling a well or repairing/replacing buried collector piping are considered system expansion.

## **Electronic Reporting**

## **EPA Must Clarify Electronic Reporting Requirements**

WM continues to believe that electronic reporting requirements beyond combustion device stack test reports is would be overly burdensome and inappropriate for the landfill category as we discussed in our previous comments and incorporate herein (Docket ID Numbers EPA-HQ-OAR-2014-0451-0037, EPA-HQ-OAR-2003-0215-0100).

Although the proposed rule language appears to only require stack test reporting to the ERT (see 60.38f(j)), the preamble contains conflicting information. EPA states in the preamble that the agency *"is proposing electronic reporting of required performance test reports, NMOC emission rate reports, and annual reports."* See 80 Fed. Reg. at 52111. Later on in the preamble, EPA states it is proposing that *"owners or operators of MSW landfills submit electronic copies of required performance test and performance evaluation reports by direct computer-to-computer electronic transfer using the EPA-provided software"*. See 80 Fed. Reg. at 52127.

We are confused by what EPA means by "performance evaluation reports". We are also confused as to which reports EPA proposes to require the MSW landfill owner/operator to submit electronically. We do not support electronic submittal of compliance reports or other reports or records beyond combustion stack test reports. EPA must clarify in both the final rules and preamble that only required performance test reports are to be electronically submitted, where test methods are supported by the Electronic Reporting Tool (ERT).

## Wet Landfills

### Shorter Lag Times for Wet Landfills Are Not Warranted or Justified

WM is concerned that EPA is continuing to target "wet" landfills for additional requirements under the proposed NSPS/EG. In its comments on the ANPRM, WM explained why EPA should not reduce the initial lag times for landfills located in wet climates, landfills that recirculate

leachate, or landfills that add other liquids to accelerate waste decomposition. Specifically, WM highlighted ambiguity in the definition of wet landfills, the oversimplification that results from definitions that rely primarily on measured precipitation and leachate levels, and the potential overlap in requirements between the Landfill NSPS/EG and the Subpart AAAA NESHAP. (See Docket # EPA-HQ-OAR-2014-0451-0037) We continue to have concerns regarding all of these issues, in addition to a number of new issues raised in the proposed EG.

### EPA's Own Analysis of the 2.5/34 Proposal Indicates that the Additional Emission Reductions Achieved by Requiring Shorter Lag Times are Minimal

In the preamble of proposed Subpart Cf, EPA describes its analysis of potential emission reductions at "wet" landfills. Under EPA's analysis, 377 of the 651 landfills estimated to be required to install GCCS by 2025 would be "wet," a term they do not define. EPA states "reductions from these 377 wet landfills constitute approximately 50% of the incremental reductions achieved by proposed option 2.5/34. Nearly all of these incremental reductions are coming from the 343 landfills that are located in areas receiving 40 inches of precipitation or more. Based on this analysis, the NMOC threshold of 34 Mg/yr in this proposal achieves significant reduction in emissions from wet landfills." (80 Fed.Reg. at 51237)

EPA then analyzed the magnitude of the additional reductions that might result from shorter lag times. Specifically, EPA stated "an additional approximately 220 Mg/yr of reductions in NMOC emission and 35,200 Mg/yr of reductions in methane could be achieved from these 377 wet landfills in 2025." (80 Fed.Reg. at 52138)

We have reached several conclusions based on our review of EPA's analysis. First, we note that the level of incremental emission reductions achieved under an emission threshold of 2.5/34, without imposing any additional requirements on wet landfills, is less than 5% of the base case NMOC and CH4 emission reductions, that is compared to the current rule (at 2.5/50). This is a modest reduction in emissions, given the significant reduction of the emissions threshold. As described in our comments on the proposed 2.5/34 emission threshold, the incremental cost per ton of emissions reduced associated with the 2.5/34 proposal cost is over three times higher than as the cost per ton of emissions reduced under the current rule.

WM has also evaluated the magnitude of the incremental emission reductions resulting from the basic 2.5/34 approach as compared to additional reductions resulting from imposing the shorter lag time requirement for wet landfills. Specifically, we compared the level of NMOC and CH4 emission reductions under shorter lag times to total incremental reductions (e.g., the 2.5/34 scenario) resulting from the 377 "wet" landfills.<sup>21</sup> The result of requiring shorter lag times would be a 16% increase in incremental reductions.

 $<sup>^{21}</sup>$  To perform this comparison, we assumed that 50% of the incremental emission reductions associated with going from 2.5/50 to 2.5/34 would be generated by "wet" landfills. See 80 Fed.Reg.at 52137).

The additional emission reductions resulting from shorter lag times should be put in context, however, because the reductions achieved by the core 2.5/34 scenario are only 5 percent of the base case reductions. Thus, we have compared the emission reductions associated with requiring shorter lag times at wet landfills already complying with the 2.5/34 scenario to the total reductions delivered by the rule (e.g., the base case + the 2.5/34 increment + the shorter lag times. This analysis confirms that the additional emission reductions associated with requiring shorter lag times for "wet" landfills are vanishingly small – only 0.4% - of the total annual emission reductions expected under the current proposal.

## EPA has Failed to Provide Cost or Cost-Effectiveness Information for the Proposed Shorter Lag Times Requirement

WM is concerned that EPA has failed to provide any discussion of the cost and cost effectiveness of shorter lag time requirements. From our review of other proposed changes to the NSPS and EG, we have concluded that the more stringent requirements come with significantly higher costs. EPA should not finalize shorter lag times at wet landfills without providing additional information to the regulated community and other stakeholders.

## We are Concerned that EPA's Apparent Approach Under the NSPS/EG will be Difficult to Coordinate with the Subpart AAAA NESHAP, which Could Create Significant Problems for Regulated Entities in the Future

As EPA notes, landfills defined as bioreactors under 40 CFR Part 63, subpart AAAA, "are required to install and operate a GCCS on an accelerated schedule compared to non-bioreactor landfills. Once a landfill is required to install and operate a GCCS under either [Subpart AAAA] or [the current NSPS/EG rules], the GCCS requirements remain the same." (80 Fed.Reg. 52137) WM is concerned that the coordinated approach, which has worked effectively for many years, could be undermined if EPA proceeds to finalize new NSPS/EG requirements for shorter lag times.

A key concern is that the current NESHAP would continue to apply the 2.5/50 emission threshold in the NESHAP, while the updated NSPS/EG would apply to the lower 2.5/34 threshold. This failure to coordinate the timing of the rules would thus result in different levels of stringency and inconsistent coverage of sites. Further, EPA's proposal, while acknowledging the relationship between the two rules, does not clearly confirm that a final NSPS/EG with shorter lag times would maintain the current coverage arrangement between the NESHAP and the NSPS/EG.

WM supports maintaining the current system for managing "wet" landfills, wherein Subpart AAAA regulates some landfills and the NSPS/EG regulates others. We strongly encourage EPA to delay implementing the current proposal on wet landfills. Given the connections between the NESHAP Subpart AAAA and this proposed rule, we urge EPA to address these issues in a coordinated rule-making that ensures a consistent approach and clear delineation of authority between the NSPS/EG and the NESHAP.

# Attachment Y

Waste Management, Comments on Advanced Notice of Proposed Rulemaking (Sept. 15, 2014), Doc. No. EPA-HQ-OAR-2014-0451-0037 (excerpts)

Filed: 08/04/2017

Page 168 of 177



September 15, 2014

Via Electronic Transmission: A-and-R-docket@epa.govMs. Hillary Wardward.hillary@epa.govFuels & Incineration Group, Sector Policies and Programs DivisionUS Environmental Protection Agency109 T.W. Alexander Drive (E143-05)Research Triangle Park, NC 27711

### Re: Docket ID No. EPA-HQ-OAR-2003-0215 Docket ID No. EPA-HQ-OAR-2014-0451

Dear Hillary,

Waste Management ("WM") is pleased to provide the following comments on the U.S. Environmental Protection Agency's ("EPA" or "Agency") Proposed Standards of Performance for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart XXX ("Subpart XXX" or "Proposed NSPS") 79 Fed. Reg. 41796 (July 17, 2014) and the Advanced Notice of Proposed Rulemaking: Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills ("ANPRM"). 79 Fed.Reg. 41772 (July 17, 2014). WM is North America's leading provider of integrated waste management and environmental solutions. We operate 262 active, solid waste landfills, and at 137 of them, operate beneficial landfill-gas-to energy (LFGTE) projects. These projects produce renewable electricity, renewable fuel for stationary facilities, and renewable transportation fuel for vehicles, including 300 of our own refuse collection trucks. The Proposed NSPS will have a very significant impact on our landfill facilities and our renewable energy projects.

WM has been working cooperatively with the Agency for over a decade on revisions and clarifications to the existing NSPS standards set forth at 40 C.F.R. Part 60, Subpart WWW (Subpart WWW) and the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 40 C.F.R. Part 60, Subpart Cc (Emission Guidelines or EG). WM incorporates by reference into these comments for inclusion into both the Subpart XXX and ANPRM dockets, the substantial body of work that it has prepared in response to EPA's proposed rulemaking actions in 2002 and 2006, and in response to various requests by EPA for WM to submit additional data and information relevant to the Landfill NSPS standards. Many of these submittals are included in the docket for the proposed rulemaking and some are referenced

Attachments 165

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Figure 1. Comparison of Methane Emission Results from CRDS Measurements and Models (error bars represent 1sd)

## D. Different Standards for Wet Landfills are Not Warranted or Justified

EPA is taking comment in both the preamble to proposed Subpart XXX and the ANPRM with respect to whether it should consider reducing the design capacity threshold or initial lag times for landfills that are located in a wet climate or that recirculate leachate or add other liquids to the landfills to accelerate waste decomposition. 79 Fed. Reg. at 41808; 79 Fed. Reg. at 41784. WM disagrees that these so-called "wet landfills" should be subject to a more stringent set of requirements. First and foremost, EPA's mere solicitation of comment in the preamble to Subpart XXX and in the ANPRM fails to provide any clear notice of what EPA may be considering. In fact, EPA requests comment on the fundamental question of how a wet landfill might be defined, noting for example that a wet landfill could be defined as a landfill that has precipitation of greater than 25 inches per year and/or recirculates leachate (or other liquids) *See* 79 Fed. Reg. 41808; 79 Fed. Reg. at 41784. EPA offers no reasoned basis for either this example definition or its assumption that wet landfills may warrant separate treatment under Subpart XXX.

EPA should not attempt to define or apply different standards to "wet" landfills. There is no scientific data to support that a wet landfill would be defined as a landfill that has greater than 25 inches of precipitation per year and/or recirculates leachate (or other liquids), nor has EPA prepared a sufficient analysis of the additional costs that would impose an unnecessary burden on hundreds of landfills that recirculate leachate. Moisture content can vary considerably from cell to cell in a landfill, creating pockets of saturated and dry layers. In addition, several variables play a role in determining how the leachate and liquids will interact with the waste

mass, including the type of waste accepted, daily cover types, climate, age of the waste, etc. These variables add complexity to how the leachate and liquids will interact with the waste mass. Therefore EPA should not assume that any given amount of precipitation or leachate recirculation should be the sole basis for causing enhanced gas generation.

The National Emission Standard for Hazardous Air Pollutants for Municipal Solid Waste Landfills, 40 CFR Part 63 Subpart AAAA (the "Landfill NESHAP") already addresses landfills that have 40% or more moisture content due to the addition of liquids. The NESHAP requires installation of GCCS prior to initiating liquids addition, regardless of whether the landfill emissions rate equals or exceeds the NMOC threshold prescribed in the NSPS (currently 50 Mg/yr). Startup of the GCCS is required within 180 days after initiating liquid addition or within 180 days after reaching 40% moisture content within the landfill, whichever is later.

EPA evaluated recirculating leachate as a part of the Landfill NESHAP rulemaking and determined that leachate recirculation should not trigger additional requirements. *See, e.g.*, Municipal Solid Waste Landfills: Background Information Document for National Emission Standards for Hazardous Air Pollutants – Public Comments and Responses, EPA 453/R-02-014 November 2002 at p. 47). As part of the GHGRP, EPA requires MSW Landfills to disclose whether they practice leachate recirculation. Further, if sites do recirculate leachate, then the site must account for the leachate recirculation along with precipitation to determine which k value to use to estimate emissions (See Table HH-1 of Subpart HH of Part 98). Large quantities (i.e., several million gallons) of leachate recirculation have negligible impact on the total precipitation value that ultimately dictates which k value to use. WM provided comments to EPA discussing the effect of water with respect to the development of an appropriate k value in AP-42. (See Attachment 4.)

Given the lack of specific information related to how this "option" might be implemented, the absence of any analysis, the apparent redundancy with NESHAP Subpart AAAA, and the absence of a scientifically reliable means of determining a threshold specification for wet landfills, we urge EPA to retain the current approach in Subpart WWW and the EG. EPA should continue to rely on the existing Landfill NESHAP requirements to address early collection for sites that have 40% moisture content due to liquids addition. The same basic design capacity and emission-based triggers for installing a GCCS will appropriately ensure timely installation of emissions controls at all landfills.

## E. EPA Has Not Justified a Reduction in the NMOC Emissions Threshold for GCCS Installation

EPA has proposed in Subpart XXX to reduce the NMOC threshold from the "baseline" (Subpart WWW) level of 50 Mg/yr to 40 Mg/yr. 79 Fed. Reg. at 41811. EPA also requests comment on reducing the NMOC threshold in the ANPRM, although in that context has not proposed a specific threshold. 79 Fed. Reg. at 41782. W**M has carefully reviewed EPA's rationale for** 

# Attachment Z

Republic Services, Comments on Proposed Rulemaking (Oct. 26, 2015), Doc. No. EPA-HQ-OAR-2014-0451-0176 (excerpts)



October 26, 2015

Sent Via Electronic Transmission: A-and-R-Docket@epa.gov

Environmental Protection Agency EPA Docket Center (EPA/DC) Mail code 28221T Attention Docket ID No. EPA-HQ-OAR-2014-0451 1200 Pennsylvania Avenue NW Washington, DC 20460

Subject:Docket ID No. EPA-HQ-OAR-2014-0451Comments on Proposed Rules; Emission Guidelines, Compliance Times, and Standards of<br/>Performance for Municipal Solid Waste Landfills

Dear Ms. Ward:

Republic Services (Republic) appreciates the opportunity to provide comments on the "Proposed Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills" published in the Federal Register on August 27, 2015 (80 Fed. Reg. 52100), for which comments are due October 26, 2015.

As the second largest owner/operator of municipal solid waste (MSW) landfills in the United States, Republic has significant experience operating landfill gas collection and control systems (GCCS) that have been subject to the current new source performance standards (NSPS) and Emission Guidelines since the initial promulgation of those standards. We own and/or operate nonhazardous landfills consisting of over 190 active and 130 closed landfills, over 200 of which have a GCCS.

Republic views management of landfill gas as much more than a compliance obligation—we view proper landfill gas management as a fundamental requirement of providing competent and reliable environmental services. Republic's commitment to environmental stewardship is further illustrated by our efforts to identify and implement economically viable and long-term beneficial reuses for landfill gas to displace both natural gas and electricity generated by other sources. Currently, Republic uses the landfill gas from 70 landfills to generate electricity, and we are continuously seeking additional landfill gas to energy opportunities. Our effort to combust or use methane as an energy resource has also resulted in the ancillary benefit of significantly reducing greenhouse gas emissions.

With this culture of environmental stewardship and our extensive experience in landfill management, Republic submits the following comments on EPA's proposed revisions to the landfill NSPS.

18500 North Allied Way Phoenix, AZ 85054 (480) 627-3100 Nwuestenberg@republicservices.com Attachments 169

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those applications remain pending, to ensure administrative delays by states or EPA do not result in unintended consequences on the regulated community. See, e.g., 40 C.F.R. § 70.7(b) ("[I]f a part 70 source submits a timely and complete application for permit issuance (including for renewal), the source's failure to have a part 70 permit is not a violation of this part until the permitting authority takes final action on the permit application ..."); 40 C.F.R. § 70.5(a)(2) ("The source's ability to operate without a permit, as set forth in § 70.7(b) of this part, shall be in effect from the date the application is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the deadline specified by the permitting authority."). So too should landfills receive the benefit of the doubt in the event of regulatory delays, particularly given that landfill GCCS plans would already have been certified by a professional engineer with his or her professional credibility at stake.

In short, Republic supports a GCCS update and approval process that allows the plan to be kept on-site with the ability for an Agency to view the plan on-site or request a copy. EPA should abandon its proposal to impose new approval requirements that would only add administrative burden without providing any meaningful environmental benefits. The proposed changes to the approval requirements could actually increase emissions due to increasing the delays in the approvals needed to install new equipment to collect and control landfill gas. Therefore, Republic recommends that EPA consider adopting a procedure similar to that recently adopted for Subpart Ja for landfill GCCS plans. A selfimplementing approach like the one described above would help resolve Republic's past requests for EPA to address the significant backlog of GCCS design submittals, with the added benefit of reducing both landfill gas emissions and administrative burden.

#### D. **CORRECTIVE ACTION TIMELINE REQUEST**

EPA's proposal requests comments on the submittal of corrective action timelines. EPA is also "clarifying that 'expansion' of the GCCS means a *permanent* change that increases the capacity of the GCCS, such as increasing the size of the header pipes, increasing the blower sizes and capacity, and increasing the number of wells." 80 Fed. Reg. at 52126 (emphasis added). Although overall these changes are generally acceptable, Republic is concerned that the term "permanent" could be viewed as ambiguous in the context of any components of a GCCS that must be replaced at some point during the life of the system. To avoid confusion, we request EPA remove the term "permanent" from the clarification regarding the meaning of a landfill "expansion."

EPA specifically states in the preamble that they have not proposed a specific schedule in the rule language for submitting alternative timeline requests because investigating and determining the appropriate corrective action, as well as the schedule for implementing that corrective action, should be site specific and depend on the reason for exceedance. See 80 Fed. Reg. at 52126. We agree with EPA that corrective action schedules should be site specific.

However, in that same section of the preamble to its proposal, EPA requests comment on the alternative of extending the requirement for notification from "15 days" to "as soon as practicable, but no later than 60 days from when an exceedance is identified." 80 Fed. Reg. at 52126. EPA provides various other scenarios for timelines as well. Republic appreciates EPA's attempt to clarify the required

correction action timing requirements, given the inconsistency in interpretation of those requirements by different regulatory authorities. But EPA's discussion of this alternative appears to inappropriately assume that all exceedances must be addressed via an expansion of the GCCS and require a 15-day notification. EPA's discussion appears to ignore the alternative expressly addressed in the 1998 NSPS Subpart WWW amendments, which provides the following guidance on alternative timelines:

Section 60.755(a)(3) is being revised to allow an alternative timeline to be proposed for correcting an exceedance in collection header pressure at each well. Consistent with 60.755(c)(4)(v), a sentence is being added to 60.755(a)(3) and 60.755(a)(5) to allow an alternative timeline to be proposed to the Administrator for correcting an exceedance. This revision makes the sections consistent. Depending on the remedy selected to correct the problem, a different timeline may be needed, but any timeline extending more than 120 days must be approved by the regulatory agency. 63 Fed. Reg. 32,748 (June 16, 1998)

By ignoring the possible alternative timelines made available to landfills, EPA's request for comment disregards efforts by operators to systematically diagnose the cause and determine possible solutions for correcting the exceedance. Many remedial actions, including pumping of wells, jet cleaning of force mains, blower repair, header/lateral pipe re-grading, and others can take more than 60 days but less than 120 days to complete, and may be more appropriate than expanding the GCCS, depending on the cause of the exceedance. But under the alternative described in EPA's proposal, those corrective actions requiring between 60 and 120 days would not suffice; a GCCS would be required, even if the emissions exceedances could be address before the end of 120 days, because EPA's proposal would not allow for an alternative timeline.

Republic fails to see the benefit of requiring special approval for a repair that eliminates the exceedance in 60 days, much less the draconian result of requiring an expansion of the system if the request is late or denied, when in prior rulemaking actions EPA recognized that correcting an exceedance within 120 days should be sufficient with proper approval. Since, as noted above, GCCS expansions may not only be the incorrect response but potentially counterproductive, EPA should allow landfills and state regulators the time and flexibility to determine the appropriate response without unnecessary procedural burdens or prescriptive remedies.

A good example of the potential pitfalls associated with requiring notification of alternative timeline request arises in the context of asbestos. The Asbestos NESHAP (40 CFR 61 Subpart M) requires a 45day notification to the regulatory authority prior to initiating any excavation activity at a landfill, such as well or piping repair, replacement, or installation, that has potential to disturb regulated asbestos containing material (RACM). RACM disposal locations are documented upon disposal as required; however, over time, due to routine waste settlement, RACM may shift from initial documented location. Potential exists for possible disturbance of RACM during excavation such as well drilling and collection system repair. Therefore, sites may not be able to determine within 60 days whether an alternative timeline request will be necessary to ensure sufficient time remains to provide the notification required by the Asbestos NESHAP. State final landfill cover disturbance requirements can further delay identification of circumstances warranting an alternative corrective action timeline.

Many regulatory authorities currently follow the 1998 rule changes and do not require landfill owners or operators to submit alternative timeline requests if the corrective action or remedy other than expansion can be completed within 120 days. This approach minimizes paperwork and the burden on state agencies while recognizing that the schedule for implementing the corrective action will be sitespecific and depend of the nature of the exceedance. Requiring state and local authorities to change their procedures will result in increased paperwork burden and will increase the need for additional resources to complete the additional reviews and approvals, especially if requests must be submitted within 15 days and subsequently approved. In our experience, many requests are never approved, and the proposed change would only exacerbate that concern.

In light of the concerns identified above, Republic recommends that EPA only require landfill owners or operators to submit an alternative timeline request for approval as soon as practicable and only in circumstances in which a system expansion or alternative corrective action will require more than 120 days to complete, consistent with the 1998 preamble and rule provisions. This alternative approach would address all the issues simultaneously by providing landfills sufficient time to complete a root cause analysis to determine the cause of any exceedances and identify appropriate case-specific corrective actions in a way that minimizes the need for state or EPA approval and the inevitable delays associated with that process. This approach will provide sufficient compliance assurance to the agency and an incentive for landfills to complete corrective actions (other than expansion) within 120 days.

A good example of this type of policy can be found in the refinery NSPS that EPA adopted in 2008 and amended in 2012. See 40 C.F.R. Part 60, Subpart Ja. Whereas the current landfill NSPS requires special approval for a landfill to avoid a default corrective action (GCCS expansion), the refinery NSPS adopts a common sense approach that requires a root cause analysis to identify the appropriate corrective action, without identifying a default approach. See 40 C.F.R. § 60.103a(c)-(e). Because no special approval is needed for the corrective action identified by the refinery as appropriate; the refinery must simply develop an implementation schedule to complete, as soon as practicable, any corrective actions that cannot be fully implemented within 45 days. Refineries must then include that schedule in the facility's annual report. See 40 C.F.R. § 60.103a(e). Without the threat of a default corrective action, refineries are free to properly assess the most effective (and cost-effective) means of ensuring good air pollution control is maintained.

This approach to exceedances is particularly appropriate for landfills. Unlike refineries, which are subject to specific emission limits, the exceedance of which suggests the possibility of an immediate impact to the environment, landfills are only subject to operating requirements that do not necessarily involve increased emissions when exceeded. For example, a monitoring event that indicates that a landfill gas collection well has lost negative pressure does not provide any actual information regarding the amount landfill gas emitted to the atmosphere. In fact, there are many possible explanations for an exceedance of the negative pressure parameter, and many of those explanations would suggest that EPA's default corrective action, GCCS expansion, would be inappropriate, and perhaps even counterproductive. Thus, given the likely absence of any immediate risk of environmental harm, and the many possible explanations for an exceedance of monitored parameters in a GCCS, a root cause analysis and corrective action procedure—without a default corrective action—appears particularly well-suited to landfills. Republic recommends that EPA consider this approach in lieu of the

unnecessarily prescriptive rules that impose deadlines and the default corrective action that are found in the Subpart Cf proposal.

#### Ε. **ELECTRONIC REPORTING**

EPA's effort to implement e-reporting is commendable, but warrants further evaluation to ensure any implementation difficulties, unnecessary burdens, and cost impacts are identified and resolved before EPA mandates the use of electronic reporting. EPA should clarify exactly which reports must be submitted electronically, given that the preamble language identifies different reports than the proposed regulatory language. EPA should also recognize that any requirement to electronically submit older reports that are not already maintained in electronic form could be particularly burdensome, and likely impossible for older reports that landfills are no longer required to maintain and that may have been discarded (e.g., site closure reports for landfills that no longer accept waste).

More generally, Republic is concerned that EPA e-reporting systems have often failed to function properly, for a variety of reasons. Accordingly, Republic asks EPA to address the following concerns before requiring landfills to begin reporting through an electronic system:

- Evaluate system user website availability (smaller landfills in remote areas may not have broadband internet access)
- Ensure system can manage the total number of users without crashing (especially as deadline approaches)
- Validate system reliability for uploading reports to avoid software errors
- Design system to be consistent with the landfill regulatory reporting requirements
- Finalize reporting system software forms, instructions, and user interface at least three months prior to compliance deadline

EPA should also be careful not to oversimplify the requirements of the landfill regulations in designing its e-reporting system for landfills. EPA's emission guidelines for landfills are complicated regulations, and could be even more complicated in some ways following EPA's proposed revisions. EPA must reflect that complexity in any reporting system, particularly if that system will be the only available means of reporting compliance to EPA. EPA should also avoid any attempt to apply the electronic reporting systems for other industries to landfills because, unlike other industries, landfill emissions are unique in that they are not directly proportional to an activity rate. While some are relatively straight forward and could be added to the Electronic Reporting Tool (ERT), annual reporting for landfills is quite distinct from that required of other industries. Current annual and semi-annual landfill NSPS reports contain narratives, background, and a rationale for landfill operations and conditions that likely will not fit well within the electronic reporting systems developed for other industries. Republic asks EPA to ensure that the electronic reporting systems continue to allow for entry of these discussions – the benefit they provide should outweigh any additional programming challenges.

Republic is also concerned that states will not adopt EPA's electronic reporting system, particularly in jurisdictions that have adopted regulations that are more stringent than the proposed NSPS. As a result, EPA's electronic reporting requirement could result in redundant reporting requirements, as landfills

#### С. WET LANDFILLS

In Republic's experience, landfills located in wet climates do not warrant any different requirements than other landfills. As an initial matter, the landfill National Emission Standard for Hazardous Air Pollutants already provides a backstop with the MACT standard that requires bioreactor landfills to install a gas collection and control system in the bioreactor prior to initiating liquids addition, regardless of whether the landfill emissions rate equals or exceeds the estimated uncontrolled emission rate of 50 Mg/yr specified in the NSPS. Startup of the collection and control system is required within 180 days after initiating liquid addition or within 180 days after reaching 40% moisture content within the bioreactor, whichever is later.

However, inherent in that policy is the understanding that precipitation and leachate recirculation alone should not trigger additional requirements. Imposing new mandatory requirements for such landfills would result in a large and unnecessary burden that would require additional cost even though EPA has not provided discussion of the cost and cost effectiveness based on a one year early installation date. Additionally, there is no scientific data to support the determination that a wet landfill should be defined as a landfill with a prescribed precipitation per year and/or recirculates leachate (or other liquids).

Each landfill is somewhat unique in that the solid waste mass creates various and complex pathways for water movement, and moisture content can vary considerably even within a landfill, creating pockets of saturated and dry layers. In addition, several variables play a complex role in determining how the leachate and liquids will interact with the waste mass, including the type of waste accepted, daily cover types, climate, age of the waste, etc. For this and other reasons, EPA should not assume that greater amounts of precipitation or leachate recirculation will result in greater gas generation.

Without further scientific data to support early gas collection at these types of facilities, EPA should rely on the existing MACT rule which addresses waste decomposition in wet environments more quickly. We recommend EPA to address any proposed changes to "wet" landfills in a coordinated rule with the NESHAP Subpart AAAA and NSPS/emission guidelines to ensure a consistent approach. The same basic design capacity and emission-based triggers for installing a GCCS will appropriately ensure timely installation of emissions controls at all landfills.

#### D. MONITORING WELLHEAD FLOWRATE

In addition to EPA's request for comment on a requirement to monitor wellhead flowrate, discussed above, EPA has also requested comment on any other wellhead monitoring parameters that may help to ensure GCCS are well-operated. Republic has not identified any additional measurement or monitoring parameters that would improve GCCS performance. On the contrary, Republic believes that additional requirements are not necessary and would not result in any meaningful improvement in emissions control performance. The requirement to monitor and maintain records of oxygen/nitrogen and temperature will serve as useful guidance for landfill operators and beneficial use projects to assess the performance of the GCCS and enhance operation conditions on a site specific level that will promote greater emission reductions in a safe manner without imposing additional burdens. In addition, the