

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Parts 403 and 503**

[FRL-5315-6]

RIN 2040-AC29

**Standards for the Use or Disposal of Sewage Sludge**

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

**ACTION:** Proposed rule.

**SUMMARY:** On November 25, 1992, pursuant to Section 405 of the Clean Water Act (CWA), EPA promulgated the Standards for the Use or Disposal of Sewage Sludge (40 CFR parts 257, 403 and 503). In addition, EPA amended the General Pretreatment Regulations (40 CFR part 403) to establish a list of pollutants for which a removal credit may be available. Today's action proposes additional amendments to both regulations to clarify existing regulatory requirements and provide increased flexibility to the permitting authority and the regulated community in complying with some requirements.

The proposed amendments to part 503 would modify various land application, surface disposal, pathogen and vector attraction reduction, and incineration provisions. Most importantly, the proposed rule would delete the requirement for EPA or the State to issue sludge permits and would allow the regulated community flexibility to determine how to meet the sewage sludge incinerator requirements using existing Agency guidance. EPA is also proposing to amend part 403 to add a concentration limit for chromium in the list of unregulated pollutants eligible for a removal credit. Some of the changes EPA is proposing today will lessen the regulatory burden on States, local government, Tribes, and the regulated community.

When EPA promulgated the Sewage Sludge Regulation in 1992, EPA asked for public comment on several issues. Today's notice also responds to those comments.

**DATES:** Comments must be received by December 26, 1995.

**ADDRESSES:** Send written comments to Comment Clerk; Proposed Amendments to the Final Sewage Sludge Regulation; Water Docket MC-4101; Environmental Protection Agency; 401 M Street, SW; Washington, DC 20460. Respondents are requested to submit an original and three copies of their written comments. Respondents who want receipt of their comments acknowledged should include a self-addressed, stamped

envelope. All submissions must be postmarked or delivered by hand, no facsimiles (faxes) will be accepted.

A copy of the final part 503 rule and comments received on the final rule are available for review at EPA's Water Docket; 401 M Street, SW; Washington, DC 20460. Other references cited in the preamble also are available for review in the Docket. The Docket is located in room L-102. For access to Docket materials, call (202) 260-3027 between 9 a.m. and 3:30 p.m. for an appointment. The EPA public information regulation (40 CFR Part 2) provides that a reasonable fee may be charged for copying.

**FOR FURTHER INFORMATION CONTACT:** Robert M. Southworth, Biosolids Manager, Health and Ecological Criteria Division (4304), Office of Science and Technology, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, telephone (202) 260-7157.

**SUPPLEMENTARY INFORMATION:**

- I. Background
  - A. Sewage Sludge Management Program
  - B. Revisions to the Part 503 Sewage Sludge Rule
- II. Response to Comments on Final Sewage Sludge Rule
  - A. Field Monitoring Study
  - B. Pollutant Limits for Cadmium
  - C. Percent of the MCL for the Ground-Water Pathway
- III. Proposed Amendments to Land Application, Surface Disposal, and Pathogens and Vector Attraction Reduction Subparts
  - A. Ceiling Concentration Limits—Land Application
  - B. Frequency of Monitoring
  - C. Certification Language
  - D. Time of Application
  - E. Definition of pH
  - F. Class B, Alternative 1—at the Time of Use or Disposal
  - G. Class B Site Restriction For Grazing of Animals
  - H. Vector Attraction Reduction Equivalency
    - I. Vector Attraction Reduction at the Time of Use or Disposal
    - J. Technical Corrections
      1. § 503.16(a)(1) and § 503.26(a)(1)—Frequency of Monitoring
      2. § 503.17(b)(7)—Recordkeeping for Land Application of Domestic Septage
      3. § 503.18—Reporting
      4. § 503.22(b)—General requirements
      5. § 503.32(a)(3)—Pathogens
      6. Appendix B to Part 503—Pathogen Treatment Processes
- IV. Proposed Amendments to the Incinerator Subpart
  - A. Introduction
  - B. Description of Current Regulation and Proposed Amendments
    1. Site-Specific Exemption from Frequency of Monitoring, Recordkeeping, and Reporting Requirements for Pollutants in Incineration Subpart

- a. Current Regulation
- b. Proposed Amendment
2. Pollutant Limits for Arsenic, Cadmium, Chromium, Lead and Nickel
  - a. Current Regulation
  - b. Proposed Amendment
3. Management Practices
  - a. Current Regulation
  - i. Specification for Instruments
  - ii. Specification of Maximum Combustion Temperature
  - iii. Specification of Air Pollution Control Device Operating Parameters
  - b. Proposed Amendment
4. Monitoring Frequencies
  - a. Current Regulation
  - i. Beryllium, Mercury, and Operating Parameters for Air Pollution Control Devices
    - ii. Total Hydrocarbons, Oxygen Concentration, and Moisture Content
  - b. Proposed Amendment
5. Recordkeeping and Reporting Obligations
6. Compliance Deadlines
  - a. Current Regulation
  - b. Proposed Amendment
- V. Proposed Amendment to Part 403
- VI. Regulatory Requirements
  - A. Executive Order 12866
  - B. Executive Order 12875
  - C. Regulatory Flexibility Act
  - D. Paperwork Reduction Act
  - E. Unfunded Mandates

**I. Background**

On November 25, 1992, the U.S. Environmental Protection Agency promulgated, pursuant to section 405 of the Clean Water Act, Standards for the Use or Disposal of Sewage Sludge (58 FR 9248, February 19, 1993). This regulation establishes requirements to protect public health and the environment when: (1) The sewage sludge is applied to the land either to condition the soil or to fertilize crops grown in the soil; (2) the sewage sludge is disposed on land by placing it in a surface disposal site; (3) the sewage sludge is placed in a municipal solid waste landfill unit; or (4) the sewage sludge is incinerated.

Section 405(f) of the Clean Water Act (CWA) provides that any CWA discharge (section 402) permit issued to a publicly owned treatment works (POTW) or other treatment works treating domestic sewage (TWTDS) must include conditions to implement the sewage sludge regulation issued under section 405(d) unless these conditions are included in other permits. The other permits may either be other Federal permits or a State permit issued under an approved State program.

In 1989, EPA published regulations that establish State sewage sludge management program requirements and procedures for approving State National Pollutant Discharge Elimination System (NPDES) (40 CFR part 123) and non-

NPDES sewage sludge programs (40 CFR part 501), and that revised the NPDES permit requirements and procedures (parts 122-124) to incorporate sewage sludge permitting requirements. (See 54 FR 18716 (May 2, 1989); 59 FR 9404 (February 19, 1993).) State assumption of the sewage sludge program is optional. EPA is working with a number of States seeking authorization for the Federal sewage sludge permit and management program, but has not yet authorized any State sewage sludge program. Until State sewage sludge programs are authorized, EPA will administer the program.

EPA is including conditions to implement its sewage sludge regulation in EPA-issued NPDES permits as these permits are reissued. In all other cases, EPA plans to issue permits to TWTDS over time, and has established phased application submittal procedures for the NPDES and non-NPDES programs to support this approach. See 40 CFR 122.21 and 501.15. (For a detailed discussion of EPA's plans for staged permitting of sewage sludge generators, users, and disposers, see 58 FR at 9249-50 and 9357-66, February 19, 1993.)

In addition to today's proposal, EPA plans several related actions in the near term to address sewage sludge issues. These actions include changes in the sewage sludge management program and further revisions to the part 503 rule. These actions are briefly discussed below.

#### A. Sewage Sludge Management Program

As part of its effort to reinvent its permit program, EPA is in the process of reviewing its sewage sludge management program. The Agency is looking at how to tailor the program more efficiently to reduce the burden to the regulated community of complying with Federal sewage sludge management program requirements. With this objective in mind, EPA is exploring a number of options with stakeholders. Given the wide (and successful) regulation of sewage sludge use or disposal by a number of States, EPA is reviewing its State sewage sludge program authorization regulations to simplify the approval process. In addition, the Agency will try to accelerate approval of State programs through the use of partial program approvals (i.e., approval may be granted by use or disposal practice). EPA will place greater emphasis on building a State/Federal partnership rather than on an EPA-directed permitting effort while maintaining its goal of protecting public health and the environment.

As noted, EPA will be taking a look at its State program approval regulations

with an eye to streamlining the approval process. The Agency recognizes that State sewage sludge programs may vary from State to State depending on local conditions. EPA will be exploring how to provide greater flexibility to States to accommodate States' choices about the structuring of their regulatory programs and efficient use of available local resources where appropriate. To accomplish its objective to provide greater flexibility to the States, EPA will consider modifications to its sewage sludge permit program regulations so as to accommodate more variations in State programs. EPA stresses that its willingness to allow greater variation in the State permit programs does not mean that the Agency will retreat from public health and environmental protection. EPA's policy on authorizing State permit programs for sewage sludge will still reflect the need for certain minimum requirements. These include requirements for adequate State authority to enforce against violators of the sewage sludge regulation. In addition, States, as is now the case, must provide for citizen participation in both the sewage sludge permitting and enforcement efforts.

#### B. Revisions to the Part 503 Sewage Sludge Rule

EPA also is considering whether it needs to provide more flexibility in the technical standards. A number of parties have suggested to the Agency that part 503 should include a provision that would relieve a sewage sludge user or disposer from certain regulatory requirements in defined circumstances. EPA is now considering what specific conditions would warrant relief from regulatory requirements. Further, in addition to its effort to provide more flexibility in the technical regulation, EPA is reviewing the regulation in response to judicial challenges. On November 15, 1994, the United States Court of Appeals for the District of Columbia Circuit issued its decision in *Leather Industries of America, Inc., et al. v. EPA*, No. 93-1187. In this decision, the court addressed several of the petitions for review of the sewage sludge regulation. The D.C. Circuit remanded several aspects of the regulation to the Agency for modification or additional justification. Concurrent with today's proposal, the Agency is taking final action on the remanded pollutant limits for chromium and selenium in sewage sludge that is land-applied. Moreover, the Agency will address other litigation issues in a future Federal Register notice to be published in early 1996.

The part 503 regulation promulgated in November, 1992, partially fulfilled the Agency's commitment under the terms of a consent decree that settled a citizens suit to compel issuance of sewage sludge regulations. *Gearhart, et al. v. Reilly*, Civil No. 89-6266-JO (D.Ore). Under the terms of that decree, EPA must propose and take final action on a second round of sewage sludge regulations by December 15, 2001. EPA has already begun the process of evaluating a number of pollutants for potential adverse effects to public health and the environment when present in sewage sludge. In May, 1993, pursuant to the terms of the consent decree in the *Gearhart* case, the Agency notified the United States District Court for the District of Oregon that, based on the information then available, EPA would evaluate 31 pollutants for possible regulation. The consent decree also stipulates that EPA will file with the court a revised list of pollutants for regulation by November, 1995. In the event that EPA determines not to regulate some or all of these pollutants, EPA will make available the rationale for not regulating those pollutants.

#### II. Response to Comments on Final Sewage Sludge Rule

In developing the numerical pollutant limits for sewage sludge when used or disposed, EPA evaluated the risk of these pollutants through exposure assessments. In the preamble to the final part 503 regulation, EPA requested public comment on three issues related to these risk assessments.

##### A. Field Monitoring Study

For its risk assessments, EPA relied on available scientific information to evaluate risk to public health and the environment. In the case of the Agency's evaluation of ecological risks, the data were limited. In the final rule, EPA explained that it would continue to assess the adverse potential of sewage sludge, particularly with respect to ecosystem risks. EPA stated its intention to conduct an environmental evaluation and monitoring study to aid the Agency in its efforts to develop a comprehensive ecological risk assessment methodology (see 58 FR 9275, February 19, 1993).

At the present time, EPA's Office of Research and Development is funding a number of initiatives in these areas. Under a grant from EPA, the Oak Ridge National Laboratory has begun work on an ecological risk study as part of a field project evaluating sewage sludge land application. In addition, the Ecosystems Research Division (Athens, Georgia) in EPA's National Exposure Research Laboratory has started work to test the

hypothesis that sewage sludge binds metals in an organic matrix, which reduces their bioavailability. The Ecosystems Research Division also will validate the ground-water model used to develop the pollutant limits for the ground-water exposure pathway for land application and surface disposal. Further, the Western Ecology Division (Corvallis, Oregon) in EPA's National Health and Environmental Effects Research Laboratory is examining issues concerning evaluation of phytotoxic risk. This will include a review of appropriate measures of phytotoxicity and studies concerning plant uptake of metals.

EPA received a single comment on the proposed field study for evaluation of ecological effects. The commenter stressed that it is critical that realistic exposure scenarios be used. The Agency agrees with that comment. EPA is currently working with the Oak Ridge National Laboratory to define the environmental end points of concerns and reasonable exposure assumptions for the ecological risk study.

#### *B. Pollutant Limits for Cadmium*

The Agency received a number of public comments on the final cadmium pollutant limits for land application. Some comments were supportive of the final limits for this pollutant. However, a few commenters expressed some concerns. These concerns fell into two general categories: (1) The United States Department of Agriculture (USDA) expressed concern that the final cadmium limits may jeopardize the export of grains to foreign markets, and (2) other commenters expressed concern that the risk-based cadmium limits may not be protective enough. In arguing for lower cadmium limits, commenters indicated that the limiting exposure pathway, the exposure assumptions, and the analysis methods used in the risk assessment should be reevaluated.

With respect to the first issue, EPA believes that the current cadmium pollutant concentration limit of 39 mg Cd/kg sewage sludge generally should not be a concern for the export of most grains. However, because it is possible that some local conditions may cause cadmium levels to exceed European commodity tolerance levels for grain crops, EPA and USDA have agreed to develop a joint advisory statement for farmers who may export grain to the European markets. The advisory would recommend lower cadmium limits for cropland that may be used to produce crops for exports.

As requested by some commenters, the Agency has reevaluated the cadmium risk assessment and has

concluded that its risk assessment approach for cadmium is conservative and defensible. EPA has thoroughly responded to these comments in the record for today's rulemaking. EPA continues to believe that the present cadmium pollutant limits are sufficiently protective of highly exposed individuals. There may be circumstances where site-specific conditions would suggest that a more stringent pollutant limit may be more appropriate. However, EPA's regulatory policy is to use conservative assumptions that will protect highly exposed individuals. This approach ensures protection against reasonably anticipated risks, not the risk associated with highly unlikely or unusual circumstances. The selection of data, assumptions, and analysis methods used in developing the land application cadmium pollutant limits are consistent with this policy. After further review, EPA concluded that the data and methods used in the risk assessment reflect actual growing conditions found throughout the United States.

As the Agency previously determined, the land application cadmium pollutant limit adopted for the final rule adequately protects public health and the environment. EPA has not received any new information since publication of the final rule that would indicate that a change in the current cadmium pollutant limit is warranted. Therefore, the current land application ceiling concentration limit of 85 mg/kg, the current cumulative pollutant loading rate of 39 kg/ha, the current pollutant concentration limit of 39 mg/kg, and the current annual pollutant loading rate of 1.9 kg/ha/365 day period remain in effect.

For additional discussion of the specific risk assessment issues and EPA's rationale for the final land application cadmium pollutant limits, EPA refers readers to the Response to Comments Document available in the docket for this proposed rulemaking.

#### *C. Percent of the MCL for the Ground-Water Pathway*

In the final rule, EPA asked for comment on whether, in its exposure assessments, a percentage of the end point to be protected (i.e., a Maximum Contaminant Level (MCL)) should be used to develop the allowable concentration of pollutants in sewage sludge for the ground-water pathway in both the land application and surface disposal risk assessments. EPA did not receive any public comments on this issue and is not, therefore, proposing any corresponding change to the regulation.

III. Proposed Amendments to Land Application, Surface Disposal, and Pathogens and Vector Attraction Reduction Subparts

#### *A. Ceiling Concentration Limits—Land Application*

Today's notice would amend the applicability section of the land application requirements to clarify that the ceiling concentration limits apply to all sewage sludge that is land-applied. While § 503.13(a)(1) requires that all land-applied sewage sludge must meet the ceiling concentration limits in Table 1 of § 503.13, the current language in § 503.10 (b)(1), (c)(1), (d), (e), (f), and (g) does not expressly require meeting the ceiling concentration limits. The proposed amendment would remove any ambiguity about the obligation to comply with ceiling concentration limits for land-applied sewage sludge.

#### *B. Frequency of Monitoring*

Sections 503.16, 503.26, and 503.46 of the current sewage sludge regulation require that sewage sludge be monitored for certain pollutants. How frequently sewage sludge must be monitored varies with the amount of sewage sludge that is used or disposed. The regulation allows the permitting authority to reduce the monitoring frequency after the sewage sludge has been monitored for two years. In no case, however, under the present requirements, may the permitting authority authorize monitoring less frequently than once per year for each use or disposal practice.

Today's notice would amend § 503.16, § 503.26, and § 503.46 to delete the language requiring monitoring of sewage sludge at least once per year. This amendment would provide additional flexibility to the permitting authority to reduce the frequency of monitoring for sewage sludge to less than once per year.

#### *C. Certification Language*

Sections 503.17 and 503.27 of the current sewage sludge regulation require sewage sludge preparers, land appliers, and the owner/operator of a surface disposal site to keep certain records, and in the case of Class I sludge management facilities and certain POTWs, to report this information to the permitting authority. The regulation also requires the recordkeepers to certify to compliance with all applicable requirements. Failure to certify may result in significant penalties.

The effect of this requirement may be to discourage self-reporting of violations. If monitoring measurements indicate that applicable sewage sludge requirements are *not* being met, a

recordkeeper obviously cannot certify to compliance without perjury. This puts the recordkeeper in the position of either committing perjury or failing to make the certifications. In either event, the recordkeeper risks significant penalties.

EPA is proposing to amend the language for the certification statements in § 503.17 and § 503.27. Under today's proposal, the recordkeeper would be required to certify only to the accuracy of the information that will be used to determine compliance with a part 503 requirement and its preparation under the certifier's supervision rather than to compliance with applicable part 503 requirement.

#### D. Time of Application

Sections 503.17 (a)(5)(ii)(C) and (b)(3) of the current regulation require the applier of sewage sludge subject to cumulative pollutant loading rates and the applier of domestic septage to agricultural land, forest, or a reclamation site, respectively, to record the time of application as well as supply certain other information needed to track the amount of regulated pollutants and the volume of domestic septage applied to a site. (See § 503.17(a)(5)(ii)(D) and (E); § 503.17(b)(5), which require recordkeeping on the cumulative amount of each pollutant applied at the site, the amount of sewage sludge applied, and the rate at which domestic septage is applied.) The information on cumulative amounts of pollutants applied is needed so that subsequent land appliers may determine whether additional amounts of sewage sludge can be applied at a site without exceeding the cumulative pollutant loading rate for any pollutant.

Questions have been raised about the meaning of the time of application requirement as well as the need for this information. After reviewing this issue, EPA has concluded that information on the time of application is not needed to track the amount of the part 503 pollutants applied to a site in bulk sewage sludge or the volume of domestic septage applied to the land. EPA has determined that, with information identifying the site at which the sewage sludge has been applied, the total cumulative load of metals at the site and the quantity of sewage sludge, subsequent sewage sludge appliers will have all the information needed to comply with the land application cumulative pollutant loading rates. The time of application also is not needed when domestic septage is applied to agricultural land, forest, or a reclamation site. For this reason, today's

proposal deletes the requirement to record the time of application.

Today's proposal does not delete the requirement to record the date that sewage sludge or domestic septage is applied to site. The date is needed to know when the site restrictions for Class B sewage sludge begin and when they end. The date of application also is needed to determine when site restrictions begin and end when domestic septage is applied to agricultural land, forest, and reclamation sites.

EPA also is proposing today to amend section 503.17(a)(4)(ii) to add the requirement that the date of application be kept. This is needed because in this recordkeeping scenario, the sewage sludge is Class B with respect to pathogens. When a Class B sewage sludge is land applied, the date the site restrictions begin and end has to be known. Adding the requirement to record the date of application will provide the information needed to know when the site restrictions begin.

#### E. Definition of pH

EPA is proposing to clarify the definition of pH in § 503.31 in response to a recommendation received from the National Lime Association (NLA). The NLA recommended that EPA clarify the definition of pH to indicate that the pH is expressed at 25° C, the reference temperature for reporting pH values in the scientific literature.

The pH is very sensitive to temperature, especially at pHs of 12 and above. Certain of the pathogen alternatives and vector attraction reduction options call for raising the pH of sewage sludge or domestic septage to 12 or higher by alkali addition. Concern has been expressed that the pH readings taken after the addition of alkali will be high for temperatures below 25° C and low for temperatures above 25° C (i.e., there is an inverse relationship between temperature and pH). See discussion in 58 FR 46052, August 31, 1993.

Based on the above, the Agency has concluded that the pH of the sewage sludge or domestic septage must be measured at 25° C or, if measured at a different temperature, must be converted to an equivalent value at 25° C. See Smith and Farrell, which provides the following equation:

$$\text{pH correction} = 0.03 \text{ pH units}/1.0^\circ \text{ C} \times (\text{Temp}^\circ \text{ C}_{\text{meas}} - 25^\circ \text{ C}).$$

EPA is proposing to amend the regulation accordingly.

#### F. Class B, Alternative 1—at the Time of Use or Disposal

EPA has concluded that the requirement in Class B, Alternative 1 does not have to be met at the time sewage sludge is used or disposed. This alternative, which requires that the fecal coliform density in the sewage sludge be less than either 2,000,000 Most Probable Number per gram of total solids or 2,000,000 Colony Forming Units per gram of total solids, can be met any time before the sewage sludge is used or disposed. The site restrictions that have to be met when a Class B sewage sludge is land applied and the surface disposal management practices provide the environment time to reduce remaining pathogens in a Class B sewage sludge to below detectable levels. This proposed change makes Class B, Alternative 1 consistent with Class B, Alternatives 2 and 3.

#### G. Class B Site Restriction for Grazing of Animals

When sewage sludge is used or disposed at a site, the current rule (§ 503.32(b)(5)(v) and § 503.24(l)) prohibits grazing of animals at the site in certain circumstances. Controlling access to limit the exposure of all animals is difficult, if not impossible, to implement. EPA is accordingly proposing to amend the text of § 503.32(b)(5)(v) to remove ambiguity in the language. The Agency's intention is to prohibit intentional, not inadvertent, grazing of animals.

Note, however, that the land application site restriction and surface disposal management practices that restrict public access may prevent access to the site for many types of animals depending on how public access is restricted (e.g., by a fence).

#### H. Vector Attraction Reduction Equivalency

Sewage sludge has a number of characteristics that may attract disease-spreading agents like birds, flies and rats. Consequently, the regulation includes requirements to reduce the potential for attracting these disease-spreading agents—so-called "vector attraction reduction" requirements. The rule provides a number of options for achieving the required vector attraction reduction.

The Agency has received requests for additional flexibility in meeting these requirements similar to that provided in the current regulation for Class A and Class B pathogen reduction requirements. Processes other than those prescribed in the regulation may be used to reduce pathogens if the

permitting authority determines they are equivalent to a Process to Further Reduce Pathogens (PFRP) or a Process to Significantly Reduce Pathogens (PSRP). See 58 FR 9400, February 19, 1993.

Under the current system, the permitting authority must decide whether a pathogen reduction process is equivalent. Often, the permitting authority requests assistance in making this decision from EPA's Pathogen Equivalency Committee (PEC). The PEC, which consists of representatives from EPA's Office of Research and Development and from EPA's Office of Water, provides technical assistance on pathogen issues and makes recommendations on equivalency determinations. The PEC only makes *recommendations* on pathogen equivalency determinations. Thus, the final decision rests with the permitting authority.

EPA is proposing in today's notice to amend § 503.15(c), § 503.25(b) and § 503.33(a) so as to allow the same flexibility with respect to the vector attraction reduction options that require treatment of the sewage sludge. EPA is not proposing to authorize an equivalency determination for the barrier vector attraction reduction options (i.e., Options 9 and 10 for land application and Options 9, 10 and 11 for surface disposal) because EPA is unaware of any barrier options other than those already provided in part 503. Commenters should submit any information they may have about other options. As with equivalency for pathogen reduction, the final decision on vector attraction reduction equivalency will be the responsibility of the permitting authority. EPA's PEC may assist the permitting authority in making vector attraction reduction equivalency determinations.

#### *I. Vector Attraction Reduction at the Time of Use or Disposal*

Under the current regulation, the vector attraction reduction options that require treatment of the sewage sludge (i.e., Options 1 through 8) may be met any time before the sewage sludge is used or disposed. Options 9, 10, and 11 must be met at the time the sewage sludge is used or disposed. EPA has reviewed these options and concluded that certain modifications may be needed to protect public health and the environment and to introduce additional flexibility.

When any of the first five options is employed, the sewage sludge does not become more attractive to vectors if it is stored before it is used or disposed. Thus, Options 1 through 5 may appropriately be met any time before the

sewage sludge is used or disposed. However, EPA has concluded that this may not be true in the case of Options 6, 7, and 8.

Vector attraction reduction achieved by pH adjustment (i.e., Option 6) is not permanent. Adjusting the pH of the sewage sludge to 12 does not change the characteristics of the sewage sludge significantly, but instead causes stasis in biological activity. If the pH should drop, the surviving bacterial spores could become active and the sewage sludge could putrefy and attract vectors. The target pH conditions in Option 6 allow the sewage sludge to be stored for several days before it is used or disposed without the pH dropping.

If quicklime or slaked lime is used to adjust the pH, the pH is not expected to fall below 12 for up to 25 days after the addition of the lime. If a different alkali (e.g., cement kiln dust or wood ash) is used to adjust the pH, the period before which the pH drops may be different because other alkali materials are more soluble than lime. Thus, less undissolved material is available to maintain the pH as it starts to drop.

Because the pH of the sewage sludge could drop after the target conditions in Option 6 are reached, the Agency is proposing in today's rulemaking to require that vector attraction reduction Option 6 must be met at the time the sewage sludge is used or disposed.

Two approaches could be used to meet this proposed requirement. First, the target pH conditions could be met at any time. Just prior to use or disposal (e.g., within one or two days), the pH of the sewage sludge could be checked. If the pH of a representative sample of the sewage sludge is 11.5 or above, vector attraction reduction is achieved. If the pH is below 11.5, the pH has to be adjusted again to reach the target conditions in Option 6 or another vector attraction reduction option (e.g., incorporation) has to be met. The other approach is to meet the target conditions in Option 6 at the time of use or disposal. For example, the pH could be adjusted two days prior to when the sewage sludge is used or disposed and the target conditions could be met during those two days.

Vector attraction reduction Options 7 and 8 require that the percent solids in the sewage sludge be above a certain value. If the percent solids drops (i.e., moisture content increases), vectors could be attracted to the sewage sludge. Thus, today's proposal also would require that vector attraction reduction Options 7 and 8 be met at the time the sewage sludge is used or disposed.

Vector attraction reduction Option 10 requires incorporation of sewage sludge

into the soil within six hours after it is land applied or surfaced disposed. This reduces the attraction of vectors to the sewage sludge by placing a barrier between the sewage sludge and the vectors. In some cases, it may not be feasible to incorporate the sewage sludge into the soil within six hours after it is land applied or surface disposed. Today's proposal would allow the permitting authority the flexibility to address those cases on a site-specific basis.

Today's proposal would amend § 503.33 (b)(6), (b)(7), and (b)(8) by adding language making it clear that these requirements must be met at a defined time rather than any time before the sewage sludge is used or disposed.

The proposal also would amend § 503.33(b)(10)(i) to add language to authorize the permitting authority to specify a different time period during which sewage sludge has to be incorporated into the soil after it is land applied or surface disposed. This would allow the permitting authority to consider site-specific conditions (e.g., the remoteness of a land application site) that may affect the time period during which sewage sludge can be incorporated into the soil.

#### *J. Technical Corrections*

Today's proposal also contains several technical corrections. The following proposed amendments are minor in nature and provide clarification on some of the technical requirements of the final part 503 regulation.

##### *1. § 503.16(a)(1) and § 503.26(a)(1)—Frequency of Monitoring*

Sections 503.16(a)(1) and 503.26(a)(1) contain the requirement for monitoring for pollutants, pathogen densities, and vector attraction reduction. Those sections incorrectly indicate there are pathogen density requirements in § 503.32 (b)(3) and (b)(4). Today's notice deletes the reference to § 503.32 (b)(3) and (b)(4) from § 503.16(a)(1) and § 503.26(a)(1).

Sections 503.16(a)(1) and 503.26(a)(1) also incorrectly indicate that the frequency of monitoring requirements apply to vector attraction reduction Option 5 in § 503.33(b)(5). Today's notice deletes the reference to vector attraction reduction Option 5 from § 503.16(a)(1) and § 503.26(a)(1).

##### *2. § 503.17(b)(7)—Recordkeeping for Land Application of Domestic Septage*

Today's notice amends § 503.17(b)(7) by changing an incorrect reference.

### 3. § 503.18—Reporting

Today's notice corrects the omission of a reporting date in the current rule by inserting February 19th in § 503.18(a)(2).

### 4. § 503.22(b)—General Requirements

Today's notice amends § 503.22(b) correcting the statutory reference and by inserting the appropriate date.

### 5. § 503.32(a)(3)—Pathogens

Today's notice amends § 503.32(a)(3) to clarify that this option excludes composting. Class A, Alternative 1 was designed for thermal processes such as anaerobic digestion and does not apply to composting.

### 6. Appendix B to Part 503—Pathogen Treatment Processes

The description of Process to Further Reduce Pathogens (PFRP) No. 6 (Gamma ray irradiation) is corrected to insert the phrase "at dosages of at least 1.0 megarad at room temperature (ca. 20° C)" that was inadvertently omitted.

## IV. Proposed Amendments to the Incineration Subpart

### A. Introduction

A sewage sludge incinerator is a treatment works treating domestic sewage as defined in 40 CFR 122.2 and 501.2. In most cases, the treatment works generating the sewage sludge operates the sewage sludge incinerator so that a permit issued to the generating treatment works will contain the part 503 requirements applicable to its incinerator.

Subpart E of part 503, 40 CFR 503.40–503.48, establishes the technical requirements for the incineration of sewage sludge. Under section 405 of the CWA, EPA must establish adequately protective pollutant limits for the use or disposal of sewage sludge. However, where numerical pollutant limits are not feasible, EPA may adopt design or operational standards. EPA has done both for incinerated sewage sludge. EPA established pollutant limits that restrict the level of certain pollutants in the sewage sludge to ensure that pollutants in emissions from a sewage sludge incinerator will not exceed safe levels. In the case of organic pollutants, EPA established an operational standard for total hydrocarbons (THC) in the emissions rather than limits on organic pollutants in the sewage sludge fed to the incinerator.

Subpart E establishes these requirements for the firing of sewage sludge: (1) A general requirement in § 503.42, (2) compliance with the National Emission Standards for

Hazardous Air Pollutants (NESHAPs) for beryllium and mercury (§ 503.43); (3) sewage sludge pollutant limits for lead, arsenic, cadmium, chromium and nickel (§ 503.43); (4) an operational standard for total hydrocarbons (THC) in the stack emissions (§ 503.44); (5) management practices (§ 503.45); and (6) frequency of monitoring, recordkeeping, and reporting requirements (§ 503.46–503.48).

Under the regulation, as discussed in more detail below, site-specific variables are used to determine the specific requirements for an individual sewage sludge incinerator. These variables include the type of incinerator, type of air pollution control device(s) (APCD), incinerator combustion temperature, dispersion factor, incinerator control efficiency, and incinerator stack height. Thus, for example, allowable pollutant concentrations in the sewage sludge will vary depending on dispersion of the emissions from the incinerator stack. This, in turn, is a function of meteorological conditions around the incinerator site as well as the height of the incinerator exit gas stack.

Under current 40 CFR 503.43, the pollutant limits for all sewage sludge incinerators depend on actual site-specific conditions rather than default values or standard factors that necessarily overgeneralize sewage sludge incinerator site conditions. Thus, the regulation provides flexibility to tailor pollutant limits for individual sewage sludge incinerators based on actual conditions at the incinerator. (For example, the allowable lead concentration in incinerated sewage sludge depends on a dispersion factor. However, the dispersion factor must be determined from an air dispersion model which in turn requires site-specific data.) As a result, while the current regulation describes what the standard is and how it is determined, the actual requirements are not detailed in the regulation. Instead, the regulation calls for determination of site-specific factors in accordance with instructions from the permitting authority (e.g., section 503.43(a)(2)(i), "when \* \* \* specified by the permitting authority \* \* \*").

The current regulation also requires continuous emission monitoring of certain incinerator operating conditions to ensure compliance with the part 503 requirements. Again, the sewage sludge incinerator requirements in current 40 CFR 503.45 call for the permitting authority to "specify" the criteria for installation, calibration, operation, and maintenance of the instruments used to measure and record these conditions

(e.g., combustion temperature). Other current management practices require the permitting authority to "specify" maximum combustion temperature and values for the operating parameters for the sewage sludge incinerator air pollution control device(s), which also may vary from sewage sludge incinerator to sewage sludge incinerator. Finally, current subpart E requires the permitting authority to specify the frequency of monitoring for beryllium and mercury and for the operating parameters for the air pollution control devices.

In summary, the subpart E part 503 requirements provide for consideration of site-specific factors by directing the permitting authority to specify parameters required to determine applicable requirements. The result of this site-by-site tailoring of incinerator requirements is that the determination of an individual incinerator's applicable requirements are deferred until the permitting authority's decision. Put another way, the regulation already contains a provision requiring that incinerators meet the specific requirements, but until the permitting authority specifies the underlying site-specific factors for the individual sewage sludge incinerator, compliance or non-compliance with the requirements cannot be determined. This approach is different from the other sewage sludge use or disposal requirements in part 503, which are designed to be self-implementing.

### B. Description of Current Regulation and Proposed Amendments

#### 1. Site-specific Exemption From Frequency of Monitoring, Recordkeeping, and Reporting Requirements in Incineration Subpart a. Current Regulation

Section 503.43 establishes pollutant limits for metals in sewage sludge that is incinerated. As discussed further below, these pollutant limits vary for each incinerator based on site-specific factors (e.g., location, control efficiency).

Since publication of the part 503 regulation, EPA has reviewed information on the pollutant limits, determined as prescribed in § 503.43, for a number of different sewage sludge incinerators. In many cases, the pollutant limits are considerably higher—often several orders of magnitude—than the actual concentration of metals in the sewage sludge being incinerated. This indicates that the incinerator operating conditions and site conditions will permit safe incineration of sewage sludge with high

concentration of pollutants. Given the resulting ample margin of safety between the calculated pollutant limit and the actual concentrations of metals in incinerated sewage sludge, EPA is considering introducing additional flexibility into the incinerator requirements.

#### b. Proposed Amendment

To reduce the burden of compliance with the part 503 requirements, EPA is proposing to amend the applicability section (§ 503.40) of the incineration subpart to not subject an incinerator to a pollutant limit and the associated frequency of monitoring, recordkeeping, and reporting requirements for the pollutant in certain circumstances, if approved by the permitting authority. Under the approach proposed today, the sewage sludge would not have to be monitored for a particular pollutant and records of the concentration of a pollutant in sewage sludge would not have to be kept if the calculated pollutant limit exceeds the highest average daily concentration for that pollutant in the sewage sludge for the months in the previous calendar year.

The proposed approach assumes that the incinerator continues to be operated as it was operated during its performance test. If it is not operated in that manner, the permitting authority may reimpose the frequency of monitoring, recordkeeping, and reporting requirements for the particular pollutant.

EPA requests comments on the proposed site-specific exemption from the frequency of monitoring, recordkeeping and reporting requirements for sewage sludge incinerators. EPA also requests comments on other approaches that should be considered.

For example, should the Agency limit the exemption to circumstances in which the calculated pollutant limit is significantly higher than the average daily concentration of the pollutant in the incinerated sewage sludge? If so, how should the Agency define significantly higher? An order of magnitude higher than the actual concentration in the sewage sludge, 50 percent higher, or some other percentage?

## 2. Pollutant Limits for Arsenic, Cadmium, Chromium, Lead and Nickel

#### a. Current Regulation

40 CFR 503.43 establishes limits on the allowable "daily concentration" of arsenic, cadmium, chromium, lead and nickel in sewage sludge that is incinerated. The allowable limits are

calculated using equations set forth in the regulation and are dependent on a number of factors that vary with specific conditions at an incinerator site. For all five regulated metals, the regulation requires determination of the following two factors that are dependent on site-specific conditions. These are: (1) A dispersion factor (DF)—how pollutants are dispersed when they exit the incinerator stack, and (2) the incinerator's control efficiency (CE)—how efficiently the incinerator removes pollutants in the sewage sludge that is incinerated. The regulation requires use of an air dispersion model to determine the DF and a performance test to establish the CE, both of which must be "specified by the permitting authority." In addition, if authorized by the permitting authority, the regulation provides for the calculation of an alternative allowable chromium limit based on a site-specific measurement of the fraction of hexavalent chromium to total chromium in an incinerator's stack emissions. The preamble to the final part 503 regulation explains in more detail at 58 FR 9355, February 19, 1993, how allowable concentrations are determined. EPA did not rely on assumed values for dispersion factors and control efficiency because the Agency concluded that use of such values would overgeneralize site conditions and establish more restrictive conditions than dictated by protection of public health and the environment (see 58 FR at 9355).

#### b. Proposed Amendment

The proposal would revise 40 CFR 503.43(c)(1) and (d)(1) to clarify that the sewage sludge must meet the average daily concentration for a pollutant based on the number of days in a month that the incinerator operates. This clarification is consistent with EPA's risk assessment for incinerators, which was based on average daily values. (See the definition of risk specific concentration (RSC) in § 503.41(i), which is used in the calculation of the allowable average daily sewage sludge concentration.)

The proposal also would revise 40 CFR 503.43(c)(2), (c)(3), (d)(4), and (d)(5) to remove the requirement for the permitting authority to prescribe the air dispersion model used in determining the DF, and the performance test to determine CE. In addition, the proposal would delete the requirement in current § 503(d)(3) that requires the permitting authority to authorize an allowable chromium limit based on site-specific hexavalent chromium stack emissions.

EPA is proposing these changes to modify the regulation to make it self-

implementing and thus reduce the burden on the regulated community as well as the Agency's own limited permitting resources. In the current form, the regulation requires that the permitting authority determine appropriate models and performance tests parameters before pollutant limits can be calculated. This approach assumed a process in which the person who fires sewage sludge in a sewage sludge incinerator worked closely with a permitting authority in deciding what models and performance test procedures would be appropriate.

Recognizing that such a process can be very resource-intensive, EPA is today proposing a different approach. Under this approach, allowable pollutant limits must be calculated using the equation provided in the regulation. To establish these limits, the dispersion factor must be determined through an air dispersion model and the incinerator control efficiencies must be determined through a performance test of the incinerator. The choice of appropriate models and the specifications for the performance tests rests with the person who fires sewage sludge in a sewage sludge incinerator. These choices will, of course, be reviewed by the permitting authority. Sewage sludge incinerators should retain all records that show how allowable pollutant limits were calculated.

Proposed new § 503.43(e)(1) describes the factors that should be considered in selecting an air dispersion model. The air dispersion model must be appropriate for the geographical, physical, and population conditions at the sewage sludge incinerator site. Its selection must be consistent with good air pollution control practices for minimizing air emissions. New dispersion modeling to establish the DF is required where, as provided in proposed 40 CFR 503.43(e)(4), geographic or physical conditions at the incinerator site warrant.

Under proposed 40 CFR 503.43(e)(2), a person who fires sewage sludge in a sewage sludge incinerator must submit a proposed air dispersion modeling protocol to the permitting authority no later than 30 days from the date of publication of a final rule promulgating such an amendment. This will provide the permitting authority the opportunity to review the submitted protocol to insure that it accurately models conditions at the incinerator site. The permitting authority must notify the operator within 30 days if the selected model may not be used to determine the DF because it is inappropriate. If the person who fires sewage sludge does not hear from the permitting authority to the

contrary, that person may use the submitted protocol to calculate its DF.

EPA has published several guidance documents that contain recommendations as to how to select appropriate air dispersion models. These models take into account such site-specific factors as stack height, stack diameter, stack gas temperature, exit velocity, and surrounding terrain. See U.S. EPA, "Guideline on Air Quality Models (Revised)" (EPA-450/2-78-027R) (July 1993). This information also is available in Appendix W to 40 CFR Part 51. See also U.S. EPA, "Technical Support Document for Sewage Sludge Incineration" at Section 5.6.1 (EPA 822/R-93-003) (November 1992).

In many cases, the appropriate air dispersion factor can be determined using the ISCLT2 air dispersion model. The ISCLT2 model is a steady-state Gaussian plume model that can be used to assess pollutant emissions from a wide variety of sources including sewage sludge incinerators in the long-term mode. It is appropriate for both rural or urban areas, and either flat or rolling terrain whenever the terrain elevation is lower than the stack height. The model can account for the following factors: settling and dry deposition of particles; downwash; area, line and volume sources; plume rise as a function of downwind distance; separation of point sources (multiple stacks); and limited terrain adjustment. If ground level terrain in the impact area exceeds the stack height, complex and intermediate terrain modeling also must be addressed.

As noted, this proposed rulemaking also would revise § 503.43 (c)(3) and (d)(5) to delete the requirement that the permitting authority specify how to determine the CE. Proposed § 503.43 (c)(3) and (d)(5) provide, instead, that the CE for equation (4) and equation (5), respectively, shall be determined from a performance test of the sewage sludge incinerator. Proposed paragraph (e)(1) of § 503.43 requires that the performance test be appropriate for the type of sewage sludge incinerator and that the test be conducted in a manner consistent with good air pollution control practices for minimizing air emissions. The performance test measures the degree to which the sewage sludge incinerator and associated air pollution control devices remove a given pollutant. As discussed below, performance tests also are required because they generate data on which to base the parameter operating ranges for the incinerator.

Proposed paragraph (e)(3) also specifies procedures to be followed in

conducting performance tests of sewage sludge incinerators. These procedures parallel those in 40 CFR 60.8, a regulation that describes the general procedures for conducting performance testing under the Clean Air Act. EPA believes that it is necessary to specify minimal procedures for conducting performance testing now that subpart E of part 503 is self-implementing.

Proposed 40 CFR 503.43(e)(3) would require performance testing under representative incinerator operating conditions for metals emissions, with the highest expected feed rate of sewage sludge within design specifications. Further, the permitting authority must be notified at least 30 days prior to the test so the permitting authority may observe the test. Each performance test must consist of at least three separate runs at the same operating conditions. For the purpose of establishing a control efficiency for a pollutant, the arithmetic mean of the results of the three runs should be used.

EPA has prepared guidance on the performance test used to develop the incinerator control efficiency for a pollutant. Section 5.6.2 and appendix E of the "Technical Support Document for Sewage Sludge Incineration" (EPA 822/R-93-003) (November 1992) discuss performance testing to derive the control efficiency for the five metals limited for sewage sludge incinerators under part 503 (arsenic, cadmium, chromium, lead, and nickel). EPA also published guidance on performance testing in the September, 1994 draft version of the "Guidance for Writing Permits for the Use or Disposal of Sewage Sludge."

As noted, this proposed rulemaking would delete the requirement in current § 503.43(d)(3) for the permitting authority authorization of a site-specific chromium risk specific concentration (RSC) used in the equation (5) calculation. Either the national default RSC or the RSC calculated using equation (6) can be used in equation (5) to develop a pollutant limit for chromium.

EPA has developed a methodology for determining hexavalent chromium emissions from stationary sources. See U.S. EPA, "Laboratory and Field Evaluations of a Methodology for Determining Hexavalent Chromium Emissions from Stationary Sources" (EPA/600/3-91/052) (1992). Persons who choose to calculate RSC values for chromium using equation (6) must use a scientifically defensible methodology for determining hexavalent chromium emissions.

EPA also proposes to make a technical change to § 503.43(c)(3) to correct the

number of the referenced equation to (4). In addition, EPA proposes to make three technical changes to § 503.43(d) (1) and (2). These changes will correct two typographical errors in the definition of terms in (d)(1) and in the reference to Equation "6" in (d)(2).

Given the proposed deadlines for complying with this regulation, EPA would encourage incinerators that do not have a permit to begin the effort to determine the pollutant limits for the incinerator. Prior to the effective date of this regulation, if EPA has been notified about the model used to determine the DF and if EPA was notified 30 days in advance of a performance test, following promulgation, the information on the DF model will not have to be resubmitted and a second performance test will not have to be conducted. However, in the event that conditions and circumstances change significantly at the incinerator after the allowable pollutant limits are calculated, the requirements in today's proposed rule will apply when the final regulation becomes effective.

The control efficiency of a sewage sludge incinerator is derived from a comparison of the mass of a pollutant in the sewage sludge fed to the incinerator to the mass of the pollutant in the exit gas from the incinerator stack. Thus, to determine the control efficiency, representative samples of the sewage sludge fed to the incinerator and the exit gas from the incinerator stack have to be collected and analyzed for the pollutants in 40 CFR 503.43. Under § 503.8(b)(4), EPA requires the use of a specific test methodology for analyzing the metals concentrations in the sewage sludge fed to the incinerator: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Second Edition (1982) with Updates I (April 1984) and II (April 1985) and Third Edition (November 1986) with Revision I (December 1987).

EPA does not currently require the use of a specific test methodology for calculating the metals emissions in exit gases from sewage sludge incinerator stacks. EPA does require, however, the use of a specific methodology for the determination of metals emissions (chromium, cadmium, arsenic, lead, and zinc) in exhaust gases from hazardous waste incinerators and other similar combustion processes as part of the Methods Manual for Compliance with the BIF Regulations in 40 CFR part 266, appendix IX. (The method also is available in "EPA Methods Manual for Compliance with the BIF Regulations" (EPA 530-SW-91-010).) Under the Clean Air Act, EPA has proposed to add



method 29, "Determination of Metals Emissions from Stationary Sources," to appendix A of part 60, and to propose amendments to method 101A of appendix B of part 61. (59 FR 48259, September 20, 1994). Method 29 is being proposed so that it can be used to determine mercury, cadmium, and lead emissions from municipal waste combustors under subpart Ea of part 60. (Method 29 is already applicable to arsenic, chromium, and nickel.) Public comment is specifically requested on the propriety of requiring use of one of these methods (assuming the air method is finalized as proposed) to analyze emissions from sewage sludge incinerator stacks for the metals regulated under § 503.43(c) and (d).

### 3. Management Practices

#### a. Current Regulation

##### i. Specification for Instruments

40 CFR 503.45 contains seven management practices for incineration of sewage sludge. These include requirements to install four instruments to measure and record data to determine compliance with the THC operational standard. Key operating parameters for sewage sludge incinerators are monitored continuously to indicate that adequate combustion conditions are maintained in the incinerator (consistent with the conducted performance test) and to minimize metal and THC emissions. The regulation requires that the four monitoring instruments be installed, calibrated, operated, and maintained, as specified by the permitting authority.

40 CFR 503.44 contains an operational standard for the total hydrocarbons (THC) concentration in the exit gas from a sewage sludge incinerator. By controlling THC, EPA controls the emission of organic pollutants in the sewage sludge fed to the incinerator and created during the incineration process. Under § 503.44(c), the monthly average concentration for total hydrocarbons in the sewage sludge incinerator exit gas may not exceed 100 parts per million on a volumetric basis, when corrected for zero-percent moisture and to seven-percent oxygen using equations (7) and (8) of § 503.44.

As revised in February 1994, 40 CFR 503.40(c) provides the option of continuous monitoring of the carbon monoxide concentration in the exit gas in lieu of continuous monitoring of the THC concentration in the exit gas if specified conditions are met. See 59 FR 9095, February 25, 1994. As discussed at 59 FR 9098, the alternative of monitoring for carbon monoxide is effective pending changes after an EPA

study of the matter. At the completion of the study, which EPA contemplates will address monitoring for carbon monoxide or other parameters (including temperature) to measure compliance with the THC operational standard in lieu of monitoring THC continuously, EPA will decide whether further amendments to part 503 are needed.

Under 40 CFR 503.45, an instrument must be installed, calibrated, operated, and maintained, as specified by the permitting authority, that continuously measures and records the following information: the total hydrocarbon concentration in the exit gas, the oxygen concentration in the exit gas, and information to determine the moisture content in the exit gas; and the combustion temperatures in the sewage sludge incinerator. By continuously measuring the oxygen content and information needed to determine moisture content of the exit gas, the THC emission value can be corrected to seven-percent oxygen and for zero-percent moisture.

Where incinerators have monitors that automatically correct for moisture content (e.g., continuous CO monitors), a correction for moisture content need not be made. In addition, CO and THC monitors and measuring devices may be shared if there is more than one sewage sludge incinerator at the treatment works.

##### ii. Specification of Maximum Combustion Temperature

40 CFR 503.45(e) requires the permitting authority to specify the maximum combustion temperature for a sewage sludge incinerator based on information obtained from the performance test of the sewage sludge incinerator. This practice ensures that the maximum combustion temperature does not significantly exceed the combustion temperature during the performance test of the incinerator.

##### iii. Specification of Air Pollution Control Device Operating Parameters

Another management practice for sewage sludge incineration, which is described in § 503.45(f), requires that an air pollution control device be operated within the values for the operating parameters specified by the permitting authority and that those values be based on information obtained during the performance test of the sewage sludge incinerator. The regulation contemplates that sewage sludge incinerators will have limits and monitoring requirements for selected parameters that are consistent with the performance of air pollution control

devices. Examples of air pollution control devices include venturi scrubbers, impingement scrubbers, mist eliminators, dry scrubbers, fabric filters, and wet electrostatic precipitators. For example, pressure drop, liquid flow rate, gas temperature, and gas flow rate are recommended parameters for assessing performance for venturi scrubbers.

#### b. Proposed Regulation

This proposed rulemaking would revise 40 CFR 503.45 (a)(1) and (b)-(d) to delete the requirement for the permitting authority to specify the manner in which the described instruments are to be installed, calibrated, operated, and maintained. Under proposed § 503.45(h)(1), the person who fires sewage sludge in a sewage sludge incinerator must select the instruments described in § 503.45 (a)(1) and (b)-(d) that are appropriate for the type of sewage sludge incinerator and the instruments must be installed, calibrated, operated, and maintained consistent with good air pollution control practice for minimizing emissions.

In the final part 503 rule, EPA required the permitting authority to specify the manner in which these instruments were to be installed, calibrated, operated, and maintained because, at that time, there was only limited EPA guidance in this area. In June 1994, however, EPA published new guidance entitled "THC Continuous Emission Monitoring Guidance for Part 503 Sewage Sludge Incinerators" (EPA 833-B-94-003). The guidance contains recommended installation, calibration, operation, and maintenance procedures for the instruments specified in § 503.45(a)-(c). With regard to the instrument required under § 503.45(d) for continuous measurement of combustion temperatures, see the "Technical Support Document for Sewage Sludge Incineration" at section 7.4 (EPA 822/R-93-003).

EPA is today also proposing to delete the current requirement for the permitting authority to specify the maximum combustion temperature for a sewage sludge incinerator and the values for the operating parameters for the air pollution control devices in current § 503.45 (e) and (f). Both sections already provide that the specified values are to be based on information obtained during the performance test of the sewage sludge incinerator.

Proposed § 503.45(e) states that the operation of the sewage sludge incinerator shall not significantly

exceed the maximum combustion temperature for the sewage sludge incinerator and that the maximum combustion temperature for the sewage sludge incinerator shall be based on information obtained during the performance test of the sewage sludge incinerator. EPA recognizes the variability during operation of a sewage sludge incinerator and intends that the maximum temperature be an average temperature. EPA requests comment on the type of averaging and on a range above the maximum seen in the performance test that should be allowed.

Proposed § 503.45(f) states that the operation of the sewage sludge incinerator shall not cause the values for the operating parameters for the sewage sludge incinerator air pollution control device to be exceeded. Proposed § 503.45(f) also requires that the air pollution control device selected be appropriate for the particular sewage sludge incinerator; that the operating parameters for the air pollution control device indicate adequate performance of the device; and that the values for the operating parameters for the sewage sludge incinerator air pollution control devices be based on results of the performance test of the sewage sludge incinerator. No changes should be made in the values for the air pollution control device operating parameters after the performance test. EPA intends that the values for the operating parameters for the sewage sludge incinerator air pollution control devices be a range. EPA requests comment on appropriate ranges around those seen in the performance test that should be allowed for each parameter.

EPA has developed guidance describing common air pollution control devices, the parameters for various air pollution control device technologies that indicate adequate performance of the device, and the common measuring devices for the respective parameters. See the "Technical Support Document for Sewage Sludge Incineration" sections 2.3, 7.5, and appendix M (EPA 822/R-93-003).

As noted above, EPA has developed guidance describing recommended parameters for various air pollution control device technologies that indicate adequate performance of the device. EPA is considering whether it is appropriate to standardize, by regulation, which parameters can be used to indicate adequate performance for a particular air pollution control device. EPA would appreciate receiving comments concerning whether such a regulation is necessary and whether the parameters that are listed in appendix M

to the "Technical Support Document for Sewage Sludge Incineration," as cited above, for each air pollution control device continue to be appropriate. If developed, such a regulation could allow flexibility in the selection of alternative parameters, unless the permitting authority specifies otherwise.

#### 4. Frequency of Monitoring

##### a. Current Regulation

##### i. Beryllium, Mercury, and Operating Parameters for Air Pollution Control Devices

40 CFR 503.43 (a) and (b) provide that the firing of sewage sludge in a sewage sludge incinerator may not violate the National Emission Standard for Hazardous Air Pollutant (NESHAP) for beryllium in subpart C and for mercury in subpart E of 40 CFR part 61, if applicable. To support this pollutant limit, 40 CFR 503.46(a) requires monitoring for mercury and beryllium as specified by the permitting authority.

The NESHAP in 40 CFR 61.32(a) establishes an emission standard for beryllium of no more than 10 grams of beryllium emitted over a 24-hour period; or, alternatively, upon the approval of the Administrator, 40 CFR 61.32(b) establishes an ambient concentration limit for beryllium in the vicinity of the stationary source of 0.01 µg/m<sup>3</sup>, averaged over a 30-day period. To comply with § 61.32(a), § 61.33 imposes a one-time start-up stack sampling requirement for beryllium emissions. If the option of compliance with § 61.32(b) is chosen, § 61.34 requires the stationary source to locate air sampling sites in accordance with a plan approved by the Administrator and to operate monitoring sites continuously.

With regard to mercury, the NESHAP in 40 CFR 61.52(b) establishes an emission standard of 3200 grams of mercury per 24-hour period. Sections 61.53(d) and 61.54 establish two alternatives means of establishing compliance with the emission standard: (1) an emissions test or (2) a sewage sludge sampling test. If the incinerator chooses sewage sludge sampling, § 61.54 requires the sewage sludge to be sampled according to method 105 in appendix B to part 61 and includes an equation to determine the mercury emissions from the sewage sludge sampling results:

$$E_{Hg} = \frac{MQ F_s m(\text{avg})}{1000}$$

$E_{Hg}$ =Mercury emissions, g/day.

$M$ =Mercury concentration of sewage sludge on a dry solids basis, µg/g.

$Q$ =Sewage sludge charging rate, Kg/day.  
 $F_s m$ =Weight fraction of solids in the collected sewage sludge after mixing.

1000=Conversion factor, Kg µg/g<sup>2</sup>.

Sections 61.53(d) and 61.54 impose a one-time start-up sampling requirement. Section 61.55 imposes an annual monitoring requirement for incinerators for which mercury emissions exceed 1,600 grams per 24-hour period, demonstrated either by stack sampling according to § 61.53 or sewage sludge sampling according to § 61.54.

Part 503 also imposes a monitoring obligation for sewage sludge incinerator air pollution control device operating parameters. Current 40 CFR 503.46(c) requires monitoring for these parameters as specified by the permitting authority.

##### ii. Total Hydrocarbons, Oxygen Concentration, and Information To Determine Moisture Content

Section 503.46(b) requires that the total hydrocarbons (THC) concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack and information used to determine moisture content in the exit gas be monitored continuously. Oxygen content and information used to determine moisture content have to be measured continuously because that information is needed to correct the measured exit gas THC concentrations to seven percent oxygen and for zero percent moisture.

Sections 503.45 (a) and (b) require that a continuous emissions monitor (CEM) for THC and oxygen, respectively, be installed, calibrated, operated, and maintained. As mentioned previously, today's proposal deletes the requirement for the permitting authority to specify how to install, calibrate, operate, and maintain these CEMs.

##### b. Proposed Regulation

This proposed rulemaking would incorporate the monitoring frequencies for beryllium and mercury now contained in 40 CFR Part 61 and establish specific monitoring frequencies for the sewage sludge air pollution control device operating parameters. With regard to monitoring for beryllium and mercury, EPA proposes to revise current 40 CFR 503.46(a)(1), which requires the permitting authority to specify monitoring frequencies for beryllium and mercury, to provide that beryllium shall be monitored as required under subpart C of 40 CFR part 61 and mercury as required under subpart E of 40 CFR part 61. For beryllium, this represents a one-time start-up stack

sampling requirement or, alternatively, a continuous air sampling requirement. For mercury, this represents a one-time start-up stack or sewage sludge sampling requirement, with annual monitoring for those sources for which mercury emissions exceed 1600 grams per 24-hour period, as specified in 40 CFR 61.53-.55. Because this monitoring is already required under the air program, the proposed regulation would not impose an additional monitoring burden on the regulated community.

EPA requests comments concerning whether it is appropriate to establish a periodic monitoring frequency for beryllium and mercury for sewage sludge incinerators. In contrast to the Clean Air Act, EPA has historically required periodic monitoring to determine compliance with Clean Water Act requirements.

For mercury, some options that EPA is considering are:

1. A periodic (quarterly or annual) stack or sewage sludge sampling requirement, depending on whether the incinerator has selected the emissions or sewage sludge sampling alternative specified in 40 CFR 61.53(d) or 61.54. The sampling obligation could apply to all sewage sludge incinerators that emit mercury, and could be conducted according to the test methods specified in the NESHAP (method 101A in appendix B to part 61 for stack sampling or method 105 in appendix B to part 61 for sewage sludge sampling). One disadvantage with this approach is the cost of conducting stack sampling for metals emissions, which can be in the range of several thousand dollars per sampling event. In contrast, the cost of sampling sewage sludge for most metals, including mercury, is normally less than \$80 per sample. Sewage sludge sampling would not impose any additional burden because part 503 already requires sewage sludge sampling of other metals.

2. A periodic (monthly or quarterly or annual) requirement to sample sewage sludge for mercury. The difference between options 1 and 2 is that all sewage sludge incinerators would monitor the sewage sludge for mercury, even those incinerators that choose to conduct stack sampling to meet the NESHAP requirements. All sewage sludge incinerators may use the equation specified in § 61.54(d) to assess whether the mercury concentration measured in the sewage sludge meets the NESHAP emission standard. EPA also requests comments concerning the use of the § 61.54 equation for purposes of part 503 sewage sludge sampling for beryllium. The advantage of this option is that the cost of NESHAPs sampling

sewage sludge is reduced to a minimal analytic cost alone, as discussed above.

3. Periodic sewage sludge monitoring based on the amount of sewage sludge fed to the sewage sludge incinerator. Option 3 represents a variation on Option 2. Option 3 would require sewage sludge sampling for all incinerators, as above. The frequency of monitoring, however, would vary for particular sewage sludge incinerators based on annual amount of sewage sludge fired in an incinerator as it does for other pollutants. This could be accomplished by revising current 40 CFR 503.46(a)(2) to add mercury as a pollutant for which monitoring can be conducted according to the requirements of Table 1 of § 503.46. Table 1 currently establishes a range of monitoring frequencies from once per year to once per month, depending on the amount of sewage sludge fired in a sewage sludge incinerator (metric tons per 365-day period) for the pollutants arsenic, cadmium, chromium, lead and nickel. Current § 503.46(a)(3) also allows the permitting authority to reduce the frequency of monitoring to a minimum of once per year after the sewage sludge has been monitored for two years at the frequency stated in Table 1. [See discussion above in section III.B on a proposed amendment to allow the permitting authority to reduce the frequency of monitoring for each use or disposal practice to less than once a year after the sewage sludge has been monitored for two years.] EPA also could include mercury on the list of pollutants for which the permitting authority may decrease the frequency of monitoring. This approach to monitoring for mercury appears to be simple to implement and relatively inexpensive. As is the case for the pollutants currently monitored according to Table 1, it links frequency of monitoring to amount of sewage sludge fired in an incinerator, which would decrease monitoring obligations and related costs for smaller sewage sludge incinerators.

For beryllium, EPA may consider imposing a periodic stack sampling obligation (such as annual monitoring), for those few incinerators that must comply with the emission standard specified in 40 CFR 61.32(a). (There is no need to impose a periodic monitoring obligation for those incinerators that conduct air sampling under 40 CFR 61.32(b). Section 61.34 requires continuous operation of monitoring sites.) Again, the disadvantage of conducting stack sampling is the cost, which can range to several thousand dollars per sampling event. As discussed above, the sampling

of sewage sludge for a metal such as beryllium is much lower in cost. However, such sampling is not an option that is available under the beryllium NESHAP. EPA would appreciate receiving comments concerning whether it is appropriate and feasible to develop a conversion factor so that, for purposes of part 503, results of sampling sewage sludge for beryllium can be compared to the emission standard.

Proposed § 503.46(c) requires that the air pollution control device operating parameters be monitored daily. EPA believes that the burden on the regulated community to meet a daily monitoring obligation is minimal. To insure the proper operation of the sewage sludge incinerator, due to the variable characteristics of the sewage sludge fed to the incinerator, the operating parameters for the applicable air pollution control operating devices are monitored on at least a daily (if not hourly or continuous) basis. EPA envisions that, among other acceptable approaches, this monitoring obligation, where the monitoring is not conducted on a continuous basis, could be met by recording the values for the operating parameters for the air pollution control devices in a daily log book. Retention of this logbook would fulfill the recordkeeping obligations of 40 CFR 503.47(g) and the logbook records could form the basis for the annual report to be submitted under § 503.48.

Other frequencies of monitoring that EPA considered for this management practice are: (1) Monitoring as appropriate for the air pollution control device and (2) monitoring per manufacturer's instructions for the air pollution control device. It appears likely, however, that in many instances these options would result in the same monitoring frequency or the monitoring obligation might be greater than a daily monitoring obligation. EPA sees no need for reason to impose a greater than daily minimum monitoring obligation.

The Agency is proposing to amend section 503.46(b) to allow the permitting authority to specify an alternative to continuous monitoring of the exit gas from a sewage sludge incinerator for THC, oxygen, and information needed to determine moisture content. In some cases, continuous monitoring may not be necessary to show compliance with the THC operational standard of 100 parts per million on a volumetric basis. EPA is considering two options for determining when the monitoring frequency may be reduced. Both of these options assume that the emissions will be monitored for THC periodically, but not continuously.

The first option bases the frequency of monitoring for THC, oxygen, and information used to determine moisture content on the amount of sewage sludge fired in a sewage incinerator annually. For example, if the amount fired is 25 metric tons per year or less, the permitting authority could require periodic monitoring for THC, oxygen, and information to determine moisture content and then require that the incinerator be operated consistent with the way it was operated during the monitoring episode. The monitoring frequency for oxygen and information used to measure moisture content should be consistent with the monitoring frequency for THC because the oxygen concentration and moisture content information are used to adjust the measured THC values. This approach is similar to the current part 503 frequency of monitoring approach for pollutants in the incineration subpart, which is based on the amount of sewage sludge fired in a sewage sludge incinerator annually. The lower the amount of sewage sludge fired, the less frequent samples of sewage sludge have to be collected and analyzed for pollutants.

The second option for determining whether to reduce the frequency of monitoring for THC is the number of days in a year that the incinerator operates. For example, if the incinerator operates less than 100 days per year, the frequency for THC monitoring may be something less than continuously. This is similar to Option 1 in that the more days an incinerator operates, the more sewage sludge is expected to be fired in the incinerator.

EPA specifically solicits public comment on the question of what is the appropriate monitoring frequency for beryllium, mercury, and the operating parameters for air pollution control devices. EPA also is requesting comments on the proposal to monitor THC, oxygen content, and information needed to determine moisture content less than continuously. Should less than continuous monitoring be allowed for those parameters?

EPA also is requesting comments on the above options to determine when less than continuous monitoring for THC (also oxygen and information needed to determine moisture content) should be allowed. Should less than continuous monitoring be allowed when the amount of sewage sludge incinerated annually or the number of days the incinerator operates during the year is below a certain value? Or, should some other parameter be used to decide whether the frequency can be reduced? If it is based on the amount of sewage

sludge fired annually or number of days the incinerator operates during the year, what should be the amount or number of days below which less than continuous monitoring will be allowed?

In addition, should less than continuous monitoring be allowed if carbon monoxide (CO) is monitored in the exit gas in lieu of monitoring THC? A part 503 amendment published in the Federal Register on February 24, 1994 (59 FR 9095) allows CO to be monitored in lieu of monitoring THC in certain situations.

#### 5. Reporting and Recordkeeping Obligations

This proposed rulemaking does not change the current recordkeeping and reporting requirements in 40 CFR 503.47 and 503.48. The information retained under § 503.47 and reported under § 503.48 would continue to form the basis for permitting authority oversight, including enforcement, of subpart E requirements.

#### 6. Compliance Deadlines

##### a. Current Regulation

Current 40 CFR 503.2 establishes the deadlines for compliance with the requirements of part 503. Paragraph (a) provides that compliance with all standards must be achieved as expeditiously as practicable, but no later than February 19, 1994. Where compliance with the standards requires construction of new pollution control facilities, compliance with the standards must be achieved as expeditiously as practicable, but no later than February 19, 1995.

Paragraphs (b) and (c) establish the deadlines for compliance with the frequency of monitoring, recordkeeping, and reporting requirements under part 503. Paragraph (b) provides that the THC operational standard is effective on February 19, 1994, or, if compliance with the operational standard for THC requires the construction of new pollution control facilities, by February 19, 1995. Paragraph (c) provides that all other requirements for frequency of monitoring, recordkeeping, and reporting imposed under part 503 were effective on July 20, 1993.

##### b. Proposed Regulation

EPA proposes to require compliance with the new requirements of subpart E of part 503 as expeditiously as practicable, but no later than 90 days from the publication date of the final rule. When new pollution control facilities must be constructed to comply with the revised requirements for sewage sludge incineration in subpart E, compliance shall be achieved as

expeditiously as practicable, but no later than 12 months from the date of publication of the final rule. The compliance deadline in proposed § 503.2(d) only applies where the permitting authority has not already specified requirements for the incinerator. EPA requests comment on the compliance deadlines.

#### V. Proposed Amendment to Part 403

EPA is today proposing to amend 40 CFR part 403, Appendix G—Section II (Additional Pollutants Eligible for Removal Credits). EPA is proposing to amend the General Pretreatment Regulations so that a removal credit may be authorized for chromium in sewage sludge that is land applied, given compliance with other regulatory requirements, as long as the chromium concentration in the sewage sludge does not exceed 12,000 mg/kg.

Many industrial facilities discharge large amounts of pollutants to POTWs where their wastewaters mix with wastewater from other sources, domestic sewage from private residences and run-off from various sources prior to treatment and discharge by the POTW. The introduction of pollutants to a POTW from industrial discharges may pose several problems. These include potential interference with the POTW's operation or pass-through of pollutants if inadequately treated. Congress, in section 307(b) of the Act, directed EPA to establish pretreatment standards to prevent these potential problems. Congress also recognized that, in certain instances, POTWs could provide some or all of the treatment of an industrial user's wastewater that would be required pursuant to the pretreatment standard. Consequently, Congress established a discretionary program for POTWs to grant "removal credits" to their indirect dischargers. The credit, in the form of a less stringent pretreatment standard, allows an increased concentration of a pollutant in the flow from the indirect discharger to the POTW.

Section 307(b) of the CWA establishes a three-part test a POTW would need to meet to obtain removal credit authority for a given pollutant. A removal credit may be authorized only if (1) the POTW "removes all or any part of such toxic pollutant," (2) the POTW's ultimate discharge would "not violate that effluent limitation, or standard which would be applicable to that toxic pollutant if it were discharged" directly rather than through a POTW and (3) the POTW's discharge would "not prevent sludge use and disposal by such [POTW] in accordance with section [405]. \* \* \*" Section 307(b).

The United States Court of Appeals for the Third Circuit has interpreted the statute to require EPA to promulgate comprehensive sewage sludge regulations before any removal credits could be authorized. *NRDC v. EPA*, 790 F.2d 289, 292 (3rd Cir. 1986) *cert. denied*, 479 U.S. 1084 (1987). Congress made this explicit in the Water Quality Act of 1987, which indicated that EPA could not authorize any removal credits until it issued the sewage sludge use or disposal regulation required by section 405(d)(2)(a)(ii). EPA has promulgated removal credit regulations that are codified at 40 CFR part 403.7.

At the same time EPA promulgated the part 503 regulation, EPA amended its General Pretreatment Regulations to add a new Appendix G that includes two tables of pollutants that would be eligible for a removal credit so long as the other procedural and substantive requirements of 40 CFR part 503 and 40 CFR 403.7 are met. The first table (Appendix G—Section I) lists, by use or disposal practice, the pollutants that are regulated in part 503 and eligible for a removal credit. The second table (Appendix G—Section II) lists, by use or disposal practice, additional pollutants that are eligible for a removal credit if the concentration of the pollutant does not exceed a prescribed concentration. The pollutants in Appendix G—Section II are the pollutants that EPA evaluated and decided not to regulate during development of the part 503 regulation. See 58 FR at 9381–5. EPA included chromium in Appendix G—Section I because the Agency established pollutant limits in the Part 503 regulation for sewage sludge that is land applied, surface disposed, or incinerated.

In the final part 503 regulation, EPA limited the chromium content of land-applied sewage sludge to prevent possible plant injury. On November 15, 1994, the D.C. Circuit remanded the chromium pollutant limits for modification or additional justification, concluding that EPA lacked an adequate evidentiary basis for its risk-based chromium limit. *Leather Industries of America, Inc. v. Environmental Protection Agency*, 40 F.3d 392 (D.C. Cir. 1994). Elsewhere in today's Federal Register, in response to the remand, EPA is promulgating a final rule that deletes chromium from the pollutants that are regulated when sewage sludge is applied to the land. EPA has concluded that there is no current basis for establishing chromium limits in land-applied sewage sludge. EPA's decision not to regulate chromium in land-applied sewage sludge is based on its reevaluation of the Agency's land

application risk assessment for chromium developed during the part 503 rulemaking. This reassessment showed that chromium is unlikely to be present in sewage sludge in concentrations that present a risk to public health or the environment.<sup>1</sup>

At the same time EPA deleted chromium limits from its part 503 land application requirements, EPA took two other actions. First, the Agency removed chromium from the list of regulated pollutants for land application in Appendix G—Section I for which a removal credit is available. Second, to ensure the continued eligibility of chromium for a removal credit, EPA added a footnote in Appendix G—Section II stating the chromium concentration in Section II for land application would be determined on a case-by-case basis. Case-by-case determinations would continue to be made until EPA determines a safe concentration for chromium in sewage sludge that is land applied—the action being proposed here.

In the 1993 amendments to part 403, EPA included pollutants that it evaluated for risk and decided not to regulate in Appendix G—Section II at the highest concentration evaluated as safe based on the concentrations developed during the risk assessment for the final part 503 regulation. See 58 FR 9382. Consequently, EPA reviewed its land application risk assessment to determine the safe level for chromium. Based on the results of the 1993 risk assessment and the results of the reevaluation of Pathway 11, EPA is proposing to include a number for land-applied chromium in Appendix G—Section II at a concentration of 12,000 mg/kg. EPA has concluded that this is the highest level EPA identified as safe for the following reasons.

As explained above, EPA reevaluated its 1993 land application risk

<sup>1</sup> For the Part 503 regulation, in descending order of stringency, the risk assessment cumulative loading rates for chromium are 3,000 kg/hectare (Pathway 8—plant toxicity), 5,000 kg/hectare (Pathway 11—tractor operator) and 12,000 kg/hectare (Pathway 14—groundwater). See Technical Support Document for the Land Application of Sewage Sludge Table 5.4–5, p. 5–435. Having determined that current information would not support regulation of chromium to prevent plant injury, EPA took a second look at Pathways 11 and 14. EPA revised the Pathway 11 analysis and determined that a significantly less stringent cumulative pollutant loading rate than 5,000 kg/hectare would protect a tractor operator from potential injury from inhaled chromium. A complete explanation of EPA's reanalysis may be found in the docket for this rulemaking.

Given the fact that the Pathway 11 and Pathway 14 risk limits (expressed as a chromium concentration in sewage sludge) exceeded the 99th percentile sludge concentration by at least an order of magnitude, EPA decided not to establish land application pollutant limits for chromium.

assessment for Pathway 11 and determined that a cumulative pollutant loading rate for chromium for land-applied sewage sludge well in excess of the 5,000 kg/hectare loading rate calculated in the 1993 assessment presents little threat to a tractor operator because of the low hexavalent chromium concentration in the sewage sludge. Consequently, the next pathway in EPA's land application risk assessment at which chromium may present a threat to public health and the environment is Pathway 14, the ground-water pathway. (Technical Support Document for the Land Application of Sewage Sludge, November 1992, Table 5.4–5, p. 5–435). The 1993 risk assessment concluded that as long as the total amount of chromium applied to the land in sewage sludge did not exceed 12,000 kg/hectare, the potential for adverse effects on the ground water beneath a land application site is low. EPA is asking for public comment on whether a concentration of 12,000 mg/kg<sup>2</sup> is the appropriate level at which chromium should be included on Appendix G—Section II.

## VI. Regulatory Requirements

### A. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is "significant" and therefore subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

- (1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- (4) raise novel legal or policy issues arising out of legal mandates, the

<sup>2</sup> In the case of those pollutants EPA evaluated in the 1993 risk assessment and decided not to regulate, EPA established Section II pollutant concentrations that are derived from the 1993 risk assessment cumulative pollutant loading rates. To convert a cumulative pollutant loading rate to a pollutant concentration, EPA assumed that 10 metric tons of sewage sludge would be applied to a hectare of land each year for 100 years.

President's priorities, or the principles set forth in the Executive Order."

Executive Order 12866 requires EPA to prepare an assessment of the costs and benefits of any "significant regulatory action." It has been determined that this rule is not a "significant regulatory action" under the terms of Executive Order 12866 and is not subject, therefore, to OMB review. Further, because the effect of today's rule is to modify current requirements and provide additional flexibility to the regulated community, costs to the regulated community should be reduced or at least remain unchanged. OMB has waived review of this proposed rule.

#### *B. Executive Order 12875*

Under Executive Order 12875 (58 FR 58093, October 28, 1993), entitled *Enhancing the Intergovernmental Partnership*, the Agency is required to develop an effective process to permit elected officials and other representatives of State, local, and tribal governments to provide meaningful and timely input in the development of regulatory proposals.

EPA sought the involvement of those persons who are intended to benefit from or expected to be burdened by this proposal before issuing a notice of proposed rulemaking. Following informal consultation, in January 1995, EPA circulated a draft of the proposed changes for comment to the regulated community, environmentalists, and States. EPA received a small number of comments, which have been addressed in today's rule.

#### *C. Regulatory Flexibility Act*

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. 601-612, whenever an agency is required to publish a General Notice of Rulemaking for any proposed or final rule, it must prepare and make

available for public comment a regulatory flexibility analysis that describes the impact of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required, however, if the head of the Agency certifies that the rule will not have a significant impact on a substantial number of small entities.

This action to amend the part 403 and part 503 regulations proposed today provides added flexibility and technical clarification for some of the requirements. It will only provide beneficial opportunities for entities that may be affected by the rule.

Accordingly, I certify that this regulation will not have a significant economic impact on a substantial number of small entities. This regulation, therefore, does not require a regulatory flexibility analysis.

#### *D. Paperwork Reduction Act*

The information collection requirements for part 503 were approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* (See 58 FR 9377, February 19, 1993.) There are no new reporting, notification, or recordkeeping (information) provisions in this proposed rule.

#### *E. Unfunded Mandates*

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, or tribal governments, in the aggregate, or

to the private sector, of \$100 million or more in any one year. When such a statement is needed for an EPA rule, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, giving them meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising them on compliance with the regulatory requirements.

EPA has determined that today's amendments to part 503 do not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local or tribal governments or the private sector in any one year. With one exception, the proposed amendments either clarify existing regulatory requirements or provide additional flexibility to the regulated community in complying with current regulatory requirements.

For example, EPA is proposing a number of changes to reduce the reporting and recordkeeping burden of the current requirements. These would include amendments to authorize the permitting authority to reduce the required frequency of monitoring of sewage sludge or, in the case of incinerated sewage sludge, to exempt certain facilities entirely from monitoring, recordkeeping, and reporting requirements. EPA also is proposing to amend the current regulation to delete the requirement for land applicators of sewage sludge to record the time of day sewage sludge is applied. In addition, the proposal would modify the certification provision of the current substantive requirement to certify certain information to the permitting authority. Under the proposal, the certifier would certify to the accuracy of the submitted information and not, as is the case at present, to the submitter's compliance with regulatory requirements.

EPA is proposing to delete language from the current regulation that required the permitting authority to specify certain factors used to calculate site-by-site pollutant limits for sewage sludge incinerators and to specify how to install, calibrate, operate and maintain incinerator continuous emission monitors. The proposal also includes technical amendments that would correct inaccurate cross-references and add omitted reporting dates and inadvertently omitted phrases. Therefore, to the extent that the proposed regulation would reduce the costs of complying with current part 503 requirements, the proposed changes will lessen the regulatory burden on State, local, or tribal governments.

One proposed change may result in a small annual increase in costs to State, local, or tribal governments in certain circumstances. The current regulation provides that sewage sludge that is applied to land for a beneficial purpose

or disposed at surface disposal sites must, among other conditions, meet requirements for reducing the pathogen content of the sewage sludge. Sewage sludge must meet either Class A or Class B pathogen requirements. The regulation provides a number of alternatives for achieving the Class A and Class B requirements. These alternatives include treatment processes that reduce the density of enteric viruses, viable helminth ova and *Salmonella, sp.* bacteria in the sewage sludge. In addition, in the case of the Class A alternatives, the density of either fecal coliform or *Salmonella sp.* bacteria in the sewage sludge may not exceed prescribed levels at the time the sewage sludge is used or disposed. Today's proposal would change the description of one of the Processes to Further Reduce Pathogens to require that a certain dose of gamma rays be used. The dosage was inadvertently deleted from the process description in the final rule.

As noted above, there are either no (or reduced) costs associated with the other changes proposed today. Thus, today's proposed rule is not subject to the requirements in sections 202 and 205 of the Act.

EPA has determined that this proposal contains no regulatory requirements that might significantly or uniquely affect small governments that may operate publicly owned treatment works (POTWs) generating sewage sludge. The proposed amendments would not significantly affect small governments because as explained above, the proposed amendments would either provide additional flexibility in complying with pre-existing regulatory requirements or clarify these requirements. The proposed amendments also would not uniquely affect small governments because the increased flexibility provided by the proposed changes would be available to POTWs operated by small governments

to the same extent as to other sewage sludge users or disposers.

#### List of Subjects

##### *40 CFR Part 403*

Environmental protection, Incineration, Land application, Pollutants, Removal Credits, Sewage sludge, and Surface disposal.

##### *40 CFR Part 503*

Environmental Protection, Frequency of monitoring, Incineration, Incorporation by reference, Land application, Management practices, Pathogens, Pollutants, Reporting and recordkeeping requirements, Sewage sludge, Surface disposal and Vector attraction reduction.

Dated: October 10, 1995.

Carol M. Browner,  
*Administrator.*

For the reasons set out in the preamble, title 40 of the Code of Federal Regulations is proposed to be amended as set forth below:

#### **PART 403—GENERAL PRETREATMENT REGULATIONS FOR EXISTING AND NEW SOURCES OF POLLUTION**

1. The authority citation for 40 CFR part 403 continues to read as follows:

Authority: Sec. 54(c)(2) of the Clean Water Act of 1977, (Pub. L. 95-217) sections 204(b)(1)(C), 208(b)(2)(C)(iii), 301(b)(1)(A)(ii), 301(b)(2)(A)(ii), 301(b)(2)(C), 301(h)(5), 301(j)(2), 304(e), 304(g), 307, 308, 309, 402(b), 405, and 501(a) of the Federal Water Pollution Control Act (Pub. L. 92-500) as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987 (Pub. L. 100-4).

2. Appendix G to part 403 is proposed to be amended by revising section "II." to read as follows:

Appendix G—Pollutants Eligible for A Removal Credit

I. \* \* \*

II. ADDITIONAL POLLUTANTS ELIGIBLE FOR A REMOVAL CREDIT

[Milligrams per kilogram—dry weight basis]

Pollutant	Use or disposal practice (SD)			
	LA	Unlined <sup>1</sup>	Lined <sup>2</sup>	I
Arsenic			<sup>3</sup> 100	
Aldrin/Dieldrin (Total)	2.7			
Benzene	<sup>3</sup> 16.0	140	3,400	
Benzo(a)pyrene	15.0	<sup>3</sup> 100	<sup>3</sup> 100	
Bis(2-ethylhexyl)phthalate		<sup>3</sup> 100	<sup>3</sup> 100	
Cadmium		<sup>3</sup> 100	<sup>3</sup> 100	
Chlordane	86.0	<sup>3</sup> 100	<sup>3</sup> 100	
Chromium	12,000.0		<sup>3</sup> 100	
Copper		<sup>3</sup> 46	<sup>3</sup> 100	1,400.0
DDD, DDE, DDT (Total)	1.2	2,000	2,000	
2,4 Dichlorophenoxy-acetic acid		7	7	
Fluoride	730.0			
Heptachlor	7.4			
Hexachlorobenzene	29.0			
Hexachlorobutadiene	600.0			
Iron	<sup>3</sup> 78.0			
Lead		<sup>3</sup> 100	<sup>3</sup> 100	
Lindane	84.0	<sup>3</sup> 28	<sup>3</sup> 28	
Malathion		0.63	0.63	
Mercury		<sup>3</sup> 100	<sup>3</sup> 100	
Molybdenum		40	40	
Nickel			<sup>3</sup> 100	
N-Nitrosodimethylamine	2.1	0.088	0.088	
Pentachlorophenol	30.0			
Phenol		82	82	
Polychlorinated biphenyls	4.6	<50	<50	
Selenium		4.8	4.8	4.8
Toxaphene	10.0	<sup>3</sup> 26	<sup>3</sup> 26	
Trichloroethylene	<sup>3</sup> 10.0	9,500	<sup>3</sup> 10	
Zinc		4,500	4,500	4,500.0

<sup>1</sup> Sewage sludge unit without a liner and leachate collection system.

<sup>2</sup> Sewage sludge unit with a liner and leachate collection system.

<sup>3</sup> Value expressed in grams per kilogram—dry weight basis.

KEY:

- LA—land application
- SD—surface disposal
- I—incineration

**PART 503—STANDARDS FOR THE USE OR DISPOSAL OF SEWAGE SLUDGE**

1. The authority citation for 40 CFR part 503 continues to read as follows:

Authority: Sections 405(d) and (e) of the Clean Water Act, as amended by Pub. L. 95-217, Sec. 54(d), 91 Stat. 1591 (33 U.S.C. 1345 (d) and (e)); and Pub. L. 100-4, Title IV, Sec. 406(a), (b), 101 Stat., 71, 72 (33 U.S.C. 1251 et seq.).

\* \* \* \* \*

2. Section 503.2 is amended by adding a new paragraph (d) to read as follows:

**§ 503.2 Compliance period.**

\* \* \* \* \*

(d) Compliance with the requirements for sewage sludge incineration in subpart E that were revised on [date of publication of the final regulations] shall be achieved as expeditiously as practicable, but in no case later than [90 days from the date of publication of the final regulations]. When new pollution

control facilities must be constructed to comply with the revised requirements for sewage sludge incineration in subpart E, compliance with the revised requirements shall be achieved as expeditiously as practicable but no later than [12 months from date of publication of the final regulations].

3. Section 503.10 is amended by revising paragraphs (b)(1), (c)(1), (d), (e), (f), and (g) to read as follows:

**§ 503.10 Applicability.**

\* \* \* \* \*

(b) \* \* \*

(1) Bulk sewage sludge. The general requirements in § 503.12 and the management practices in § 503.14 do not apply when bulk sewage sludge is applied to the land if the bulk sewage sludge meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an

equivalent vector attraction reduction requirement, as determined by the permitting authority.

\* \* \* \* \*

(c) \* \* \*

(1) The general requirements in § 503.12 and the management practices in § 503.14 do not apply when a bulk material derived from sewage sludge is applied to the land if the derived bulk material meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority.

\* \* \* \* \*

(d) The requirements in this subpart do not apply when a bulk material derived from sewage sludge is applied to the land if the sewage sludge from



which the bulk material is derived meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority.

(e) Sewage sludge sold or given away in a bag or other container for application to the land. The general requirements in § 503.12 and the management practices in § 503.14 do not apply when sewage sludge is sold or given away in a bag or other container for application to the land if the sewage sludge sold or given away in a bag or other container for application to the land meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority.

(f) The general requirements in § 503.12 and the management practices in § 503.14 do not apply when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land if the derived material meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority.

(g) The requirements in this subpart do not apply when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land if the sewage sludge from which the material is derived meets the ceiling concentrations in Table 1 of § 503.13 and the pollutant concentrations in Table 3 of § 503.13; the Class A pathogen requirements in § 503.32(a); and one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority.

4. Section 503.15 is amended by revising paragraphs (c)(1), (c)(2), and (c)(3) to read as follows:

**§ 503.15 Operational standards—pathogens and vector attraction reduction.**

\* \* \* \* \*

(c) \* \* \*

(1) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8); a requirement that is equivalent to one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8), as determined by the permitting authority; or the vector attraction reduction requirements in § 503.33 (b)(9) or (b)(10) shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, shall be met when bulk sewage sludge is applied to a lawn or home garden.

(3) One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.

\* \* \* \* \*

5. Section 503.16 is amended by revising the text preceding the table in paragraph (a)(1) and revising paragraph (a)(2) to read as follows:

**§ 503.16 Frequency of monitoring.**

(a) Sewage sludge. (1) The frequency of monitoring for the pollutants listed in Table 1, Table 2, Table 3 and Table 4 of § 503.13; the pathogen density requirements in § 503.32(a) and in § 503.32(b)(2); the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(4) and § 503.33 (b)(6) through (b)(8) shall be the frequency in Table 1 of § 503.16.

\* \* \* \* \*

(2) After the sewage sludge has been monitored for two years at the frequency in Table 1 of § 503.16, the permitting authority may reduce the frequency of monitoring for pollutant concentrations and for the pathogen density requirements in § 503.32(a)(5)(ii) and (a)(5)(iii).

\* \* \* \* \*

6. Section 503.17 is amended by revising paragraphs (a)(1)(ii), (a)(1)(iv), (a)(2)(ii), (a)(2)(iv), (a)(3)(i)(B), (a)(3)(ii)(A), (a)(4)(i)(B), (a)(4)(i)(D), (a)(4)(ii)(A), (a)(5)(i)(B), (a)(5)(i)(D), (a)(5)(ii)(C), (a)(5)(ii)(F), (a)(5)(ii)(H), (a)(5)(ii)(J), (a)(5)(ii)(L), (a)(6)(iii), (a)(6)(v), (b)(3), (b)(6), and (b)(7) and by

adding a new paragraph (a)(4)(ii)(E) to read as follows:

**§ 503.17 Recordkeeping.**

(a) Sewage sludge.

(1) \* \* \*

(ii) The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in § 503.32(a) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in § 503.33 (b)(1) through § 503.33(b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

\* \* \* \* \*

(iv) A description of how one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, is met.

(2) \* \* \*

(ii) The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in § 503.32(a) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in § 503.33(b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

\* \* \* \* \*

(iv) A description of how one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting, is met.

(3) \* \* \*

(i) \* \* \*

(A) \* \* \*

(B) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in § 503.32(a) has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(ii) \* \* \*

(A) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in § 503.14 and the vector attraction reduction requirement in [insert either § 503.33 (b)(9) or (b)(10)] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(4) \* \* \*

(i) \* \* \*

(B) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirements in § 503.32(b) and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, if one of those requirements is met] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(D) When one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or when an equivalent vector attraction reduction requirement, as determined by the permitting authority, is met, a description of how the vector attraction reduction requirement is met.

(ii) \* \* \*

(A) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in § 503.14, the site restrictions in § 503.32(b)(5), and the vector attraction reduction requirement in [insert either § 503.33 (b)(9) or (b)(10) if one of those requirements is met] has been prepared for each site on which bulk sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(E) The date bulk sewage sludge is applied to each site.

(5) \* \* \*

(i) \* \* \*

(B) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in [insert either § 503.32(a) or § 503.32(b)] and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, if one of those requirements is met] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(D) When one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, is met, a description of how the vector attraction reduction requirement is met.

(ii) \* \* \*

(C) The date bulk sewage sludge is applied to each site.

\* \* \* \* \*

(F) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the requirements to obtain information in § 503.12(e)(2) has been prepared for each site on which bulk sewage sludge is applied under my direction and supervision in accordance with the

system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(H) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in § 503.14 has been prepared for each site on which bulk sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(J) The following certification statement when the bulk sewage sludge meets the Class B pathogen requirements in § 503.32(b):

"I certify, under penalty of law, that the information that will be used to determine compliance with the site restrictions in § 503.32(b)(5) has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(L) The following certification statement when the vector attraction reduction requirement in either § 503.33 (b)(9) or (b)(10) is met:

"I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in [insert either § 503.33(b)(9) or § 503.33(b)(10)] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

\* \* \* \* \*

(6) \* \* \*

(iii) The following certification statement:

"I certify, under penalty of law, that the information that will be used to determine compliance with the management practice in § 503.14(e), the Class A pathogen requirement in § 503.32(a), and the vector attraction

reduction requirement in [insert one of the vector attraction reduction requirements in § 503.33(b)(1) through § 503.33(b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

\* \* \* \* \*

(v) A description of how one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, is met.

(b) \* \* \*

(3) The date domestic septage is applied to each site.

\* \* \* \* \*

(6) The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements [insert either § 503.32(c)(1) or § 503.32(c)(2)] and the vector attraction reduction requirement in [insert § 503.33(b)(9), § 503.33(b)(10), or § 503.33(b)(12)] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

(7) A description of how the pathogen requirements in either § 503.32 (c)(1) or (c)(2) are met.

\* \* \* \* \*

7. Section 503.18 is amended by revising paragraph (a)(2) to read as follows:

**§ 503.18 Reporting.**

(a) \* \* \*

(2) The information in § 503.17 (a)(5)(ii)(A) through (a)(5)(ii)(g) on February 19th of each year when 90 percent or more of any of the cumulative pollutant loading rates in Table 2 of § 503.13 is reached at a site.

\* \* \* \* \*

8. Section 503.22 is amended by revising paragraph (b) to read as follows:

**§ 503.22 General requirements.**

\* \* \* \* \*

(b) An active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time;

located in an unstable area; or located in a wetland, except as provided in a permit issued pursuant to either section 402 or 404 of the CWA, shall close by March 22, 1994, unless, in the case of an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time, otherwise specified by the permitting authority.

\* \* \* \* \*

9. Section 503.25 is amended by revising paragraph (b) to read as follows:

**§ 503.25 Operational standards—pathogens and vector attraction reduction.**

\* \* \* \* \*

(b) Vector attraction reduction—sewage sludge (other than domestic septage). One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8); a requirement that is equivalent to one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8), as determined by the permitting authority; or one of the vector attraction reduction requirements in § 503.33 (b)(9) through (b)(11) shall be met when sewage sludge is placed on an active sewage sludge unit.

\* \* \* \* \*

10. Section 503.26 is amended by revising the text preceding the table in paragraph (a)(1), and revising paragraph (a)(2) to read as follows:

**§ 503.26 Frequency of monitoring.**

(a) Sewage sludge (other than domestic septage).

(1) The frequency of monitoring for the pollutants in Tables 1 and 2 of § 503.23; the pathogen density requirements in § 503.32(a) and in § 503.32(b)(2); and the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(4) and § 503.33 (b)(6) through (b)(8) for sewage sludge placed on an active sewage sludge unit shall be the frequency in Table 1 of § 503.26.

\* \* \* \* \*

(2) After the sewage sludge has been monitored for two years at the frequency in Table 1 of § 503.26, the permitting authority may reduce the frequency of monitoring for pollutant concentrations and for the pathogen density requirements in § 503.32 (a)(5)(ii) and (a)(5)(iii).

\* \* \* \* \*

11. Section 503.27 is amended by revising paragraphs (a)(1)(ii), (a)(1)(iv), (a)(2)(ii), (b)(1)(i), and (b)(2)(i) to read as follows:

**§ 503.27 Recordkeeping.**

(a) \* \* \*

(1) \* \* \*

(ii) The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in [insert § 503.32(a), § 503.32(b)(2), § 503.32(b)(3), or § 503.32(b)(4) when one of those requirements is met] and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, when one of those requirements is met] have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the [pathogen requirements and vector attraction reduction requirements] have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

\* \* \* \* \*

(iv) A description of how one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, is met when one of those requirements is met.

(2) \* \* \*

(ii) The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in § 503.24 and the vector attraction reduction requirement in [insert one of the requirements in § 503.33(b)(9) through § 503.33(b)(11) if one of those requirements is met] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

\* \* \* \* \*

(b) \* \* \*

(1) \* \* \*

(i) The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirements in § 503.33(b)(12) has been prepared under my direction and supervision in

accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

\* \* \* \* \*

(2) \* \* \*

(i) The following certification statement:

“I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in § 503.24 and the vector attraction reduction requirements in [insert § 503.33(b)(9) through § 503.33(b)(11) when one of those requirements is met] has been prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment.”

\* \* \* \* \*

12. Section 503.31 is amended by revising paragraph (g) to read as follows:

**§ 503.31 Special definitions.**

\* \* \* \* \*

(g) pH means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25°C or measured at another temperature and then converted to an equivalent value at 25°C.

\* \* \* \* \*

13–15. Section 503.32 is amended by revising the heading for paragraph (a)(3) and revising paragraphs (b)(2)(i) and (b)(5)(v) to read as follows:

**§ 503.32 Pathogens.**

(a) \* \* \*

(3) Class A—Alternative 1 (Not applicable for composting). \* \* \*

\* \* \* \* \*

(b) \* \* \*

(2) Class B—Alternative 1.

(i) Seven representative samples of the sewage sludge that is used or disposed shall be collected.

\* \* \* \* \*

(5) \* \* \*

(v) Animals shall not be grazed on the land for 30 days after application of sewage sludge.

\* \* \* \* \*

16–17. Section 503.33 is amended by revising paragraphs (a)(1) through (a)(4) and paragraphs (b)(6) through (b)(8) and paragraph (b)(10)(i) to read as follows:

**§ 503.33 Vector attraction reduction.**

(a)(1) One of the vector attraction reduction requirements in § 503.33(b)(1)

through § 503.33(b)(8); a requirement that is equivalent to one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8), as determined by the permitting authority; or the vector attraction reduction requirements in § 503.33 (b)(9) or (b)(10) shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) One of the vector attraction reduction requirements in § 503.33(b)(1) through § 503.33(b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, shall be met when bulk sewage sludge is applied to a lawn or a home garden.

(3) One of the vector attraction reduction requirements in § 503.33(b)(1) through § 503.33(b)(8) or an equivalent vector attraction reduction requirement, as determined by the permitting authority, shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.

(4) One of the vector attraction reduction requirements in § 503.33(b)(1) through § 503.33(b)(8); a requirement that is equivalent to one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8), as determined by the permitting authority; or one of the vector attraction reduction requirements in § 503.33 (b)(9) through (b)(11) shall be met when sewage sludge (other than domestic septage) is placed on an active sewage sludge unit.

\* \* \* \* \*

(b) \* \* \*

(6) The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f).

(7) The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent, based on the moisture content and total solids prior to mixing with other materials, at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f).

(8) The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent, based on the moisture content and total solids prior to mixing with other materials, at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or the time the sewage sludge is prepared to meet the requirements in § 503.10 (b), (c), (e), or (f).

\* \* \* \* \*

(10) (i) Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land, unless otherwise specified by the permitting authority.

\* \* \* \* \*

18. Section 503.40 is amended by adding a new paragraph (d) to read as follows:

**§ 503.40 Applicability.**

\* \* \* \* \*

(d) The frequency of monitoring requirements for a pollutant in § 503.46 (a)(2) and (a)(3), the recordkeeping requirement for a pollutant in § 503.47(b), and the reporting requirement for a pollutant in § 503.48 do not apply when the following conditions are met, if approved by the permitting authority.

(i) The average daily concentration for the pollutant calculated pursuant to § 503.43(c) or § 503.43(d) exceeds the highest average daily concentration for the pollutant measured in the sewage sludge for the months in the previous calendar year.

(ii) The incinerator is operated within the operating parameters established during the performance test required by § 503.43(c)(3) or § 503.43(d)(5).

19. Section 503.43 is amended by revising paragraphs (c)(1), (c)(2), (c)(3), (d)(1), the text preceding the table in paragraphs (d)(2) and (d)(3), revising paragraph (d)(4), and (d)(5), and by adding a new paragraph (e) to read as follows:

**§ 503.43 Pollutant limits.**

\* \* \* \* \*

(c) Pollutant limit—lead.

(1) The average daily concentration of lead in sewage sludge fed to a sewage sludge incinerator shall not exceed the concentration calculated using Equation (4).

$$C = \frac{0.1 \times \text{NAAQS} \times 86,400}{\text{DF} \times (1 - \text{CE}) \times \text{SF}} \quad \text{Eq. (4)}$$

Where:

C=Average daily concentration of lead in sewage sludge in milligrams per kilogram of total solids (dry weight basis) for the days in the month that the sewage sludge incinerator operates.

NAAQS=National Ambient Air Quality Standard for lead in micrograms per cubic meter.

DF=Dispersion factor in micrograms per cubic meter per gram per second.

CE=Sewage sludge incinerator control efficiency for lead in hundredths.

SF=Sewage sludge feed rate in metric tons per day (dry weight basis).

(2) The dispersion factor (DF) in equation (4) shall be determined from an air dispersion model.

(i) When the sewage sludge stack height is 65 meters or less, the actual sewage sludge incinerator stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (4).

(ii) When the sewage sludge incinerator stack height exceeds 65 meters, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (4).

(3) The control efficiency (CE) in equation (4) shall be determined from a performance test of the sewage sludge incinerator.

(d) \* \* \*

(1) The average daily concentration for arsenic, cadmium, chromium, and nickel in sewage sludge fed to a sewage sludge incinerator each shall not exceed the concentration calculated using equation (5).

$$C = \frac{RSC \times 86,400}{DF \times (1 - CE) \times SF} \quad \text{Eq. (5)}$$

Where:

C=Average daily concentration of arsenic, cadmium, chromium, or nickel in sewage sludge in milligrams per kilogram of total solids (dry weight basis) for the days in the month that the incinerator operates.

CE=Sewage sludge incinerator control efficiency for arsenic, cadmium, chromium, or nickel in hundredths.

DF=Dispersion factor in micrograms per cubic meter per gram per second.

RSC=Risk specific concentration, in micrograms per cubic meter.

SF=Sewage sludge feed rate in metric tons per day (dry weight basis).

(2) The risk specific concentrations for arsenic, cadmium, and nickel used

in equation (5) shall be obtained from Table 1 of § 503.43.

\* \* \* \* \*

(3) The risk specific concentration for chromium used in equation (5) shall be obtained from Table 2 of § 503.43 or shall be calculated using equation (6).

\* \* \* \* \*

(4) The dispersion factor (DF) in equation (5) shall be determined from an air dispersion model.

(i) When the sewage sludge incinerator stack height is equal to or less than 65 meters, the actual sewage sludge incinerator stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (5).

(ii) When the sewage sludge incinerator stack height is greater than 65 meters, the creditable stack height shall be determined in accordance with 40 CFR 51.100(ii) and the creditable stack height shall be used in the air dispersion model to determine the dispersion factor (DF) for equation (5).

(5) The control efficiency (CE) in equation (5) shall be determined from a performance test of the sewage sludge incinerator.

(e) Air Dispersion Modeling and Performance Testing

(1) The air dispersion models and performance tests used to determine the pollutant limits in paragraphs (c) and (d) of this section shall be consistent with good air pollution control practices for minimizing air emissions. The air dispersion model shall be appropriate for the geographical, physical, and population characteristics at the sewage sludge incinerator site. The performance test shall be appropriate for the type of sewage sludge incinerator.

(2) A proposed air dispersion modeling protocol shall be submitted to the permitting authority no later than 30 days from [date of publication of the final regulation]. The protocol shall include a clear and complete description of the proposed model and rational including data that supports the validity of the chosen approach. The submitted air dispersion modeling protocol may be used to develop the air dispersion factor if the permitting authority concurs or does not respond within 30 days from submission.

(3) The following procedures, at a minimum, shall apply in conducting performance tests:

(i) The performance test shall be conducted under representative incinerator conditions at the highest expected sewage sludge feed rate within design specifications.

(ii) The permitting authority shall be provided notice at least 30 days prior to

any performance test so the permitting authority may have the opportunity to observe the test. This notice shall include a test protocol with incinerator operating conditions and a list of test methods to be used.

(iii) Performance testing facilities shall contain safe sampling platforms and safe access to them.

(iv) Each performance test shall consist of three separate runs using the applicable test method. For the purpose of establishing a control efficiency, the arithmetic mean of the results of the three runs shall apply.

(4) The pollutant limits in paragraphs (c) and (d) of this section shall be submitted to the permitting authority no later than 30 days after completion of the air dispersion modelling and performance test.

(5) Significant changes in geographic or physical characteristics at the incinerator site or in incinerator operating conditions will require new air dispersion modeling or performance testing to determine a new dispersion factor or new control efficiency that will be used to establish revised pollutant limits.

20. Section 503.45 is amended by revising paragraphs (a)(1), (b), (c), (d), (e), and (f), and by adding a new paragraph (h) to read as follows:

**§ 503.45 Management practices.**

(a)(1) An instrument that continuously measures and records the total hydrocarbons concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator.

\* \* \* \* \*

(b) An instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator.

(c) An instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator.

(d) An instrument that continuously measures and records combustion temperatures shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator.

(e) Operation of the sewage sludge incinerator shall not cause a significant exceedence of the maximum combustion temperature for the sewage sludge incinerator. The maximum combustion temperature for the sewage

sludge incinerator shall be based on information obtained during the performance test of the sewage sludge incinerator to determine pollutant control efficiencies.

(f) Appropriate air pollution control devices shall be installed for the sewage sludge incinerator. Operating parameters for the air pollution control devices shall be selected that indicate adequate performance of the device. The values for the operating parameters for the air pollution control device shall be based on information obtained during the performance test of the sewage sludge incinerator to determine pollutant control efficiencies. Operation of the sewage sludge incinerator shall not cause a significant exceedence of the values for the selected operating parameters for the air pollution control device.

\* \* \* \* \*

(h) The instruments required in § 503.45(a)-(d) shall be appropriate for the type of sewage sludge incinerator and shall be installed, calibrated, operated, and maintained consistent

with good air pollution control practice for minimizing air emissions.

21. Section 503.46 is amended by revising paragraphs (a)(1), (a)(3), (b) and (c) to read as follows:

**§ 503.46 Frequency of monitoring.**

(a) Sewage sludge.

(1) The frequency of monitoring for beryllium shall be as required under subpart C of 40 CFR part 61 and for mercury as required under subpart E of 40 CFR part 61.

\* \* \* \* \*

(3) After the sewage sludge has been monitored for two years at the frequency in Table 1 of § 503.46, the permitting authority may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.

(b) Total hydrocarbons, oxygen concentration, information to determine moisture content, and combustion temperatures.

The total hydrocarbons concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack, the information used to measure moisture content in the exit gas, and the

combustion temperatures for the sewage sludge incinerator shall be monitored continuously, unless otherwise specified by the permitting authority.

(c) Air pollution control device operating parameters. The frequency of monitoring for the air pollution control device operating parameters shall be at least daily.

\* \* \* \* \*

22. Appendix B to 40 CFR part 503 is amended by revising the description of "Process to Further Reduce Pathogen" paragraph (6) to read as follows:

Appendix B to Part 503—Pathogen Treatment Processes

\* \* \* \* \*

B. Processes To Further Reduce Pathogens (PFRP)

\* \* \* \* \*

(6) Gamma ray irradiation—Sewage sludge is irradiated with gamma rays from certain isotopes, such as <sup>60</sup>Cobalt and <sup>137</sup>Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20° C).

[FR Doc. 95-25776 Filed 10-24-95; 8:45 am]

BILLING CODE 6560-50-P