would otherwise require the submittal of a CAA section 111(d)/129 plan.

On March 21, 2011, EPA finalized emission guidelines for SSI units at 76 FR 15372, (found at 40 CFR part 60, subpart MMMM). Following the 2011 final rule, KDHE determined that there were two SSI units operating at a single facility in Kansas, but those units were permanently shut down on June 14, 2014 and September 7, 2016. Prior to shutdown of the two units at the single facility in Kansas, the two units were regulated via the Federal plan under the enforcement oversight of EPA Region 7. In response and following the shutdown of the units, KDHE submitted a negative declaration for SSI units on April 30, 2018.

EPA is proposing to accept KDHE's negative declaration submission made on April 30, 2018. This action applies to the state's regulatory requirements for existing facilities and not new sources.

III. What action is EPA proposing to take?

In this proposed action the EPA proposes to amend 40 CFR part 62 to reflect receipt of the negative declaration letter from KDHE certifying that there are no existing SSI units subject to 40 CFR part 60, subpart MMMM, in accordance with section 111(d) of the CAA.

IV. Statutory and Executive Order Reviews

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a ''significant regulatory action'' and therefore is not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011). This proposed action is also not subject to Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001). This action merely proposes to approve the state's negative declaration as meeting Federal requirements and imposes no additional requirements beyond those imposed by state law. Accordingly, the Administrator certifies that this rulemaking will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). Because this proposed action does not impose an enforceable duty upon State, local, or tribal governments, and does not reduce or eliminate the amount of authorization of Federal appropriations, and because it contains no regulatory requirements applicable to small governments, this proposed action does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4).

This action is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

This action also does not have Federalism implications because it does not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). Thus, Executive Order 13132 does not apply to this action. This action merely proposes to approve a state negative declaration submitted in response to a Federal standard and does not alter the relationship or the distribution of power and responsibilities established in the CAA. This rulemaking also is not subject to Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997) because it proposes to approve a state submission in response to a Federal standard.

This proposed action does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). Burden is defined at 5 CFR 1320.3(b).

List of Subjects in 40 CFR Part 62

Environmental protection, Air pollution control, Administrative practice and procedure, Sewage sludge incineration units.

Dated: December 14, 2018.

James B. Gulliford,

Regional Administrator, Region 7.

For the reasons stated in the preamble, EPA proposes to amend 40 CFR part 62 as set forth below:

PART 62—APPROVAL AND PROMULGATION OF STATE PLANS FOR DESIGNATED FACILITIES AND POLLUTANTS

■ 1. The authority citation for part 62 continues to read as follows:

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

Subpart R—Kansas

■ 2. Amend Subpart R by adding paragraph § 62.4183 to read as follows: Air Emissions From Existing Sewage Sludge Incineration Units.

§ 62.4183 Identification of plan—negative declaration.

Letter from the Kansas Department of Health and Environment submitted April 30, 2018, certifying that there are no sewage sludge incineration units subject to 40 CFR 60, subpart MMMM.

[FR Doc. 2018–27906 Filed 12–21–18; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 258

[EPA–HQ–RCRA–2015–0354; FRL–9988–41–OLEM]

RIN 2050–AG86

Revisions to the Criteria for Municipal Solid Waste Landfills To Address Advances in Liquids Management

AGENCY: Environmental Protection Agency (EPA).

ACTION: Advance Notice of Proposed Rulemaking.

SUMMARY: The Environmental Protection Agency (EPA) is considering whether to propose revisions to the criteria for Municipal Solid Waste Landfills (MSWLFs) to support advances in effective liquids management. To this end, EPA is seeking information relating to: Removing the prohibition on the addition of bulk liquids to MSWLFs; defining a particular class of MSWLF units (*i.e.,* bioreactor landfill units) to operate with increased moisture content; and establishing revised MSWLF criteria to address additional technical considerations associated with liquids management, including waste stability, subsurface reactions, and other important safety and operational issues. This Advance Notice of Proposed Rulemaking (ANPRM) also discusses the results of related research conducted to date, describes EPA's preliminary analysis of that research, and seeks additional scientific studies, data, and public input on issues that may inform a future proposed rule. The EPA is not reopening any existing regulations through this ANPRM.

DATES: Comments must be received on or before March 26, 2019. If necessary, EPA may convene a public meeting to collect more information on this issue after the close of the public comment period. The EPA would provide notice

and details of such a meeting on its website.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–RCRA–2015–0354 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. If you need to include CBI as part of your comment, please visit *http://epa/gov/dockets/comments.html* for instructions. 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. For additional submission methods, the full EPA public comment policies, and general guidance on making effective comments, please visit *http://www.epa.govdockets/comments.html*.

The EPA's policy is that all comments received will be included in the public docket without change including any personal information provided, unless the comment includes profanity, threats, information claimed to be CBI or other information whose disclosure is restricted by statute.

FOR FURTHER INFORMATION CONTACT: For questions regarding this ANPRM, contact Craig Dufficy or John Sager, Materials Recovery and Waste Management Division of the Office of Resource Conservation and Recovery (mail code 5304P), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460; Craig Dufficy telephone: 703–308–9037; email: *dufficy.craig@epa.gov*; John Sager telephone: 703–308–7256; email: *sager.john@epa.gov*.

SUPPLEMENTARY INFORMATION: The following outline is provided to aid in locating information in this preamble.

I. Does this action apply to me?

Entities potentially affected by a future rulemaking on liquids management in Municipal Solid Waste Landfills (MSWLFs), including public or private owners or operators of MSWLF units, may be interested in commenting on this ANPRM. Potentially affected categories and entities include the following:

TABLE 1—CATEGORIES OF POTENTIAL AFFECTED ENTITIES

Category	Example of affected entities
Federal Government	Agencies procuring waste services.
State Governments	Regulatory agencies and agencies operating landfills.
Industry	Owners or operators of municipal solid waste landfills.
Municipalities, including Tribal Governments	Owners or operators of municipal solid waste landfills.

The potentially affected entities may also fall under the North American Industry Classification System (NAICS) code 924110, Sanitation engineering agencies, government; or 562212, Solid Waste Landfill. The industry sector(s) identified above may not be exhaustive; other types of entities not listed may also be affected. If you have any questions regarding the applicability of a future final rule to a particular entity, contact the person listed in the following section.

II. What action is EPA contemplating?

The EPA is considering whether to propose revisions to the criteria in 40 CFR part 258 to support advances in effective liquids management. The purpose of this ANPRM is to solicit data and information to inform our thinking on this potential action.

First, EPA is evaluating whether to propose easing current restrictions on the addition of liquids in order to promote accelerated biodegradation of the waste. Time-limited variances for liquids addition are currently allowed at facilities with Research, Development and Demonstration (RD&D) permits authorized under 40 CFR 258.4. The EPA is considering whether it would be appropriate to propose removing the prohibition on the addition of bulk (*i.e.,* non-containerized) liquids and providing for the operation of bioreactor landfill units outside of the current RD&D program.

Second, future revisions could also include defining a new class of MSWLF units with specific requirements for how liquids may be managed in such units. For example, bioreactor landfill units were described in the preamble to the 2004 RD&D rule as units in which the controlled addition of non-hazardous liquid wastes or water accelerates biodegradation and landfill gas (LFG) generation.[1] A future proposed definition under the Resource Conservation and Recovery Act (RCRA) could also be quantitative in nature, such as by employing a specified percentage of moisture content or more by weight as a threshold criterion. Any future proposed definition might also include other factors such as the average amount of annual precipitation in an area; whether liquids are added intentionally for any purpose other than cleaning, maintenance, and wetting of daily cover; whether leachate is recirculated; and the magnitude of the

[1] 69 FR 13251, March 22, 2004, Research, Development and Demonstration Permits Rule for MSWLFs.

first-order biodegradation constant (k) discussed later in this document. Relatedly, EPA also believes that there may be some MSWLFs operating at high levels of moisture content (so-called ''wet landfill units'') that can be distinguished from bioreactor landfill units to which liquids are purposefully added. [2] Specific characteristics that may be considered in developing a RCRA definition for a bioreactor landfill unit or a wet landfill unit are discussed later in Section VII of this ANPRM. As in the 2004 RD&D rule preamble, bioreactor landfill units are generally characterized by the intentional addition of liquids to accelerate biodegradation, while the term wet landfill unit, which does not have a RCRA regulatory definition, is generally used to describe landfill units with a high moisture content, whether intentional or not. The intent of this ANPRM is to draw a distinction between these terms and consider possible revisions to Part 258.

Third, EPA is also considering whether other revisions to Part 258 may be necessary for MSWLFs operating as bioreactor landfill units or wet landfill units. These issues include whether to revise the design and operating criteria under Part 258 to address important safety and operational issues related to leachate collection, waste stability, subsurface reactions, and other issues. These are discussed in Section VI below. For informational purposes, Section IV of this ANPRM also discusses the results of related research conducted to date and describes EPA's preliminary analysis of that research.

Any revisions to Part 258 in a subsequent, proposed rulemaking could be narrowly tailored to focus on facilities that choose to add bulk liquids or otherwise operate as bioreactor landfill units. Alternatively, such revisions could be broadly applicable to address liquids management practices at all facilities. The EPA is not making any specific proposal through this ANPRM and plans to evaluate the data and comments received in response to this ANPRM before proposing any specific action.

With this notice, EPA is seeking public input on key issues at this preliminary stage to inform its thinking on any future proposed rulemaking. The EPA is not reopening any existing regulations through this ANPRM. The EPA anticipates that any revisions would be proposed under the authority of RCRA sections 1008, 2002, 4004, 4005 and 4010, 42 U.S.C. 6907, 6912, 6944, 6945, and 6949a. At that time, EPA would take public comment on those proposed revisions.

III. Regulatory Background

A. RCRA Subtitle D MSWLF Regulations

Under RCRA Subtitle D, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. 6941–6949a, EPA promulgated minimum national standards in 1991 [3] for owners and operators of MSWLFs at 40 CFR part 258, subparts A through G. The EPA has revised Part 258 on several occasions since 1991.[4] The regulations specifically include seven subparts: (1) General provisions, including RD&D permits; (2) location restrictions; (3) operating criteria; (4) design criteria; (5) groundwater monitoring and corrective action; (6) closure and post-closure care; and (7) financial assurance.

Under RCRA Subtitle D, approved states are to have permitting programs or other systems of prior approval to ensure that all MSWLFs in the state meet the federal minimum criteria. The EPA reviews and approves state permit programs in accordance with 40 CFR part 239. Upon EPA approval, a state program may provide flexibility for owners and operators of MSWLF units, as allowed by Part 258. For example, an approved state program may allow an owner/operator to use an alternative material or an alternative thickness for daily cover.

When promulgated in 1991, EPA's MSWLF regulations were intended to have the effect of keeping the contents of the unit as dry as possible. While EPA recognized at the time that moisture was necessary to promote biodegradation and waste stabilization,[5] there was concern that the risk of liner leakage and groundwater contamination increased as the moisture content increased. Based on data available at that time, EPA believed that minimizing the amount of liquid in a landfill was necessary to reduce the possibility of groundwater contamination resulting from the leakage of leachate; reduce possible damage to the liner and final cover of the unit resulting from waste subsidence; and reduce the buildup of hydrostatic pressure on the liner due to the ''bathtub'' [6] effect, when the combined rate of liquids addition and infiltration outpaced the leachate removal rate. To address these risks, the regulations prohibit disposal of bulk liquids in MSWLFs and require low permeability final cover systems. The design criteria in 258.40 indicate that, unless an alternative is approved, new units and lateral expansions are to be operated with a composite liner and leachate collection system that is designed and constructed to maintain a maximum allowable hydraulic head on the liner of 30 cm. The resulting design has accordingly come to be referred to as a ''dry-tomb landfill.'' [7]

B. RCRA MSWLF RD&D Rule

In 2004, EPA promulgated the RD&D rule at 40 CFR 258.4 [8] to expand research into liquids addition and other innovative landfill practices. The RD&D rule enables the director of an approved state waste management program to issue time-limited RD&D permits for the use of innovative methods that can vary the liquids restrictions in 40 CFR 258.28(a) and the run-on/run-off control systems in 40 CFR 258.26(a)(1), provided that the MSWLF unit has a leachate collection system designed and constructed to maintain less than 30 cm of leachate on the liner. The RD&D permits can also vary the final cover criteria of § 258.60(a)(1), (a)(2) and (b)(1), provided that the owner/operator demonstrates that the infiltration of liquid through the alternative cover system will not cause contamination of groundwater or surface water, or cause leachate depth on the liner to exceed 30 cm. All RD&D permits issued under 40 CFR 258.4 are required to include terms and conditions as protective as the MSWLF criteria in Part 258 to assure protection of human health and the environment. After the initial permit term of three years, owner/operators may apply to the director of an approved state program to renew the RD&D permit for an additional three-

[2] The terms ''wet,'' ''leachate recirculation,'' and ''bioreactor'' are sometimes used interchangeably in technical and popular literature to describe a landfill operated under conditions of elevated in-situ moisture content. The EPA also defines bioreactor landfills under the Clean Air Act NESHAP for MSWLFs. Unless otherwise noted, in this ANPRM the term ''bioreactor landfill unit'' refers to those units meeting the description contained in the 2004 RD&D preamble, and ''wet landfill unit'' refers to MSWLFs with elevated moisture content under consideration for possible revisions to Part 258.

[3] 56 FR 50978 (October 9, 1991), 40 CFR parts 257 and 258, Solid Waste Disposal Facility Criteria, Final Rule.

[4] *https://www.epa.gov/landfills/municipal-solid-waste-landfills.*

[5] 56 FR 51055 (October 9, 1991), 40 CFR parts 257 and 258, Solid Waste Disposal Facility Criteria, Final Rule.

[6] See 53 FR 33356 (August 30, 1988), 40 CFR parts 257 and 258, Solid Waste Disposal Facility Criteria, Proposed Rule; the ''bathtub'' effect is an analogy used to describe filling up a landfill with liquids faster than the the leachate collection system can remove them.

[7] 81 FR 28720, May 10, 2016, Revision to the Research, Development and Demonstration Permits Rule for MSWLFs.

[8] 69 FR 13242, March 22, 2004, Research, Development and Demonstration Permits Rule for MSWLFs.

year term. The initial RD&D rule allowed three renewals for a maximum permit term of 12 years. In 2016, EPA amended the RD&D rule to extend the maximum permit term to 21 years.[9]

As shown in Table 2, 16 states have approved RCRA Subtitle D RD&D programs. Among these states, EPA believes there are 35 facilities operating bioreactor landfill units with RD&D permits providing variances allowing liquids additions. The EPA has also issued a site-specific rule for the Salt River Landfill facility in Indian Country that authorizes, in part, the operation of a research, development, and demonstration bioreactor landfill.[10] All facilities with RD&D permits are required to submit annual performance reports to their state waste management programs demonstrating progress toward project goals. The EPA's site-specific rule for the Salt River Landfill also requires annual reports to EPA. The most recent annual reports available to EPA are shown in Table 2. The EPA provides information on its preliminary review of this information in Section IV.4 below.

TABLE 2—RD&D PERMITTED FACILITIES

State	Date program approved by EPA[11]	Listing of permitted facilities	Date latest annual report available[12]
Alaska	2011	Anchorage Regional Landfill, Eagle River	2009
		Central Peninsula Landfill, Soldotna	2017
		Fairbanks North Star Borough Landfill, Fairbanks	2018
		Palmer Central Landfill, Palmer	2014
California	2007	CWM Kettleman Hills Facility, Kettleman City	2010
		Yolo County Central Landfill, Woodland	2005
Illinois	2006	River Ben Prairie Landfill, Cook County	2018
Indiana	2005	None	N/A
Iowa	2009	None	N/A
Kansas	2009	Barton County Landfill, Great Bend	2016
		Johnson County Landfill, Shawnee	2017
		Plumb Thicket Landfill, Harper	2016
		Seward County Landfill, Liberal	2015
		Western Plains Landfill, Finney County	2017
Massachusetts	2013	None	N/A
Michigan	2006	Midland City Landfill, Midland	2016
		Smiths Creek Landfill, St. Clair	2016
Minnesota	2005	Spruce Ridge Landfill, Plymouth	2015
Missouri	2006	City of Columbia Landfill, Columbia	2017
Nebraska	2008	None	N/A
New Hampshire	2010	None	N/A
Ohio	2011	None	N/A
Oregon	2013	Columbia Ridge Landfill, Arlington	2018
		Finley Buttes Regional Landfill, Boardman	2016
Virginia	2009	Maplewood Landfill, Amelia County	2010
Wisconsin	2006	Cranberry Creek Landfill, Wood County	2017
		Deer Track Park Landfill, Watertown	2017
		Emerald Park Landfill, Waukesha County	2017
		Glacier Ridge Landfill, Horicon	2017
		Hickory Meadows Landfill, Hilbert	2017
		La Crosse County Landfill, La Crosse County	2017
		Lake Area Landfill, Sarona	2017
		Mallard Ridge Landfill, Walworth County	2017
		Metro Landfill, Franklin	2017
		Orchard Ridge Landfill, Menomonee Falls	2017
		Pheasant Run Landfill, Paris	2017
		Ridgeview Landfill, Whitelaw	2017
		Seven Mile Creek Landfill, Eau Claire	2017
		Timberline Trail Landfill, Stubbs	2017
		Valley Trail Landfill, Berlin	
Salt River Pima-Marcopa Indian Community (Arizona).	Site-specific rule	Salt River landfill, Phoenix Metropolitan Area	2011

C. Air Emissions Regulations

As will be seen in the discussion of bioreactor landfill research in the next section of this notice, one of the primary characteristics of bioreactor landfill units is that the rate of LFG generation is accelerated. Should EPA propose in a subsequent rulemaking to move bioreactor landfill operations outside of RD&D permits, EPA intends to evaluate changes to the RCRA regulations to ensure that LFG gas emissions are properly controlled in compliance with existing emissions regulations. Air emissions from MSWLFs are regulated under the RCRA Subtitle D regulations as well as EPA regulations issued pursuant to two Clean Air Act (CAA)

[9] 81 FR 28720, May 10, 2016, Revision to the Research, Development and Demonstration Permits Rule for MSWLFs.

[10] 74 FR 11677, March 19, 2009, Final Determination to Approve Research, Development, and Demonstration Request for the Salt River Landfill.

[11] Date listed is when the state RD&D Program was approved.

[12] Date listed is most recent report available to EPA; ''N/A'' means that EPA is not aware of any permitted facility in a state that is approved to issue an RD&D permit.

programs, the National Emission Standards for Hazardous Air Pollutants (NESHAP), and the New Source Performance Standards (NSPS). The RCRA rules impose standards to limit methane generation to a level below the Lower Explosive Limit (LEL) to prevent landfill fires and explosions that can kill or injure and damage containment structures and thereby cause emissions of toxic fumes.[13] By contrast, the CAA regulations for air emissions principally address hazardous air pollutants (HAP) and LFG, and they do not explicitly address methane. Yet, methane comprises close to 50% of LFG[14] on average, and EPA understands that adding liquids increases the rate of LFG generation. Thus, EPA plans to examine whether an increase in methane surface emissions may also result in exceedances of the current explosive gas limits in Part 258. Consequently, in any proposal to amend the RCRA rules to allow bulk liquids addition, EPA expects the need to consider the implications of enhanced methane generation at such units.

As mentioned, the RCRA Subtitle D standards for MSWLFs address explosive gas control. Section 258.23 of those rules specifies that the concentration of methane generated by a MSWLF must not exceed 25% of the lower explosive limit (LEL) in facility structures, and it must not exceed the LEL for methane at the property boundary. The rules also require a routine methane monitoring program to ensure those standards are met. (40 CFR 258.23(b).) If methane levels exceed the standards, the owner or operator must immediately take all necessary steps to ensure protection of human health and safety and notify the regulatory authority; place in the operating record information on the gas levels detected and steps taken to protect human health; and implement a remediation plan. (40 CFR 258.23(c))

The MSWLF NESHAP was promulgated in 2003 and is scheduled for a Residual Risk and Technology Review (RTR) due in 2020. Bioreactor landfill units are defined in the NESHAP to be a MSWLF or portion of a MSWLF to which any liquid other than leachate (leachate includes LFG 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 40% by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste. The NESHAP requires bioreactor landfill units to install and operate LFG collection systems within six months of reaching the 40% moisture content threshold. The MSWLF NSPS and Emission Guidelines (EG) were promulgated in 1996, followed by a revised NSPS/EG in 2016. The NSPS/EG rules, currently under reconsideration, require LFG collection 30 months after emissions reach a threshold of 34 metric tons (revised from a 50 metric ton threshold in the 1996 rules) of non-methane organic compounds (NMOCs) or more per year.

IV. Bioreactor Landfill Research History

After promulgation of the Part 258 standards in 1991, EPA increasingly became aware that landfill technology was evolving and that alternative designs and operations could benefit from further study through research and demonstration projects. Research initiated in the 1970s and 1980s by the University of Wisconsin—Madison[15] and Georgia Institute of Technology[16] contributed to EPA's understanding of the potential benefits of liquids addition. The EPA has been researching[17] bioreactor landfill units and liquids addition since 2001.

That year, EPA's Office of Research and Development (ORD) began conducting research through EPA's Project XL program and the use of Cooperative Research and Development Agreements (CRADAs). Project XL, which stands for ''eXcellence and Leadership,'' was a national pilot program that allowed state and local governments, businesses and federal facilities to work with EPA to develop innovative technologies and more cost-effective ways of achieving environmental and public health protection. As part of these partnerships, EPA issued regulatory, program, policy, or procedural flexibilities to conduct the work. Beginning in 2001, four bioreactor landfills were accepted into Project XL, including those in Buncombe County, North Carolina; Yolo County, California; King George County, Virginia; and the Maplewood facility in Amelia Country, Virginia.

The use of CRADAs was a means for EPA to promote collaborative research between EPA's ORD and external parties. Bioreactor landfill units operating with CRADAs[18] included the Outer Loop Landfill in Louisville, Kentucky, and the Polk County Landfill in Florida. The purpose of the research conducted at these Project XL and CRADA sites was to allow the landfills to add non-hazardous and non-containerized liquids and investigate the impact on waste biodegradation and stabilization.

In 2004, EPA promulgated the RD&D rule as described in Section III.2 above. The EPA believes there are 35 facilities with RD&D permits involving variances for liquids management including the addition of bulk liquids. The EPA has also issued a site-specific rule for the Salt River Landfill facility in Indian Country that in part authorizes operation of a research, development, and demonstration bioreactor landfill.

In preparing this ANPRM, EPA has reviewed and made a preliminary analysis of data from approximately 41 landfill facilities with variances for liquids addition granted through the Project XL, CRADA and RD&D research programs. Data analysis from the Project XL and CRADA facilities draws extensively from the 2007 ''Bioreactor Landfills State-Of-The Practice Review'' published by ORD. Data analysis from the 35 RD&D-permitted facilities, along with additional data analysis from the Project XL and CRADA facilities, draws extensively from the 2014 ORD report ''Permitting of Landfill Bioreactor Operations: Ten Years after the RD&D Rule.'' The EPA also compiled and reviewed the most recent annual reports available from the facilities identified in Table 2 above.[19] The EPA presents examples of these data in the sub-sections below. Later, in Section V, EPA discusses potential benefits and environmental considerations associated with bioreactor landfill units based on preliminary analysis of the data now available to it. Should EPA determine after further analysis to proceed with a rulemaking proposal,

[13] 56 FR 51051–52.

[14] See *https://www.epa.gov/lmop/basic-information-about-landfill-gas.*

[15] Ham & Bookter, 1982; Barlaz et al., 1987 as referenced in ''Bioreactor Landfills State-Of-The Practice Review,'' U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–09/071.

[16] Pohland, 1975; Pohland & Harper, 1986 as referenced in ''Bioreactor Landfills State-Of-The Practice Review,'' pages iv–vi, U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–09/071.

[17] As used in this ANPRM, the term ''EPA research'' is used to describe EPA cooperative efforts with and analysis of data from facilities with variances for liquids addition granted through the Project XL, CRADA, and RD&D programs. Variances were granted with the understanding that performance data would be shared with EPA and the states. The EPA is not the owner/operator of these facilities where full-scale landfill operations are taking place.

[18] See EPA Docket # EPA–HQ–RCRA–2015–0354 for summaries of the Outer Loop, Buncomb County, and Yolo County landfills.

[19] These reports and other citations for this ANPRM are accessible via *http://www.regulations.gov* (Federal eRulemaking Portal) using ID No. EPA–HQ–RCRA–2015–0354.

that proposal will be based on additional risk evaluation.

A. Project XL and CRADAs

Summary data from the Outer Loop facility in Kentucky, the Yolo County landfill in California, and the Buncombe County facility in North Carolina are presented below. The data as presented are intended to be illustrative but not a comprehensive summary of the operation and performance of these facilities.

1. Outer Loop Landfill

The Outer Loop Landfill Bioreactor (OLLB) project in Louisville, KY [20] studies solid waste decomposition, moisture balance, LFG generation, and leachate quality to evaluate the effect of bioreactor landfill operations on municipal solid waste (MSW) decomposition.

Operations

The OLLB study evaluates three types of landfill cells: (i) Control cells, in which no liquids were added; (ii) cells in which liquids were added after the cell had been completely filled with waste (the Retrofit cells); and (iii) cells in which liquids and air were added as the waste was placed in the landfill (the As-Built cells).

Reported Results

- The results of the moisture balance calculations indicate an increase in moisture content of six to seven percent in the As-Built cells, an increase of approximately one percent in the Retrofit cells and a slight decrease in the Control cells during the 2000–2005 study period.
- Data regarding leachate head in the sump, which was used as an indirect indicator of leachate head on the liner, indicated that operating a landfill as a bioreactor caused an overall increase in leachate head in the sump compared to the Control cells. However, in all three cases, the average leachate level on the liner was well below the 30 cm maximum allowable head.
- Based on data evaluated in the 2006 Outer Loop Second Interim Report, there is no indication that the bottom liner system of the test cells was compromised while installing liquid application features, or while applying liquid through those features.
- While variable, the rate of LFG generation in the As-Built bioreactor landfill cell was greater than that of the Control cell, potentially providing a greater rate of energy production if collection occurred early and consistently.
- The LFG decay constant (k value [21]) for As-Built bioreactor landfill cells was evaluated to be 0.16 yr-1 while the Retrofit cells and the Control cells had a k valueof approximately 0.061 yr-1.

Although the concentration (ppmv) of non-methane organic carbon (NMOC) in the collected LFG did not appear to be higher in the bioreactor landfill cells compared to the Control cells, the overallproduction was higher because of the higher gas flow rate.

- Evaluation of the biochemical oxygen demand to chemical oxygen demand ratio (which is generally an indicator of organic solids decomposition) revealed that waste decomposition in the As-Built bioreactor landfill cells may have been accelerated compared to the Control cells.
- Overall, the analysis of the data collected during the first five years indicate that the addition of liquids accelerated waste degradation based on leachate quality and solid waste decomposition data. The LFG quantity data indicate that the decay rate was highest in the As-Built cell and lowest in the Control cell.

2. Yolo County Central Landfill, California

The goal of the Yolo County Central landfill project [22] is to manage landfill solid waste for rapid waste decomposition, maximum LFG generation and capture, and minimum long-term environmental consequences.

Operations

- Waste decomposition is accelerated by improving conditions for either the aerobic or anaerobic biological processes and involves circulating controlled quantities of liquid (leachate, groundwater, gray water, etc.), and, in the aerobic process, large volumes of air.
- Cover cells with surface membrane for high-efficiency gas capture; and liquid addition to the first (enhanced) cell, but not the second (control) cell.
- The gas capture cover system was installed before liquid addition was initiated.

Reported Results

- Over five-fold acceleration of methane production.
- Reduction of fugitive methane emissions to <5% of generated LFG.
- Rapid and extensive volume reduction in the enhanced cell compared to the control cell.
- Waste stabilization (indicated by methane recovery, air-space volume loss and other indicators) compared to the dry-tomb control.
- Observed leachate head over the base liner was 2 inches, and less than 20% of the 30 cm maximum hydraulic head allowed under Part 258.
- Settlement in the 3.5-acre study enhanced cell averaged 8.5% of the waste mass, and settlement in the 6-acre control cell averaged 4% of the waste mass.
- Landfill stabilization and completed LFG generation are estimated to be complete at 15 years for full-scale cells.

3. Buncombe County, North Carolina Landfill

The Buncombe County bioreactor landfill [23] is a full-scale implementation of a bioreactor landfill system performed in two phases.

Operations

- Phase 1 is a retro-fit system; the trenches were installed after the landfill cells were filled to capacity. The Phase 1 Retrofit System was installed in Cells 1–5 and has been in operation since April 2007.
- Phase 2 is a build-as-you-go, full-scale bioreactor landfill system; the infrastructure was installed in stages as the waste was being placed. The build-as-you-go approach provides more extensive wetting of the waste and earlier capture of LFG.
- This project was granted regulatory flexibility to apply liquids other than leachate to the waste. As of 2011, only leachate had been used since there was adequate leachate available onsite to meet the needs of the project.
- In 2011, the County completed construction of a 1.4 MW landfill gas-to-energy project at the site. Part of the project included the installation of 25 vertical gas wells in Cells 1-5 in the Retrofit System, and the gas collection component of the Phase 1 Retrofit System was removed. It was decided

[20] ''Landfill Bioreactor Performance: Second Interim Report Outer Loop Recycling and Disposal Facility,'' EPA/600/R–07/060, September, 2006.

[21] The ''k'' value is a biodegradation constant; the higher the k value, the higher the rate of biodegradation. See *https://www3.epa.gov/ttn/chief/ap42/ch02/index.html* for further discussion of k values. Also see ''Impact of Accelerated Biodegradation'' in a memo to the docket for this ANPRM by John Sager, USEPA, September 24.

[22] ''Full Scale Landfill Bioreactor Project at the Yolo County Central Landfill,'' Yazdani, Kieffer, Akau, 2002; ''Full Scale Bioreactor Landfill for Carbon Sequestration and Greenhouse Gas Emission Control, Final Technical Progress Report,'' Yazdani, Kieffer, Sananikone, Augenstein, March 2006, D.O.E. Award Number DE–FC26–01NT41152; and ''Controlled Bioreactor Landfill Program at the Yolo County Central Landfill,'' Yazdanie, Kieffer, Sananikone, Methane to Markets Partnership Expo, Beijing, China, November, 2007.

[23] USEPA PROJECT XL Buncombe County Bioreactor Project, 2011 and 2014 Progress Reports, CDM Smith.

that dedicating the bioreactor landfill cell trenches to leachate recirculation and using the vertical wells for gas collection would be simpler to operate and provide a more consistent flow of LFG to the generator.

Reported Results

- Cumulatively, 4 million gallons of leachate were recirculated, resulting in an estimated 803 fewer truck trips to the wastewater treatment plant and $306,758 in hauling cost savings.
- Significant settlement occurred in the closed landfill cells receiving leachate recirculation, leading to a more stable ground surface layer, while adding the equivalent of 5 months of capacity valued at nearly $2 million.
- Landfill stabilization and completed LFG generation are estimated to be complete at 15 years for the full-scale cells.
- A surface cover geomembrane was used as a temporary cover (when no cell activity) to prevent gas emissions to the atmosphere and confine gas to the conductive layer just below the surface.
- No downgradient groundwater contamination has been identified through 2017 from groundwater monitoring.[24]

B. Report: Bioreactor Landfills, State of the Practice Review

In 2009, ORD published the report ''Bioreactor Landfills, State of the Practice Review'' (State of the Practice report)[25]. The State of the Practice report includes the following summary conclusions:

- Conventional containment systems (liners, covers, and leachate collection systems) employed for conventional landfills function effectively for bioreactor landfills.
- Action leakage rates were never exceeded and flow rates were similar between conventional and bioreactor landfill cells where comparisons were possible.
- Concentrations of heavy metals and organic compounds are similar in bioreactor landfills and conventional landfills, and leakage rates for conventional and bioreactor landfills are comparable.
- Bioreactor landfill operations employing conventional containment technologies (including alternative liners) do not impose greater risk to groundwater than conventional landfills.
- Methane generation at bioreactor landfills is accelerated relative to predicted rates.
- There is no indication that gas production increases appreciably as the moisture content increases above 40%.

In addition to these findings, another finding of the study was that insufficient data were being collected at commercial and municipal landfills to fully evaluate whether bioreactor landfill methods used in practice are effective in enhancing waste degradation, stabilization, and gas generation. Future studies should include more detailed monitoring and evaluation schemes that can be used to form definitive conclusions regarding the effectiveness of bioreactor landfill operational methods.

C. Report: Permitting of Landfill Bioreactor Operations: Ten Years After the RD&D Rule

In 2014, ORD published ''Permitting of Landfill Bioreactor Operations: Ten Years After the RD&D Rule.'' [26] The report found that, since promulgation of EPA's MSWLF criteria in 1991, a growing number of landfill sites have practiced leachate recirculation as well as addition of bulk free liquids, generally under *ad hoc* state-level research and development programs (*e.g.,* the Florida Bioreactor Demonstration Project) or site-specific permitting mechanisms administered in association with EPA, such as described above. The report identifies a number of associated economic and environmental benefits, including: The acceleration of LFG generation; minimization of the need for leachate treatment and offsite disposal; more rapid reduction in concentration of leachate constituents of concern; and an increase in the rate of landfill settlement. The report also concludes that bioreactor landfill unit operations require increased levels of engineering design, operational control, and monitoring to safely achieve the benefits of accelerated LFG generation and meet EPA's goals for protection of human health and the environment. Additional challenges for bioreactor landfill management that are identified in the report include issues with temperature control and increased LFG collection and associated control. The study also identified that buildup of saturated conditions and rapid waste settlement from accelerated waste decomposition can compromise the structural stability of the waste mass.

D. RCRA MSWLF RD&D Annual Reports

Research at MSWLFs with RD&D permits is ongoing, and as discussed above, facilities with RD&D permits are required to submit annual performance reports to their state waste management programs demonstrating progress toward project goals. The EPA conducted a preliminary review of these reports in 2018 looking specifically for evidence of exceedances of groundwater protection standards, and we found no evidence of significant exceedances resulting from bioreactor landfill unit operations. For example, we found evidence of exceedances of state action limits and other parameters that were attributed in the reports we examined to background concentrations, activities at non-bioreactor landfill cells, and normal variations.

The EPA presents the following data from one 2016 annual report [27] as illustrative of the information and data in the reports. The data as presented are not intended to be a comprehensive summary of the operation and performance of this facility. In that report, the report authors state the following:

- A total of 865,800 gallons has been added to the bioreactor landfill unit since sludge acceptance began in August, 2014.
- The sludge application did not result in any odor issues during the reporting period.
- The overall quality of leachate generated by the bioreactor landfill unit does not appear to have been impacted by sludge addition during the reporting period. Some of the components, such as organic and suspended solids, were adequately treated by the bioreactor landfill unit.
- Temperature of the waste mass was within a suitable range for the development of microbial activity, therefore indicating the addition of sludge did not have a negative impact on waste temperature.
- The predicted gas generation volume was in general agreement with the measured data using the selected methane generation parameters, including the relationship between the sludge addition and the first order decay coefficient.
- The overall results of this analysis show that wastewater digested sludge

[24] The ''2017 Environmental Monitoring and Reporting Form'' submitted to the North Carolina Department of Environmental Quality suggested possible groundwater exceedances; these were identified as background contamination in telephone communication November 20, 2017, USEPA and NCDEQ.

[25] C. Benson, M. Barlaz, and T. M. Tolaymat. ''Bioreactor Landfills State-Of-The Practice Review,'' pages iv–vi, U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–09/071.

[26] Tolaymat, T. AND J. Morris. ''Permitting of Landfill Bioreactor Operations: Ten Years after the RD&D Rule.'' U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–14/335, 2014.

[27] 2016 RD&D Annual Report, City of Midland, Michigan MSWLF; CTI and Associates, Novi, Michigan; June, 2017.

can be safely received, transported, and applied to accelerate solid waste decomposition.

The EPA continues to analyze these reports and additional data and information that are provided to the agency. As it does so, EPA will consider questions such as those presented in Section X. Interested stakeholders may thus use those questions as a guide in submitting data and information in response to this ANPRM. The EPA notes that the following questions are of particular importance in the evaluation of site data to distinguish the potential risks of bioreactor landfill units as compared to landfill units with lower moisture content, including whether the addition of some kinds of bulk liquids may pose greater risk than other kinds of bulk liquids:

(1) What type and what quantity of bulk liquids were added to the waste mass?

(2) Is there evidence of groundwater contamination, air emissions violations or other liquids management problems?

(3) Was LFG collection required in the RD&D permit, and if so, when was gas collection required in relation to the timing of liquids addition?

(4) Was gas collection infrastructure required to be installed early in the construction of new cells, or were vertical wells inserted at some point after cells were being filled?

V. Potential Environmental Benefits, Cost Savings, and Environmental Considerations

A. Potential Environmental Benefits

Based on research conducted at facilities with RD&D, Project XL and CRADA-based permits discussed in Section IV above, the data from these facilities and EPA analysis of the data suggest the following potential environmental benefits from controlled liquids addition to MSWLFs:

- Acceleration of LFG generation rate, thereby decreasing the duration of LFG generation potential and limiting the post-closure care period during which air emissions can occur;
- Acceleration of LFG generation rate, thereby decreasing the duration of LFG generation potential and limiting the post-closure care period during which air emissions can occur;
- Minimization and potentially elimination of the need for leachate treatment and offsite disposal, thereby decreasing the risk of spills during transport and decreasing potential releases to the environment during off-site treatment and disposal;
- More rapid reduction in concentrations of biodegradable organic compounds, potentially limiting the post-closure care period required for leachate control and decreasing the risk of releases of contaminants to the air and groundwater during post-closure care;
- An increase in the rate of waste settlement and compaction, thereby promoting more efficient utilization of permitted landfill capacity;
- Enhanced opportunities for beneficial reuse of the landfill property.

The available data also suggest that bioreactor landfill units, when compared to conventional dry-tomb MSWLF units, may offer the potential for reduced long-term risk through decreased release of gas emissions to the environment, faster waste subsidence and stabilization, decreased transport and treatment of leachate, and potentially a shorter period of time for post-closure care. The economic benefits that may accrue include decreased costs for leachate treatment and increased revenue from the use or sale of captured LFG and acceptance of bulk liquid wastes. The EPA requests public comment on our analysis of these potential benefits and on the related questions found in Section X.

B. Potential Cost Savings

Based on research conducted at facilities with RD&D, Project XL and CRADA-based permits, the data from these facilities and EPA analysis of the data suggest the following potential cost savings to owners and operators of MSWLFs:

- Acceleration of LFG generation rate thereby: Increasing opportunities for economically viable energy utilization options, such as on-site co-generation of electricity or sale of LFG for use off-site; extending the period over which capture of LFG is economically viable; and limiting the post-closure period required for LFG control and associated costs;
- Decrease in transport costs and the need to rely on publicly owned treatment works (POTWs) due to minimizing or eliminating the need for leachate treatment and offsite disposal;
- Reduction in post-closure care costs associated with maintenance and emission monitoring due to more rapid reduction in concentrations of biodegradable organic compounds;
- Increased utilization of permitted landfill capacity resulting from increased waste settlement and compaction;
- Reductions in the scope, duration, and associated costs for post-closure care.

C. Environmental Considerations

Due to the nature of bioreactor landfill operations, which are based on adding liquids to accelerate biodegradation, EPA is particularly interested in further examination of three categories of potential adverse effects to human health and the environment: (1) The potential for release of contaminants to the groundwater due to increased moisture content and the potential for increased hydrostatic pressure on the liner; (2) the potential for release of contaminants to the air resulting from accelerated biodegradation and LFG generation; and (3) the potential for liquids management practices within the current regulatory framework to magnify any potentially adverse impact of bioreactor landfill operations, including releases to the environment due to the presence of additional liquids, resultant subsurface heating events, or waste stability issues. The EPA thus expects to consider, among other things, the following factors as it considers proposed design and operating criteria including whether:

- Increased engineering design requirements and more complex construction would be necessary;
- Higher levels of oversight and operator skill would be necessary due to increased complexity of conducting day-to-day operations;
- Issues with temperature control, particularly in aerobic bioreactor landfill units, may be present;
- There are potential waste compatibility issues associated with adding liquids to unknown MSW constituents; and
- There are potential waste stability issues and the potential for lateral leachate seeps.

1. Groundwater Considerations

The EPA intends to carefully examine the potential for increased risk of groundwater contamination from liquids addition and bioreactor landfill units as part of its evaluation of the existing liquids restrictions. The information available to EPA to date has not identified evidence of significant differences between groundwater contamination at bioreactor landfill units compared to conventional units. The ORD ''State of the Practice'' report,[28] for example, provides a summary of data comparing the impact

[28] C. Benson, M. Barlaz, and T. M. Tolaymat. ''Bioreactor Landfills State-Of-The Practice Review,'' pages iv–vi, U.S. Environmental Protection Agency, Washington, DC, EPA/600/R–09/071.

of bioreactor landfill and conventional units, including that:

- Conventional containment systems (liners, covers, and leachate collection systems) employed for conventional landfills function effectively for bioreactor landfills.
- Liner leakage rates for conventional and bioreactor landfills are comparable.
- For the landfills evaluated, the action leakage rates (*i.e.,* the rates at which remedial action should be taken) were not exceeded and flow rates were similar between conventional and bioreactor cells where comparisons were possible.
- The evaluated bioreactor landfill unit operations employing conventional containment technologies do not impose greater risk to groundwater than conventional landfills.

The EPA requests any monitoring data that may demonstrate an increased risk of groundwater contamination resulting from the operation of bioreactor landfill units or from liquids addition as compared to conventional landfill units. See Section X for additional questions.

2. Air Emissions Considerations

The EPA also expects to carefully consider the potential for releases of LFG and other non-methane organic compound air emissions associated with liquids addition to MSWLF units. The information available to EPA described above indicates strongly that the rate of LFG generation is accelerated with the addition of liquids, and that the potential exists for methane and other HAPs to be released if LFG is not properly controlled. Accelerated emission of odors may also begin after liquids addition due to the possible formation of sulfur compounds, terpenes and aldehydes. Again, as described above, the ''State of the Practice'' report indicates:

- Methane generation at bioreactor landfill units is accelerated relative to rates predicted using AP–42 default values [29] for conventional bioreactor landfill units. Accordingly, gas collection should be initiated as soon as possible after waste burial or potentially prior to liquid introduction. Design and analysis of gas collection systems should also account for the higher rate of LFG produced over a shorter duration.
- There is no indication that gas production increases appreciably when the wet weight water content of a bioreactor landfill reaches 40%, which is the metric for the current bioreactor landfill regulatory framework under the 2003 CAA NESHAP regulations. Metrics other than wet weight water content, such as those described in Section VII, should be considered as thresholds to require installation of gas collection systems.

The EPA thus requests data and information concerning the risk of air emissions from bioreactor landfill units, including data concerning the correlation between moisture content and LFG generation rates. The EPA also intends to examine LFG collection requirements in RD&D permits and requests information about additional LFG collection requirements in those permits, including early gas collection, over and above requirements for non-bioreactor landfill units. Examples of data that may be helpful include the results of air emissions testing and other operations reports that correlate LFG emissions with moisture content. See Section X for additional questions.

VI. Additional Technical Considerations

In addition to considerations associated with potential releases to groundwater and air, EPA is interested in evaluating the following design and operating characteristics [30] as they pertain to effective liquids management in bioreactor landfill units:

- Leachate collection and removal systems (LCRS);
- Waste stability;
- Waste compatibility;
- Cumulative loading of constituents of concern; and
- Elevated temperature landfills (ETLFs).

Foremost among these issues is that bioreactor landfill units need to be designed and operated to handle high moisture content and high leachate volume. For landfills with elevated moisture content, either as result of purposeful liquids addition, stormwater management practices, or incoming waste properties, the LCRS must be designed and operated to handle higher volumes of leachate. The use of liquids addition or leachate recirculation at a site can influence LCRS design in three primary ways. First, the leachate impingement rate (flow of leachate intercepted by the liner and LCRS) requires more flow removal capacity. Second, the increased unit weight of the waste, as a result of the elevated moisture levels, results in greater overburden stress being placed on the landfill foundation, which can in turn result in greater differential settlement over the sloped base of the landfill. Third, the potential for clogging the LCRS must be considered. While it is possible to retrofit a landfill unit to become a bioreactor landfill unit, ideally liquids addition infrastructure is installed at the outset, with similar infrastructure also in place to collect LFG.

The impact of high moisture content on waste stability is another important factor for consideration. If the LCRS is insufficiently designed or improperly operated, liquids can mound on the bottom liner, resulting in the development of increased pore-water pressures at the base of the landfill and raising concerns about slope stability. The key design and operational challenge to minimizing potential slope concerns is to avoid excessive buildup of pore pressure. This can be accomplished by maintaining and monitoring the LCRS, avoiding the creation of low permeability zones within the landfill where leachate can become perched, and allowing appropriate time in between large pressure liquids addition events.

Waste compatibility and the potential for cumulative loading from the application of liquid industrial wastes are additional factors that EPA intends to consider in association with any change to the current prohibition on the addition of bulk liquids. The EPA is interested in examining the potential for application of such wastes to introduce constituents that would not otherwise be in the unit. The potential risk could be due to constituents in those liquid wastes impacting biodegradation or forming products of concern in the unit. With respect to cumulative loading, the potential risk could arise from the presence of constituents in liquid industrial wastes at concentrations that, while below toxicity characteristic leaching procedure (TCLP) thresholds for hazardous wastes at the time of application, could nevertheless build up over time within the unit. For example, if the constituents are at concentrations just below the TCLP (*e.g.,* mercury-bearing liquid wastes with [Hg] = 0.19 mg/L; and lead-bearing liquid waste with [Pb] = 4.9 mg/L), EPA is interested in the potential to exceed the TCLP once introduced to the landfill unit. The EPA requests comment to identify specific bulk liquids that have the potential to cause waste compatibility problems or could pose problems due to cumulative loading.

[29] See *https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors.*

[30] For a comprehensive discussion of design and operating characteristics associated with bioreactor landfill units, see ''Sustainable Practices for Landfill Design and Operation,'' by Townsend, Powell, Jain, Xu, Tolaymat (USEPA/ORD) and Reinhart, Springer Science and Business Media, New York, 2015.

The possibility of subsurface reactions or heating events (known as elevated temperature landfills (ETLFs)) is also present in landfill units with increased levels of liquids. ETLFs pose significant challenges including (1) changes in gas and leachate quality and quantity which adversely impact the ability to manage these emissions effectively; (2) rapid waste settlement with implications for slope stability; and (3) recorded gas and waste temperatures as high as 300 °C, which can compromise parts of the internal landfill infrastructure.

While current research and data [31] suggest that ETLFs may be caused by many factors, one factor that EPA believes contributes to their development is high moisture content, possibly due in some instances to either perched water tables or large volumes of leachate head buildup on the bottom landfill liner in ETLF-affected areas. While it is not clear at this time if the abundance of liquids is the cause or the result of these subsurface heating reactions, it is important to recognize that the head on liners (HOL) is a regulatory requirement (see 40 CFR 258.40(a)(2)) which provides an upper limit for the head on the bottom liner and which EPA is not considering altering at this time. In the context of bioreactor landfill units, proper leachate drainage and conveyance from the waste mass are needed to prevent exceedances of the HOL limit.

To address concerns from ETLFs, EPA expects that particular attention will need to be given to landfill units that are proposed to be retrofitted for leachate injection to enhance waste stabilization. Retrofitting landfill cells to handle increased moisture content is complicated by the need to install the necessary infrastructure with the waste mass already in place, and because of the reduced hydraulic conductivity of aged wastes and soils with high overburden pressures. The EPA requests comment on the possibility of establishing different regulatory requirements for new vs. retrofitted bioreactor landfill units.

VII. Characteristics of Bioreactor Landfill Units and Wet Landfill Units

If it proceeds to a future proposed rule, EPA will need to identify those units which are subject to revised requirements. The EPA is therefore also seeking public input on how it most appropriately may define a ''bioreactor landfill unit.'' The EPA has identified and is seeking public comment on two possible approaches to defining these units that reflect EPA's understanding of the information it has assembled to date.

One approach to define a bioreactor landfill unit in RCRA regulations is by moisture content.[32] Should EPA take such an approach, EPA is considering whether a 30% moisture threshold may be appropriate as a quantitative characteristic of a bioreactor landfill unit. Thirty percent represents a point above the 20–25% [33] moisture content range in which MSWLFs typically operate, and at which biodegradation may be accelerated on as a consequence of the addition of liquids.

Alternatively, a bioreactor landfill unit may be characterized qualitatively, as a MSWLF unit to which liquids have been intentionally added for any purpose other than cleaning, maintenance, and wetting of daily cover. This qualitative approach to defining a bioreactor landfill unit is consistent with the understanding that liquids need to be added for normal maintenance, including cleaning and wetting of daily cover, while additional liquids may serve only to accelerate biodegradation. The EPA solicits comment on the impact of increased moisture content in the range of 25–40% and above, and whether there are factors governing moisture content for which EPA should account, other than normal maintenance and accelerated biodegradation.

The EPA is also interested in obtaining public comment on whether to regulate wet landfill units as a distinct group under the RCRA regulations and as a possible alternative to defining and regulating bioreactor landfill units. Increased moisture content has a similar effect on biodegradation whether it is added intentionally (as in bioreactor landfill research projects) or not, and thus EPA is exploring whether increased moisture content from any or all sources may pose similar technical issues that warrant special regulatory treatment.

The EPA therefore solicits comment on the following characteristics which it is considering to identify which MSWLF units may be appropriately identified as ''wet landfill units.'' The EPA also requests comment on whether these factors should be considered individually or in combination with one another to identify such units, including whether:

- Liquids are recirculated or added for any purpose other than cleaning, maintenance, and wetting of daily cover;
- The unit is located in a region with 40 inches or more of annual precipitation;
- The unit has a k value of 0.057 or more;
- Precipitation plus leachate recirculation is greater than 55 inches per year; or
- The unit is a bioreactor landfill unit.

Another measure that may be appropriate to identify a bioreactor landfill unit or a wet landfill unit is the rate of leachate collection. Leachate collection data are generally available at MSWLFs, and these data could be used as a surrogate measure of the amount of liquid in a unit.

In considering the merits of defining a new class of bioreactor landfill units or wet landfill units, EPA is motivated to improve the management of liquids at MSWLFs based on advances since the Part 258 standards were promulgated in 1991. As currently used, EPA believes the term bioreactor landfill may unnecessarily connote a small class of research facilities, the benefits of which may not be recognized as practicable in wider use. The EPA solicits input on the options for defining bioreactor landfill units or wet landfill units presented here and whether a new RCRA definition for one or the other may contribute to the advancement of liquids management practices at MSWLFs.

VIII. Universe of MSWLFs Potentially Affected by This ANPRM

In addition to potentially defining a new RCRA class of bioreactor landfill units or wet landfill units, EPA is also considering how to address existing bioreactor landfill units, such as those with RD&D permits, in future proposed rules. As discussed previously, EPA is aware of 35 facilities with RD&D

[31] Ohio EPA (2011). Subsurface Heating Events at Solid Waste and Construction and Demolition Debris Landfills: Best Management Practices. Guidance Document #1009. October 14, 2011. (*http://www.epa.ohio.gov/portals/34/document/guidance/subsurface%20heating%20events.1009.pdf*).

Ohio EPA (2016). Higher Operating Value Demonstrations. Division of Air Pollution Control Engineering Guide #78. Division of Materials and Waste Management Guidance Document #1002. (*http://epa.ohio.gov/Portals/34/document/guidance/gd_1002.pdf*).

Palmiotto, M., Fattore, E., Paiano, V., Celeste, G., Colombo, A., & Davoli, E. (2014). Influence of a municipal solid waste landfill in the surrounding environment: Toxicological risk and odor nuisance effects. Environment international, 68, 16–24. DOI: 10.1016/j.envint.2014.03.004.

West Lake landfill, *https://www.epa.gov/mo/west-lake-landfill;* Stony Hollow landfill, *http://stonyhollowlandfill.com/*; and Rumpke landfill, *http://epa.ohio.gov/Portals/47/pic/Rumpke%20Landfill%20factsheet.pdf?ver=2014-07-08-103928-983*.

[32] See EPA–456/R–05–004, ''Example Moisture Balance Calculations for Bioreactor Landfills'' for a discussion of methods to calculate moisture content.

[33] Solid Waste Association of North America, ''Manager of Landfill Operations Training Manual,'' page 1–12, January, 2003.

permits. Because the RD&D authorization is time-limited, bioreactor landfill units operating under RD&D permits will have to suspend operations authorized under their RD&D permit no later than 21 years after they began, unless EPA makes nationwide regulatory changes or issues a site-specific rule to authorize the unit's continued operation. The EPA understands some RD&D permits may reach the end of the 21-year maximum permit term as soon as 2024.

The EPA believes that regulatory changes to allow the addition of bulk liquids to MSWLF units as a revised minimum criterion in 40 CFR 258, or as a variance under which state directors could approve bulk liquids addition on a site-specific basis, would enable a larger group of facilities to pursue bioreactor landfill operations or liquids addition practices. Anecdotally, EPA has learned that some facilities would like to develop bioreactor landfill units, but only if EPA were to allow bulk liquid addition outside of the temporary RD&D permit process. The 35 facilities with RD&D permits are a small portion of the open MSWLFs in the US.

As discussed in Section V, there are many potential environmental and economic benefits that may motivate a landfill owner or operate to pursue construction and operation of a bioreactor landfill unit. Due to the significant impact on LFG generation from the addition of liquids, EPA believes that information in its Landfill Methane Outreach Program (LMOP) database may serve as a good predictor for the potential impact of developing a RCRA definition and regulations for bioreactor landfill units or wet landfill units. Of the estimated 1,221 open MSWLFs [34] in the EPA Landfill Methane Outreach Program (LMOP) database, there are approximately 565 MSWLFs that currently provide LFG to one or more or more operational LFG energy projects (LFG electricity projects, LFG direct-use projects, and upgraded LFG projects) for a total of 623 operational LFG projects. The EPA plans to explore whether some of these 565 MSWLFs may be able to achieve better environmental and economic results if EPA were to remove the prohibition on the addition of bulk liquids and define bioreactor landfill units or wet landfill units as a class of facilities that can get standard RCRA Subtitle D permits in approved states.

In addition to those 565 MSWLFs, EPA estimates that there are approximately 470 additional MSWLFs [35] that may be good candidates for development of an LFG energy project. These 470 MSWLFs are those that are currently accepting waste or have been closed for five years or less, have at least one million tons of waste, and do not currently have an operational, under-construction, or planned LFG project. The EPA intends to explore whether some of these 470 MSWLFs may be able to achieve better environmental and economic results if EPA were to remove the prohibition on the addition of bulk liquids and define bioreactor landfill units or wet landfill units as a class of facilities that can get standard RCRA permits in approved states. Some of these 470 facilities may ultimately be candidates for developing bioreactor landfill units upon changes to the RCRA regulations.

In considering the number of facilities that may be affected, it is important to note that the primary intent of this ANPRM is to explore whether regulatory flexibility is warranted for those facilities that want to add liquids for the purpose of accelerating biodegradation in the manner of a bioreactor landfill unit. The EPA believes that bioreactor landfill units may reduce the overall risk to the environment and have significant economic benefits.

IX. Relationship to Organics Diversion and Composting Programs

Apart from any future changes to the MSWLF regulations, EPA is considering how such changes fit into the Agency's broader Sustainable Materials Management (SMM) approach. Sustainable materials management is a systemic approach to using and reusing materials more productively over their entire life cycles. It represents a change in how our society thinks about the use of natural resources and environmental protection. As part of this effort, EPA has developed a non-hazardous materials and waste management hierarchy that recognizes that no single waste management approach is suitable for managing all materials and waste streams in all circumstances. The hierarchy ranks the various management strategies from most to least environmentally preferred. The hierarchy places emphasis on reducing, reusing, and recycling as key to sustainable materials management. Consistent with the hierarchy, EPA supports reducing the landfilling of organic waste through a variety of policies and programs. While not directly under EPA's SMM approach, various state and local initiatives described in this section have also been emerging to divert organics from landfilling operations. As discussed above, effective bioreactor landfill units depend upon the performance of biodegredation processes of organic materials in the unit. As a policy matter, EPA sees the development of appropriately-regulated bioreactor landfill units or wet landfill units as a potential complement to diversion programs, with both reducing the environmental impacts from organics management, albeit under different management scenarios.

The EPA data [36] indicate that organic materials are historically the largest component of materials landfilled in the MSW stream, constituting about 51 percent of landfilled material in 2015. Food waste is the largest component of the organic materials waste stream, followed by paper and paperboard, wood wastes and yard trimmings. Recycling and composting have been increasing over time for organic materials (except rubber and leather). For example, the percentage of paper and paperboard that is recycled has increased from 16.9 percent in 1960 to 66.6 percent in 2015. The amount of composted yard trimmings has increased from a negligible amount in 1960 to 61.3 percent in 2015. Composted food waste has increased less significantly from negligible amounts in 1960 to 5.3 percent in 2015. Information available to EPA further indicates that states and cities with robust recycling and composting programs may realize an even greater percentage of recycling and composting.

Such organic waste diversion programs are in effect in multiple U.S. states and cities. These programs also appear to be growing in number. The EPA expects that as the numbers of households covered by such programs grows, so will the quantities of materials diverted from landfilling operations. A survey conducted by *BioCycle* in fall 2017 [37] identified 198 curbside collection programs and 67 drop-off programs. This represented significant growth compared to 42 communities with curbside collection of food waste

[34] USEPA, Landfill Methane Outreach Program (LMOP) Database. Data from the LMOP Database are current as of September 2018. For information on the LMOP Database including its sources, please see the LMOP website *https://www.epa.gov/lmop.*

[35] USEPA, Landfill Methane Outreach Program (LMOP) Database. Data from the LMOP Database are current as of September 2018. For information on the LMOP Database including its sources, please see the LMOP website *https://www.epa.gov/lmop.*

[36] *www.epa.gov/smm/advancing-sustainable-materials-management-facts-and-figures.*

[37] ''Residential Food Waste Collection Access in the U.S.,'' Virginia Streeter and Brenda Platt, Biocycle, December 2017, Vol. 58, No. 11, p. 20.

in 2007 [38] representing 752,000 households. In addition, numerous communities encourage residents to compost food in their backyards. In some cities, private companies offer food scrap pick-up services for a fee.

Additionally, several states and cities have statutes, ordinances, and/or mandates that require organics diversion from landfills.[39] The EPA expects that these laws will have an effect on the amount of organic waste that would otherwise be available for management in bioreactor landfill units and wet landfill units, at least within the jurisdictions in which the diversion laws apply. As of 2018, four states—Connecticut, Massachusetts, Rhode Island, and Vermont —have adopted bans on organic waste, going to landfills, while one state—California —has instituted a waste recycling law requiring commercial generators of organic waste to either compost or anaerobically digest organic waste. All five of these states prohibit certain entities that generate specified amounts of food waste from sending this waste to landfills, subject to exceptions. Each state's ban varies in how it applies to various entities, how much organic waste an entity must produce in order to be covered, and whether exceptions exist for entities located far from a certified recycling or composting facility that accepts food scraps. For example, as of 2020, Vermont's law will cover anyone, including residents that generate any amount of food waste, while the other states' bans cover only certain commercial, industrial, and institutional entities. City ordinances in New York City and Portland, Oregon, mandate materials separation from commercial generators. Ordinances in Seattle and San Francisco extend the separation mandate to single family dwellings. An ordinance in Austin, Texas requires restaurants of a certain size to compost food scraps.

Other surveys and data also suggest that state- and local-level organics diversion programs are gaining momentum. The EPA's State Measurement Program (Program) estimates that, for 2016, 27 states have reported having 2,666 organics materials management systems, and 11 of those states have systems that include anaerobic digestion. The Program also reports that 21 states have yard waste landfill bans. Finally, Program data indicate that five states have implemented composting goals, including Arkansas, California, Maryland, Massachusetts, and Washington.

The EPA seeks data and information on how organics diversion and composting programs may interact with, complement, or enhance the policy goal of reducing the environmental impact of organics management across management scenarios. In addition, EPA is also interested in obtaining data and information on how such programs may otherwise affect the operation or geographic distribution of bioreactor and wet landfill units.

X. What information is EPA seeking?

A. Information on Benefits and Risks of Bioreactor Landfill Units and Wet Landfill Units

The EPA requests information and data on the benefits and risks to human health and the environment that may result from the addition of bulk liquids and the construction, operation, and post-closure care of bioreactor landfill units and/or wet landfill units. This includes risks that have concerned the EPA in the past such as potential contamination of groundwater from liner leakage; potential contamination of the air from accelerated LFG emissions; the impact of higher temperatures and potential for fire under various landfill conditions; and any other potential risks EPA has not yet identified. (See Section V for a discussion of potential benefits and environmental considerations.) For information about where to submit information and comments on the following questions, please see the ''Addresses'' section at the beginning of this document. In responding to any questions in this document, please identify the question(s) to which you are responding before each response.

B. Questions on Characteristics of Bioreactor Landfill Units and Wet Landfill Units

The EPA requests comments and supporting information on the following questions concerning characteristics that may be used to define the universe of bioreactor landfill units or wet landfill units. (See section VII for additional discussion.)

(1) If EPA should adopt a definition of a new RCRA class of MSWLFs outside of RD&D permits, is the qualitative definition in Section VII, *i.e.,* that a bioreactor landfill unit is defined by the intentional addition of liquids for any purpose other than cleaning, maintenance, and wetting of daily cover, an appropriate to definition? Or is a quantitative definition based on moisture content more appropriate?

(2) If EPA should adopt a quantitative definition of a bioreactor landfill unit based on moisture content, what is the appropriate threshold for moisture content?

(3) Are there factors other than moisture content that should be used to define a bioreactor landfill unit in a quantitative manner?

(4) Should EPA include the use of leachate recirculation, run-on and run-off systems, and alternative cover designs in any new definition of a bioreactor landfill unit or wet landfill unit?

(5) If EPA should determine that it is more appropriate to define and regulate wet landfill units instead of bioreactor landfill units, what factors should be considered in such a definition?

C. Questions on Operations and Post-Closure Care

The EPA requests comments, data and supporting information on appropriate operational requirements associated with the addition of bulk liquids and the construction, operation, and post-closure care of bioreactor landfill units and wet landfill units. (See section VI for additional discussion.)

(1) Are there any additional facilities with RD&D permit applications in the process of state approval, of which EPA is not yet aware (*i.e.,* are not listed in Table 2 above)? If so, please identify them.

(2) What other changes to the part 258 criteria may be warranted if EPA were to regulate bioreactor landfill units or wet landfill units as a subset of MSWLF units? For example, if EPA were to make changes to the existing criteria for liquids restrictions, run-on and run-off control systems, and alternative cover designs for such units, should EPA consider changes to other 258 criteria to complement those changes?

(3) Did state permitting authorities impose any additional groundwater protection or air emission controls in the initial RD&D permits as a pre-condition for allowing the addition of bulk liquids? The EPA is aware that Wisconsin, for example, required LFG collection from the beginning of operations for MSWLFs granted variances to add bulk liquids.

(4) What design and operating changes, if any, should be considered to manage accelerated waste settlement in bioreactor landfill units and minimize waste instability issues?

(5) Should the prospect of increased leachate and accelerated LFG generation require that a Professional Engineer certify that any or all MSWLF components and subsystems (*e.g.,* leachate collection and storage, LFG

[38] ''Source Separated Residential Composting,'' Biocycle, December 2007.

[39] *www.chlpi.org/wp-content/uploads/2013/12/Food-Waste-Toolkit_Oct-2016_smaller.pdf.*

collection and control) be designed properly to handle the increased demands at a bioreactor landfill unit or wet landfill unit?

(6) Are there alternative cover design modifications using RD&D permits or in other settings that have demonstrated the ability to optimize biodegradation?

(7) If the variances contained in the current RD&D rule were to be made allowable outside of RD&D permits (see Section II), what additional performance and prescriptive standards, if any, would be necessary to demonstrate protection of human health and the environment?

D. Questions on Potential Risks

The EPA requests comments, data and other supporting information on the risks to human health and the environment that may result from the addition of bulk liquids and the construction, operation, and post-closure care of bioreactor landfill units and wet landfill units. (See Sections V and VI for additional discussion.)

(1) Are there current scientific studies or other data available pertaining to the impact of moisture content on the frequency and rate of leachate leakage or other types of environmental releases from landfills?

(2) Is there evidence of increased groundwater contamination from bioreactor landfill units as compared to dry-tomb landfill units?

(3) Should EPA remove or modify the bulk liquids restriction in 40 CFR 258.28? For example, should the addition of liquids be limited to off-specification consumable liquids or be open to all non-hazardous liquid waste?

(4) What specific bulk liquids and in what quantity were added at RD&D rule bioreactor landfill units?

(5) Are there restrictions or conditions on liquid waste acceptance that EPA should consider? For example, are there any properties (*e.g.,* pH, ionic strength, biological activity) of specific kinds of liquid waste (*e.g.,* sewage sludge, grey water, animal feedlot waste) that may exacerbate releases from co-managed wastes and should be considered for possible restrictions on liquid waste acceptance? Are there any properties of the residual solids from these liquids that may pose risk when managed at the lower water content within the landfill?

(6) Could increasing the moisture content of the landfill increase the risk of fire through exothermic chemical reactions? Are there specific waste types that are appropriately managed in dry-tomb MSWLFs but could be incompatible with bioreactor landfill units and/or wet landfill units?

(7) How might overall leachate quality be affected by:

a. Management under aerobic, anaerobic, or hybrid conditions?

b. Saturation of waste and/or recirculation of leachate?

(8) At what point should LFG collection and control systems be installed and operating before allowing the addition of liquids in order to minimize odors, reduce fugitive LFG emissions, and prevent accumulation of gasses above the lower explosive limit (LEL)?

(9) When was LFG collection required to be initiated at bioreactor landfill units as specified in the initial RD&D permit that allowed the addition of bulk liquids?

(10) Are there any changes to the part 258 criteria that the EPA should consider to better ensure the protectiveness of bioreactor landfill units and wet landfill units in closure and post-closure?

(11) Are there special types of containment systems or other preventative measures that should be considered to mitigate risk from spills or increased leachate circulation?

E. Questions on Potential Costs, Cost Savings and Benefits

The EPA requests comments, data and supporting information on the following questions related to the potential costs, cost savings and benefits associated with the addition of bulk liquids and the construction, operation, and post-closure care of bioreactor landfill units and/or wet landfill units.

(1) The EPA requests information pertaining to the costs or estimated costs of construction, operation, closure, and post-closure care of bioreactor landfill units and wet landfill units. How do these costs compare with the costs associated with dry-tomb MSWLFs?

(2) How do costs differ for units managed under aerobic, anaerobic, and hybrid conditions? [40]

(3) What are the costs associated with early installation of LFG collection systems?

(4) What are the benefits associated with increased LFG generation and capture?

(5) What are the costs, cost savings and benefits associated with faster settling of waste in bioreactor landfill units and wet landfill units?

(6) How might tipping fees (the charges levied for a given quantity of waste delivered to a landfill) change in response to any additional costs incurred during the operation and closure of bioreactor landfill units and wet landfill units (*e.g.,* updated design criteria, waste handling requirements)?

(7) How does managing organic waste in bioreactor landfill units compare, in terms of the cost, cost savings and benefits, to managing segregated organic wastes through composting or anaerobic digestion?

(8) For MSWLFs in areas with organic waste diversion programs, have owners and operators of such units documented reductions in the proportion of organics received at the unit? Have any such documented reductions been shown to affect the performance or environmental risks associated with bioreactor landfill units?

(9) Are there cost savings associated with the ability to add bulk liquids to bioreactor landfill units as compared to other treatment, storage and disposal methods? Please provide the cost savings or the estimated cost savings associated with the above mentioned methods.

(10) Would changes to part 258 to provide national operating and design criteria for bioreactor landfill units or wet landfill units create an incentive or disincentive to state and local food waste diversion programs?

(11) Are there cost savings associated with the ability to add bulk liquids to bioreactor landfill units as compared to other treatment, storage and disposal methods?

(12) What are the capital costs and operation and maintenance costs associated with operating a bioreactor landfill unit? How do these costs compare to those of landfills that do not have bioreactors landfill units?

(13) In addition to the standard bioreactor landfill unit infrastructure and practices, are there any bundled engineering practices (*e.g.,* complimentary requirements for leachate recirculation, LFG collection, and leak detection) that landfills operating bioreactor landfill units are likely to invest in? What are the additional or complementary benefits or risks of these investments?

(14) Are there any existing bioreactor landfill facilities operating under RD&D permits, that would cease operations due to financial and/or operational difficulties without continued operation as a bioreactor landfill unit?

(15) Has the temporary status of permits under the RD&D rule discouraged any owner/operators from otherwise investing in bioreactor landfill units?

[40] See *https://www.epa.gov/landfills/bioreactor-landfills* for a description of aerobic, anaerobic and hybrid bioreactor landfill units.

XI. Statutory and Executive Order Review

Under Executive Order 12866, entitled *Regulatory Planning and Review* (58 FR 51735, October 4, 1993), this is a ''significant regulatory action'' because it relates to a novel approach to nationwide landfill management. Accordingly, EPA submitted this Advance Notice of Proposed Rulemaking 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 document does not impose or propose any requirements, and instead seeks comments and suggestions for the Agency to consider in possibly developing a subsequent proposed rule, the various other review requirements that apply when an agency imposes requirements do not apply to this action. Nevertheless, as part of your comments on this ANPRM, you may include any comments or information that could help the Agency: To assess the potential impact of a subsequent regulatory action on small entities pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*); to consider voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act (15 U.S.C. 272 note); to consider environmental health or safety effects on children pursuant to Executive Order 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997); to consider human health or environmental effects on minority or low-income populations pursuant to Executive Order 12898, entitled ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations'' (59 FR 7629, February 16, 1994); or to consider potential impacts to state and local governments or tribal governments.

XII. Conclusion

The information available to EPA to date suggests that liquids addition in well-managed bioreactor landfill units and/or wet landfill units may provide reductions in long-term risk and operational costs in comparison to dry-tomb landfills as a result of accelerated waste biodegradation. The EPA continues to gather information on this issue, including the information received in response to this ANPRM. This information will assist EPA in making a determination concerning what actions, if any, to take to revise the MSWLF criteria.

List of Subjects in 40 CFR Part 258

Environmental protection, Reporting and recordkeeping requirements, Waste treatment and disposal, Water pollution control.

Dated: December 14, 2018.

Andrew R. Wheeler,

Acting Administrator.

[FR Doc. 2018–27748 Filed 12–21–18; 8:45 am]

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DEPARTMENT OF DEFENSE

GENERAL SERVICES ADMINISTRATION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

48 CFR Parts 3, 31, and 52

[FAR Case 2017–005; Docket No. 2017–0005, Sequence No. 1]

RIN 9000–AN32

Federal Acquisition Regulation: Whistleblower Protection for Contractor Employees

AGENCY: Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Proposed rule.

SUMMARY: DoD, GSA, and NASA are proposing to amend the Federal Acquisition Regulation (FAR) to implement an act to enhance whistleblower protection for contractor employees. The rule would make permanent the protection for disclosure of certain information. It also would clarify that the prohibition on reimbursement for certain legal costs applies to subcontractors, as well as contractors.

DATES: Interested parties should submit comments to the Regulatory Secretariat Division at one of the addresses shown below on or before February 25, 2019 to be considered in the formulation of a final rule.

ADDRESSES: Submit comments in response to FAR Case 2017–005 by any of the following methods:

- *Regulations.gov: http://www.regulations.gov.* Submit comments via the Federal eRulemaking portal by entering ''FAR Case 2017–005'' under the heading ''Enter Keyword or ID'' and selecting ''Search.'' Select the link ''Comment Now'' that corresponds with ''FAR Case 2017–005.'' Follow the instructions provided on the screen. Please include your name, company name (if any), and ''FAR Case 2017–005'' on your attached document.
- *Mail:* General Services Administration, Regulatory-Secretariat Division (MVCB), ATTN: Lois Mandell, 1800 F Street NW, 2nd Floor, Washington, DC 20405.

Instructions: Please submit comments only and cite ''FAR case 2017–005'' in all correspondence related to this case. All comments received will be posted without change to *http://www.regulations.gov,* including any personal and/or business confidential information provided. To confirm receipt of your comment(s), please check *www.regulations.gov,* approximately two to three days after submission to verify posting (except allow 30 days for posting of comments submitted by mail).

FOR FURTHER INFORMATION CONTACT: For clarification of content, contact Ms. Cecelia L. Davis, Procurement Analyst, at 202–219–0202. For information pertaining to status or publication schedules, contact the Regulatory Secretariat Division at 202–501–4755. Please cite ''FAR Case 2017–005.''

SUPPLEMENTARY INFORMATION:

I. Background

DoD, GSA, and NASA are proposing to amend the FAR to implement an act to enhance whistleblower protection for contractor and grantee employees (Pub. L. 114–261), enacted December 14, 2016. Although the statute addresses both contractor and grantee employees, the FAR only covers contracts and contractors. Grants are covered in title 2 of the Code of Federal Regulations.

This statute amends 41 U.S.C. 4712 to make permanent the pilot program for enhancement of contractor protection from reprisal for sharing certain information. The four-year pilot program was enacted on January 2, 2013, by section 828 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2013 (Pub. L. 112–239), with an effective period of four years from the date of enactment (*i.e.,* January 2, 2013, through January 1, 2017). Section 1091(e) of the NDAA for FY 2014 (Pub. L. 113–66) modified the effective period of the pilot program to be four years from the date that is 180 days after the date of enactment (*i.e.,* July 1, 2013, through June 30, 2017). However, the program did not expire as it became permanent on December 14, 2016, before either of those expiration dates. This program does not apply to DoD, NASA, or the Coast Guard.

This statute also clarifies that the cost principles at 10 U.S.C. 2324(k) and 41