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40 CFR Parts 260, 264, and 271
Amendments to the Corrective Action Management Unit Rule; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 260, 264, and 271

[FRL–6850–3]

RIN 2050–AE77

Amendments to the Corrective Action Management Unit Rule

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: In today's action, the Agency is proposing amendments to the regulations governing Corrective Action Management Units (CAMUs) concerning: the types of wastes that may be managed in a Corrective Action Management Unit (CAMU), the design standards that apply to CAMUs, the treatment requirements for wastes placed in CAMUs, information submission requirements for CAMU applications, responses to releases from CAMUs, and public participation requirements for CAMU decisions. In addition, today's proposed amendments would ''grandfather'' certain categories of CAMUs and create new requirements for CAMUs used only for treatment or storage (*i.e.*, those in which wastes will not remain after closure). Today's action also requests comment on a potential change to the staging pile regulations. Finally, today's action proposes an approach to state authorization that would, as part of this rulemaking, grant ''interim authorization'' for today's amendments to most states currently authorized for the CAMU rule and would expedite the authorization process for states authorized for corrective action but not the CAMU rule. Today's proposed amendments are intended to make clearer the Agency's general minimum expectations for CAMUs and to make the CAMU process more consistent and predictable, as well as more explicit for the public.

DATES: EPA will accept public comment on this proposed rule until October 23, 2000.

ADDRESSES: Those persons wishing to submit public comments must send an original and two copies of their comments referencing EPA docket number F–2000–ACAP–FFFFF to: RCRA Docket Information Center (5305W), U.S. Environmental Protection Agency Headquarters (EPA)(5305G), Ariel Rios Building, 1200 Pennsylvania Avenue NW., Washington, DC, 20460. Hand deliveries of comments, including courier, postal and non-postal express deliveries, should be made to the Arlington, VA address below.

Comments may also be submitted electronically through the Internet to: rcra-docket@epa.gov. Comments in electronic format should also identify the docket number F–2000–ACAP–FFFFF. All electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Commenters should not submit electronically any confidential business information (CBI). An original and two copies of CBI must be submitted under separate cover to: RCRA CBI Document Control Officer, Office of Solid Waste (5305W), U.S. EPA, Ariel Rios Building, 1200 Pennsylvania Avenue NW., Washington, DC 20460.

Public comments and supporting materials are available for viewing in the RCRA Docket Information Center (RIC), located at Crystal Gateway I Building, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, it is recommended that the public make an appointment by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15 per page. The Proposed Rule is also available electronically. See the Supplemental Information section below for information on electronic access.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (hearing impaired) (800) 553–7672. In the Washington, DC metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For more detailed information on specific aspects of today's action, contact Bill Schoenborn, U.S. Environmental Protection Agency (5303W), Ariel Rios Building, 1200 Pennsylvania Ave., NW., Washington, DC 20460, at (703) 308–8483, or e-mail: *schoenborn.bill@epamail.epa.gov.*

SUPPLEMENTARY INFORMATION:

Customer Service

In developing the Proposed Rule, we tried to address the concerns of all our stakeholders. Your comments will help us improve this regulatory action. We invite you to provide different views on options we propose, new approaches we have not considered, new data, information on how this regulatory action may affect you, or other relevant information. Your comments will be most effective if you follow the suggestions below:

- Explain your views as clearly as possible and why you feel that way.
- Provide solid technical and cost data to support your views.
- If you estimate potential costs, explain how you arrived at the estimate.
- Tell us which parts you support, as well as those you disagree with.
- Provide specific examples to illustrate your concerns.
- Offer specific alternatives.
- Refer your comments to specific sections of the notice.
- Make sure to submit your comments by the deadline in this notice.
- Be sure to include the proposal name, date, and docket number with your comments.
- Copies of today's proposal, titled Amendments to the Corrective Action Management Unit Rule, are available for inspection and copying at the EPA Headquarters library, at the RCRA Docket (RIC) office identified in **ADDRESSES** above, at all EPA Regional Office libraries, and in electronic format at the following EPA Web site: http://www.epa.gov/osw/special.htm. Printed copies of the proposal and related documents can also be obtained by calling the RCRA/Superfund Hotline at (800) 424–9346 or (703) 412–9810.

The index and some of the supporting materials are available on the Internet. Follow these instructions to access the information electronically:

WWW: *http://www.epa.gov/epaoswer/....*
FTP: *ftp.epa.gov*
Login: anonymous
Password: Your internet address
Files are located in /pub/epaoswer.

The official record for this action will be kept in paper form. Accordingly, EPA will transfer all comments received electronically into paper form and place them in the official record, which will also include all comments submitted directly in writing. The official record is the paper record maintained at the address in **ADDRESSES** at the beginning of this document.

EPA responses to comments, whether the comments are written or electronic, will be published in a notice in the **Federal Register** or in a response to comments document placed in the official record for this proposed rulemaking. EPA will not immediately reply to commenters electronically other than to seek clarification of electronic comments that may be garbled in transmission or during conversion to paper form.

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I. Authority

These regulations are proposed under the authority of sections 1006, 2002(a), 3004, 3005(c), 3007 and 3008(h) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984.

II. Background

A. Purpose and Context for Today's Proposed Rule

Since 1980, the Environmental Protection Agency (EPA) has developed a comprehensive regulatory framework under Subtitle C of RCRA that governs the identification, generation, transportation, treatment, storage, and disposal of hazardous wastes. These regulations center around two broad objectives: to prevent releases of hazardous wastes and constituents through a comprehensive set of management requirements (commonly referred to as hazardous waste ''cradle-to-grave'' requirements); and to minimize the generation of hazardous wastes and to promote their legitimate reuse and recycling. The hazardous waste regulations constitute minimum national standards for management of hazardous wastes and are generally oriented towards ''prevention'' of releases, rather than ''response'' to releases. In general, they apply consistently to all hazardous wastes, regardless of where or how generated, and to all hazardous waste management facilities, regardless of how much government oversight any given facility receives. In order to ensure an adequate level of protection nationally, the RCRA regulations have been conservatively designed to ensure proper management of hazardous wastes over a range of waste types, environmental conditions, management scenarios, and operational contingencies.

During cleanup of contaminated sites,[1] the regulations for the management of hazardous wastes apply to cleanup wastes and contaminated media that meet the definition of hazardous waste under RCRA. EPA has long recognized that the incentives and objectives for the hazardous waste prevention and cleanup programs differ fundamentally. For example, the stringent treatment requirements established by the RCRA land disposal restrictions (LDRs) have encouraged many generators to reduce the amount of hazardous waste they generate. On the other hand, when the LDR requirements are applied in the context of site cleanup, they can act as a disincentive to excavate wastes for cleanup. Similarly, the hazardous waste unit standards and permitting requirements can also act as disincentives to cleanup. Finally, there may be significant physical and chemical differences between ''as-generated'' wastes and cleanup wastes that affect their ability to undergo treatment.

It has been EPA's experience, therefore, that application of the regulations developed for as-generated industrial hazardous wastes, in particular LDRs and minimum technical requirements (MTRs), to cleanup wastes often presents remediation project managers with only two choices: to pursue the legal option of capping or treating cleanup wastes in place, thereby avoiding the LDR and certain other management requirements; or, excavating the cleanup waste and treating it to the full extent required by the LDR requirements and disposing of the waste in compliance with the as-generated hazardous waste disposal unit requirements. EPA has found that this situation has created an incentive at certain cleanup sites to select less permanent remedies that involve leaving the cleanup wastes in place. (For a fuller discussion of this issue, see the preamble discussions accompanying the Land Disposal Restrictions Phase IV rule, 63 FR 28556, 28603–28604 (May 26, 1998), Clarification of the LDR Treatment Variance Standard (the ''environmentally inappropriate'' variance, § 268.44(h)(2)(ii), 62 FR 64504, 64505–64506 (December 5, 1997)), and the HWIR-Media rule, 63 FR 65874, 65876–65878 (November 30, 1998), and sources cited therein).

EPA has developed extensive policies and regulations to address the special circumstances of hazardous cleanup wastes. These regulations and policies are designed to preserve RCRA's goal of protectiveness, while providing oversight agencies the flexibility and tools necessary to develop effective site-specific remedies, including remedial alternatives that are intermediate between the two choices described above (*i.e.,* between leaving cleanup wastes in place or managing such wastes as if they were as-generated industrial wastes). These include, among other policies and regulations, the 1993 ''Corrective Action Management Unit'' (CAMU) regulation, which is the subject of today's proposed amendments; the ''area of contamination'' policy; the ''contained-in'' policy; the ''phase IV'' treatment standards for contaminated soils; and the regulations for ''temporary units.'' Descriptions of these and other policies and regulations, including references, are included in the October, 1998 Memorandum, ''Management of Remediation Waste Under RCRA,'' EPA530–F–98–026, which is in the docket for today's proposed rule. In addition, since this memorandum was issued, EPA promulgated the HWIR-media rule, which addresses permitting and other issues related to management of hazardous remediation waste that results from cleanup actions (63 FR 65874 (November 30, 1998)), and the post-closure rule, which encourages the integration of RCRA closure and cleanup actions (63 FR 56710 (October 22, 1998)). The HWIR-media rule is described later in this section.

Today's proposed amendments to the CAMU rule would leave these policies and regulations untouched, except, of course, the provisions of the CAMU rule being amended.

1. Corrective Action Management Units (CAMUs)

On February 16, 1993, EPA published final regulations for CAMUs (58 FR 8658). The CAMU rule provides considerable flexibility to EPA and implementing States to specify design, operating, and closure/post closure requirements for on-site units used for storage, treatment and disposal of hazardous wastes and media containing hazardous waste that are managed during cleanup. The CAMU rule sets forth decision criteria for the designation of CAMUs that are protective of human health and the environment. The CAMU rule defined wastes (''remediation wastes'') that would be eligible for management in a CAMU. Importantly, under the CAMU rule, consolidation or placement of remediation waste into an approved CAMU is not considered ''land disposal'' and therefore does not trigger RCRA land disposal restriction (LDR) requirements (§ 264.552(a)(1)). Thus, appropriate treatment requirements can be specified by the overseeing Agency on a site- and waste-specific basis. In addition, the CAMU rule provides that consolidation or placement of cleanup wastes into a CAMU does not trigger RCRA section 3004(o) minimum technology requirements (MTRs) (§ 264.552(a)(2)) for hazardous waste unit design. As a result, the CAMU rules provide significant regulatory relief and flexibility for cleanup.

The CAMU rule has received broad support from many affected stakeholders. At the time of promulgation of the CAMU rule, however, the rule was challenged. On May 14, 1993, a petition for review was filed with the U.S. Court of Appeals for the District of Columbia Circuit. Environmental Defense Fund v. EPA, No. 93–1316 (D.C. Cir.). The Petitioners were concerned, among other things, with the provisions stating that LDRs, MTRs and other Part 264 and 265 RCRA

[1] The term ''site'' is used in this proposal as a general term connoting properties where cleanups are taking place.

unit requirements do not apply to CAMUs.

Prior to this challenge to the CAMU rule, EPA created the Hazardous Waste Identification Rule (HWIR) Federal Advisory Committee (discussed in the proposed Requirements for Management of Hazardous Contaminated Media (HWIR-Media) preamble, 61 FR 18780 (April 29, 1996)). As part of the dialogue that prefaced the creation of this committee, which included representatives from environmental groups, regulated industry, the waste management industry, states and EPA, EPA agreed to re-examine the CAMU regulations in the context of developing regulations (the HWIR-Media regulations) to address the management of hazardous remediation waste during cleanups. The litigation to the CAMU rule was stayed pending the outcome of this rulemaking process. In April 1996, EPA proposed the HWIR-media rule, which was a comprehensive proposal addressing the management of hazardous remediation waste. In this notice, EPA proposed to withdraw the 1993 CAMU rule with the reasoning that the proposed rule would offer much of the same flexibility as that available under the CAMU rule, but with a more comprehensive and detailed approach to addressing remediation waste issues.

On November 30, 1998, EPA published the final HWIR-Media rule (63 FR 65874). Because, among other things, of fundamental disagreement with the proposal expressed by various commenters, and concerns expressed by EPA after considering stakeholder comments, EPA decided to promulgate only selected elements of the HWIR-media proposal, rather than a more comprehensive set of standards. In addition, because the specific provisions finalized in the HWIR-media rule do not address the basic concerns that the 1993 CAMU rule addresses, EPA chose to leave the CAMU regulations in place, rather than to withdraw the regulations, as had been proposed.

Following publication of the final HWIR-media rule and EPA's decision not to withdraw the 1993 CAMU rule, EPA and the Petitioners to the CAMU rule entered into discussions in an effort to settle the CAMU litigation. During these discussions, EPA obtained feedback from the regulated community and the states to help inform the settlement process. On February 11, 2000, EPA and the Petitioners reached settlement on the CAMU litigation (the settlement was filed with the U.S. Court of Appeals for the District of Columbia Circuit, and is included in the docket for today's rulemaking). The settlement calls for EPA to propose amendments to the existing CAMU rule by August 7, 2000, and to issue a final rule by October 8, 2001. While not part of the settlement, EPA expressed its intentions at the time of settlement to include in the proposal provisions for expediting state authorization of these amendments (see February 11, 2000 ''Note to Correspondents,'' in the docket for today's rule). Potential amendments to the 1993 rule outlined in the settlement include treatment and design standards specific to CAMUs and the wastes therein and modifications to the definition of wastes that are eligible for management in CAMUs.

Following the approaches outlined in the settlement,[2] EPA is proposing in today's notice to amend the 1993 CAMU rule. This notice seeks comment only on the amendments proposed today; EPA is not reopening for comment any aspects of the 1993 rule not addressed by today's proposed amendments (*e.g.*, the provisions of the rule stating that wastes placed in CAMUs are not subject to LDRs and that CAMUs are not units subject to MTRs). EPA will carefully consider any comments that are submitted in response to today's proposal. Procedures for submitting comments to EPA are described above in the section titled **ADDRESSES**.

B. Why Is EPA Proposing Today's Amendments?

Today's proposed amendments would more specifically define the wastes eligible for management in CAMUs, establish minimum treatment requirements for such wastes, and set minimum technical standards for CAMUs. This is a departure from the 1993 rule, which took a more ''performance-based'' approach to addressing these issues, and left the details of what was necessary to protect human health and the environment to the Regional Administrator to determine based on site-specific circumstances. It was EPA's view in 1993 that this approach would bring more efficiency and speed to cleanups by replacing the more prescriptive RCRA requirements designed primarily for ''process'' wastes (also known as ''as-generated'' wastes) with an approach that allows site-specific decision-making regarding treatment and technical requirements for cleanup wastes[3] managed in on-site units. EPA chose not to impose prescriptive standards tailored to cleanup wastes managed in CAMUs out of a concern that individual sites might present circumstances not contemplated at the time of the promulgation of the rule. EPA feared that such standards might therefore pose a barrier to sensible protective cleanup solutions, engendering the kinds of disincentives to cleanup that the CAMU rule was designed to address.

The Agency believes that the CAMU rule has worked well in practice, resulting in remedies that are protective of human health and the environment. However, as discussed above, the Agency was sued on the rule upon issuance. As described above, at the time the CAMU rule was promulgated and the Petition for Review filed, the Agency was engaged in the HWIR-Media process aimed at developing a more comprehensive regulatory approach to addressing how cleanup wastes should be regulated under RCRA (see discussion of HWIR-Media FACA process and rulemaking above). EPA and Petitioners therefore agreed it was reasonable to stay the CAMU litigation pending the outcome of that process. As explained above, the HWIR-Media rule did not result in the type of comprehensive RCRA regulatory reform that would have eliminated the need for the CAMU rule; therefore, the Agency was faced with the decision of whether to proceed with the CAMU litigation or enter into settlement discussions more directly focused on the CAMU rule.

The Agency decided to enter into settlement discussions and ultimately entered into a settlement agreement that forms the basis for today's amendments and will potentially resolve Petitioner's claims. EPA's decision to enter this settlement was based on a desire to avoid the risks of litigation (and the great disruption such litigation could mean for existing and planned cleanups) and to remove the ''litigation cloud'' that has deterred the use of CAMUs in the field,[4] as well as on a

[2] Note that this settlement agreement does not require that the Agency promulgate today's proposed amendments as final regulations. Instead, it provides that the Petitioners agree to seek dismissal of their petitions for review if (among other things) the Agency finalizes amendments of substantially the same substance as those outlined in the settlement agreement.

[3] The term ''cleanup waste'' is used in today's proposal to express the general concept of wastes that are derived from cleanup. It is not meant as a term of art, nor is it meant to supersede the terms ''remediation waste,'' which is defined at § 260.10, or ''CAMU-eligible waste,'' which is proposed in today's notice. EPA uses this term in today's preamble when using either ''remediation waste'' or ''CAMU-eligible waste'' would be confusing in the discussion context, given the defined nature of these terms.

[4] See General Accounting Office report, ''Remediation Waste Requirements Can Increase the Time and Cost of Cleanups,'' October, 1997, which is included in the docket for today's rule and

Continued

belief that the proposals negotiated during the settlement process were reasonable.

EPA believes that the approach set out in today's proposed rule provides a sound framework for CAMU decision-making. The Agency recognizes the benefits of including minimum standards in a rule of this nature; *i.e.,* such standards can make the process more consistent nationally, and the results more predictable, as well as more explicit for the public. Such standards can also make implementation of the rule less vulnerable to mistakes or abuse. However, the Agency did not want to include more detailed standards if they would result in potentially limiting the usefulness of the rule, thereby delaying or inhibiting cleanups. This is the concern that led the Agency to adopt the largely performance-based rules in 1993.

The Agency believes the proposed amendments achieve an appropriate balance. The detail added is sufficient for providing minimum national standards that realize the benefits outlined above, but is not overly prescriptive such that it would so minimize site-specific flexibility that the CAMU rule would no longer act to remove the disincentives to cleanup that can be created by application of RCRA's land disposal restrictions and minimum technical requirements. Today's proposal reflects the fact that eight years into the CAMU program, and 16 years into the corrective action program, the Agency is now in a much better position than it was in 1993 to define regulatory minimums for hazardous cleanup waste management units (that are used for wastes regulated as hazardous under RCRA) that would result in the benefits outlined above, without sacrificing the site-specific flexibility that is often critical in the cleanup scenario.

In developing today's proposal, and in negotiating the CAMU settlement, the Agency was able to analyze many of the CAMUs that have been implemented over the past eight years both by reviewing the records for such CAMUs and by talking with the Agency staff responsible for overseeing the CAMU decisions, as well as with representatives from states and industry that have experience in both cleanup and implementing CAMUs (the section in today's preamble titled, ''Planning and Regulatory Review Executive Order 12866'' describes the sample of CAMUs used in the analysis of existing CAMUs). The Agency then was able to measure this information against potential standards for applicability at all CAMUs, and against standards that are already in wide use in other waste management unit programs (*e.g.,* the Subtitle C and D programs). The Agency was able to tailor potential standards for CAMUs by identifying circumstances where it might be appropriate to depart from potential minimum standards either on a national or site-specific basis. Identification of these circumstances where flexibility could be built into selection of the appropriate standards was critical to the Agency. EPA believes it is crucial to ensure that any minimum national standards be consistent with the thinking processes of site decision makers who have implemented the existing CAMU rule so as not to recreate the disincentives to cleanup that the Agency sought to remove with the 1993 rule. In addition, in considering potential standards, EPA was mindful of the high degree of oversight associated with CAMU decisions. As explained more fully below, as a result of this process, the Agency believes that it has identified minimum standards that are appropriate for most CAMUs and that accommodate the site-specific complexities encountered at cleanup sites. Indeed, EPA believes that the vast majority of the existing CAMUs could have been approved with few or no changes under today's proposed revisions. The Agency therefore believes that if the amendments are finalized as proposed, the CAMU rule will continue to play an important role in removing disincentives to cleanup that can be caused by application of RCRA's hazardous waste management requirements for as-generated wastes to cleanup wastes, while making the CAMU process more consistent and predictable, as well as more explicit for the public.

The Agency specifically seeks comment on the Agency's conclusions regarding whether the proposed rules would realize the benefits of increased regulatory detail without reinstating the disincentives to cleanup the CAMU rule was originally meant to address. In particular, the Agency seeks comment on the Agency's view that the vast majority of existing CAMUs could have been approved with few or no changes under today's proposed revisions (see the ''Economic Analysis of the Proposed Amendments to the CAMU Rule,'' and the ''CAMU Site Background Document,'' available in today's docket).

C. Approach to Publishing Today's Proposed Amendments

In proposing today's amendments, the Agency has published the entire text of the CAMU rule as it would appear if today's amendments were finalized. EPA took this approach for the sake of clarity. EPA recognizes that it could be difficult for readers of today's proposal to construct the complete rule, as amended by today's proposal, if EPA were simply to publish the amendments by themselves, as EPA typically does when it proposes to modify existing regulations. In addition, to further aid the reader, the Agency has placed a ''redline/strikeout'' version of the CAMU regulations in the docket for today's rulemaking. This document indicates exactly where changes to the current rule are being proposed.

EPA believes this approach to publishing today's regulatory amendments will be clearer than simply publishing the proposed amendments. However, it is important to note that EPA is not seeking comment on CAMU regulatory provisions that are simply repeated from the 1993 rule and are not subject to potential modification by today's proposed amendments.

Note that in many cases, the Agency proposes to incorporate, with appropriate changes, existing requirements from other parts of the RCRA regulations into the CAMU rule. In reviewing today's proposal, commenters may wish to examine the preambles and other supporting materials in the rulemaking dockets for those requirements to help determine whether such existing requirements make sense for the CAMU rule.

III. Section By Section Analysis

A. Grandfathering CAMUs (§ 264.550)

EPA is proposing provisions in today's notice that would allow certain CAMUs to continue to be implemented pursuant to the current rules under which they were approved or planned (*i.e.,* such CAMUs would be ''grandfathered''). Grandfathering of CAMUs is discussed in detail in Section J of today's preamble. EPA has included this discussion at the end of the section by section analysis in order to ensure that readers of today's proposal have the proper context for these proposed provisions.

B. Eligibility of Wastes for Management in CAMUs (§ 264.552(a))

In today's rule, EPA is proposing to modify the regulation that defines which wastes may be managed in a CAMU. Under the current CAMU rule, the definition of ''remediation waste'' at § 260.10 defines the types of wastes that may be managed in a CAMU. This definition (originally promulgated in the 1993 CAMU rule and modified in the

discussed in HWIR-Media rule preamble at 63 FR 65874, 65921 (November 30, 1998).

HWIR-media rule (63 FR 65874 (November 30, 1998)) also serves as the definition for wastes that may be managed pursuant to a Remedial Action Plan (or ''RAP'') (under Part 270, Subpart H), that may be stored in a staging pile (§ 264.554), or that are subject to a site-specific treatment variance from the land disposal restriction standards under § 268.44(h)(2)(ii) (the ''environmentally inappropriate'' variance).

EPA is proposing to modify the definition governing the types of wastes that can be managed in a CAMU, and is not proposing to change, or to otherwise take comment on, the definition of remediation waste as it is applied outside of the CAMU rule. To avoid any confusion on this issue, EPA is proposing to change the name of waste eligible for management in CAMUs from ''remediation waste'' to ''CAMU-eligible waste,'' and to include the definition of CAMU-eligible waste in the CAMU regulations at § 264.552. Note that for CAMUs that would be subject to today's proposed amendments (*i.e.,* that are not grandfathered), EPA is proposing a conforming change to the definition of corrective action management unit currently in § 260.10, changing ''remediation wastes'' to ''CAMU-eligible wastes'' such that the definition would read as follows: ''Corrective action management unit (CAMU) means an area within a facility that is used only for managing CAMU-eligible wastes for implementing corrective action or cleanup at the facility.'' In addition, EPA is proposing to remove this definition from § 260.10 and to place it directly in the CAMU regulations at § 264.552(a). This change is discussed in more detail in the section below on ''Conforming Changes.''

EPA is proposing three changes to the existing CAMU rule that relate to what materials may be managed in CAMUs: (1) Clarifying regulatory language to better distinguish between as-generated and cleanup wastes; (2) a provision preventing certain waste in containers and other non-land based units from being managed in CAMUs; and, (3) a provision allowing non-hazardous as-generated wastes to be placed in CAMUs when they are used to facilitate treatment or the performance of the CAMU.

While the first change listed above is a regulatory change to the specific definition of CAMU-eligible wastes, it is intended merely as a clarification of how EPA generally distinguishes between as-generated versus cleanup wastes. It does not represent a departure from how EPA has generally distinguished or will distinguish between these two categories of wastes in other contexts (*i.e.,* the distinction being made in today's proposal generally holds true in the context of the current remediation waste definition). Conversely, the second proposed regulatory change listed above results in a departure from current definitions (under the 1993 CAMU rule) and interpretations, and narrows the universe of cleanup wastes that are eligible for management in a CAMU. As a result of the second change, the remediation waste definition would be broader than the proposed CAMU-eligible waste definition. The third proposed regulatory change is necessary to address an effect that would be caused by the first change described above—without the third proposed change, a current practice involving the use of non-hazardous as-generated waste during cleanup would be prevented. Each of these proposed changes is discussed below.

1. ''As-Generated'' vs. ''Cleanup'' Wastes.

The existing regulatory definition of ''remediation waste'' in § 260.10, as amended in the HWIR-media rule (63 FR 65874 (November 30, 1998)), limits remediation waste to wastes, media and debris that ''are managed for implementing cleanup.'' The preamble to the 1993 rule explains what was generally meant by this definition: ''[t]oday's definition of remediation waste excludes ''new'' or as-generated wastes (either hazardous or non-hazardous) that are generated from ongoing industrial operations at a facility'' (58 FR 8658, 8664 (February 16, 1993). EPA believes that the intent of this definition, particularly when read in conjunction with the 1993 preamble discussion outlining how the rule generally addresses ''as-generated'' wastes, is very clear: remediation waste includes only wastes that are managed for the purpose of cleanups, and CAMUs thus cannot generally be used to manage ''as-generated'' wastes (which, because they are process wastes, are not generally ''managed for implementing cleanup,'' but are typically managed for the purposes of ultimate disposal). These as-generated wastes are also referred to as ''new'' or ''process'' wastes. In response to requests that the current definition be clarified to better reflect the intent to distinguish between as-generated and cleanup wastes, EPA is proposing to add the following clarifying language from the preamble of the 1993 rule, quoted above, to the regulatory definition of CAMU-eligible waste: ''As-generated wastes (either hazardous or non-hazardous) from ongoing industrial operations at a site are not CAMU-eligible wastes.'' As discussed below, EPA is also proposing certain limited exceptions from this new general prohibition in the regulatory language to preserve legitimate cleanup practices that would otherwise be eliminated by adding this language to the regulation. More specifically, EPA is proposing to allow an exception to be made when non-hazardous as-generated wastes are placed in a CAMU where such waste is being used to facilitate treatment or the performance of a CAMU.

The Agency does not intend for this additional language to result in any change in how the Agency currently distinguishes between as-generated and ''cleanup'' waste (for purposes of a CAMU determination, or remediation waste determination made for RAPs, staging piles or in use of the ''environmentally inappropriate'' LDR treatment variance); it is simply an attempt to better define the original intent of the regulations in the regulatory language itself. ''As-generated'' continues to have the meaning that it did in 1993. For example, hazardous wastes from ongoing industrial processes managed in a routinely operating hazardous waste landfill would be ''as generated'' wastes. Soil that has become contaminated by leachate from this landfill, however, would be CAMU-eligible because it is not ''as-generated'' waste. Similarly, EPA has not changed what the Agency means by ''from ongoing industrial operations.'' This phrase includes not only wastes produced during commercial operations, but also any wastes that are produced during the management of such wastes. For example, hazardous sludges periodically removed from Subtitle C regulated surface impoundments (*e.g.,* during normal waste management routines) are considered ''from ongoing industrial operations,'' not wastes from cleanup, and therefore would not be ''CAMU-eligible.''

EPA believes that placement of the 1993 preamble text into the regulations will make the distinction between as-generated and cleanup wastes clearer. This proposed amendment inserts the existing 1993 CAMU preamble language directly into the regulation with minor edits,[5] preserving and clarifying the

[5] The Agency did not include the word ''new,'' as in ''new or as-generated'' that appears in the preamble language at issue because it is redundant. The Agency also added the phrase ''are not CAMU-eligible'' to the end of the preamble phrase to

Continued

intent of the original definition. In today's proposal, EPA is seeking comment on the appropriateness of moving this particular preamble language into the rule, but is not reopening for comment the issue of whether CAMUs should routinely be used for the treatment or disposal of as-generated wastes. Today's amendments would also not change the eligibility of non-hazardous cleanup wastes for management in a CAMU'such wastes would remain CAMU-eligible.

As stated above, EPA seeks comment on the addition of this 1993 preamble to the CAMU regulation itself. In particular, the Agency requests comment on whether the terms ''as-generated waste'' and ''from ongoing industrial operations at a site'' are helpful in clarifying what wastes would not be considered ''managed for implementing cleanup.'' The Agency also requests comment on whether moving such language from preamble to the regulatory definition in the Code of Federal Regulations would have any unintended effects. In other words, would moving this preamble statement describing what types of wastes will not generally be considered ''managed for implementing cleanup'' into the regulatory language eliminate actual or potential practices where it might be an appropriate cleanup approach to place as-generated wastes in a CAMU? EPA has identified and addressed one such circumstance, described more fully below; that is where nonhazardous as-generated wastes are used to facilitate treatment or the performance of the CAMU. Are there other such circumstances? For example, the Agency limited the one circumstance provided for in today's proposal to nonhazardous as-generated waste, because that was the only common, legitimate practice brought to its attention during discussions with stakeholders. Are there circumstances where hazardous as-generated wastes are also legitimately used during cleanup? In arguing that the Agency should provide for certain practices, the Agency asks that commenters also state how such practices should be addressed in the final rule. For example, should the Agency provide a specific regulatory exception to cover the circumstance?

2. Wastes Managed During Closure

During the course of the Agency's discussions with stakeholders, it became apparent that there is a need for further guidance on when wastes associated with closure of non-permanent hazardous waste units are ''managed for implementing cleanup'' and therefore eligible for management in a CAMU. In the 1993 preamble, the Agency clearly indicated that some wastes managed during RCRA closure of land-disposal units would be eligible for management in a CAMU (58 FR 8658, 8666 (February 16, 1993)). That discussion was premised on the Agency's view that waste removed during RCRA closure at closed or closing permanent land disposal units are wastes ''managed for implementing cleanup.'' ''Closed or closing'' units are those that have received their final volume of waste. ''Permanent land disposal units'' are those for which the regulations provide a closure in place option (*e.g.,* landfills, surface impoundments and land treatment units). In the case of permanent disposal units, EPA considers closure by removal to be cleanup, because the regulations provide an option for closure with wastes in place. In addition, the Agency believes that the ability to place such wastes in CAMUs promotes the Agency's objective of encouraging the removal and/or treatment of wastes during closure of RCRA units. EPA believes that the CAMU regulations provide an incentive for companies to manage such wastes as part of a cleanup, rather than to leave the wastes in place, where appropriate.

Waste ''managed for implementing cleanup,'' on the other hand, does not typically include waste removed during RCRA closure of non-permanent land-based units, such as waste piles. EPA does not generally consider closure of a waste pile or other non-permanent land-based unit to be ''cleanup.'' Removal of wastes from waste piles and from similar land-based storage units is part of the normal course of operation of the unit; these types of units are not intended as the final resting place for wastes. Therefore, EPA believes it would typically be inappropriate to consider removal of wastes from these non-permanent land-based units to be ''cleanup.'' ''Typically'' is intended to indicate the Agency's ability, for example, at abandoned facilities, to place waste found in old piles or similar units in a CAMU, because once they are abandoned, management of wastes they contain is for the purpose of implementing a cleanup.

3. Wastes in Intact or Substantially Intact Containers, Tanks, or Other Non-Land-Based Units (§ 264.552)

EPA is proposing at § 264.552(a)(1)(ii) to further modify the regulations defining the wastes that are eligible for management in a CAMU. This provision would prohibit management in a CAMU of wastes that would otherwise meet the description in § 264.552(a)(1)(i) (*i.e.,* they are materials ''managed for implementing cleanup'') but are found during cleanup in intact or substantially intact containers, tanks, or other non-land-based units, with certain exceptions that are described below. An example of an ''other non-land-based unit'' would be a containment building under Part 264, Subpart DD or Part 265, Subpart DD. Under today's proposal, neither these containers, tanks or other non-land-based units, nor the wastes in them, would be eligible for management in CAMUs. ''Found during cleanup'' is meant to refer to wastes being addressed in the context of cleanup, as opposed to as-generated waste that may also be stored at a site undergoing cleanup.

The issue of whether CAMUs should be used to manage containerized waste that would otherwise be considered ''managed for implementing cleanup'' (*e.g.,* abandoned drums) was raised during discussions with stakeholders. These stakeholders gave the opinion that because such wastes are easily dealt with under Subtitle C requirements, they should not be permitted to be managed in a CAMU. EPA is proposing today's amendment because the Agency believes that these are not the types of wastes for which RCRA is likely to produce the barriers addressed by the CAMU rule. In addition to being easily managed under Subtitle C's hazardous waste requirements, such units do not typically contain the large volumes of waste typically found in land-based units, and *in situ* management is not likely to be a viable remediation option. The Agency also believes that, generally, overseeing agencies would not approve direct disposal of substantially intact drums in a CAMU. In most cases, such drums would be sent off-site for treatment and disposal because cleanup contractors are generally prepared to address drums by removing and packaging them for off-site treatment or disposal. In fact, the Agency's analyses of EPA's CAMUs to date show no evidence that containerized waste was managed in CAMUs (see the ''CAMU Site Background Document,'' available in today's docket). The Agency's conclusions that containerized waste is unlikely to be managed in CAMUs was also echoed by some members of the regulatory and regulated communities during the stakeholder discussions. The Agency seeks comment its conclusions regarding the anticipated management of containerized waste during cleanups.

EPA is proposing that this exclusion from CAMU eligibility for hazardous

establish the proper context for the proposed regulatory text.

wastes found during cleanup in containers, tanks, or other non-land-based units be limited to ''intact'' or ''substantially intact'' units only. Wastes found during cleanup in crumbling or unstable drums, containers, and other non-land based units often cannot be readily managed due to the likelihood of a release from the unstable unit, and should be allowed to be managed in CAMUs. (EPA anticipates, however, that in some cases, the decision will be made site-specifically to manage such unstable units offsite, rather than in a CAMU.) The general principle guiding determinations of what is ''substantially intact'' would be that ''substantially intact'' units, containers and tanks can be removed without likelihood of a significant release; any minor imperfections present would not prevent a unit from being considered ''intact.''

EPA is proposing two exceptions to the exclusion for CAMU-eligibility for substantially intact or intact containers, tanks, or other non-land-based units. The first exception is for cleanup wastes that are first placed in the tanks, containers or non-land-based units as part of cleanup. This provision is necessary to make clear that, if cleanup wastes are removed from the land and placed temporarily in such units, they would not become ineligible for management in a CAMU.

The second exception is specifically for buried containers (not tanks or other units) that are excavated during the course of cleanup. Such wastes cannot always be easily managed in accordance with applicable Subtitle C requirements. In the case of above-ground containers, the integrity of the containers can be generally assessed by visual inspection, and, if they are ''substantially intact,'' the containers will generally either already be in a state to be transported or the waste within them can easily be handled in accordance with Subtitle C requirements. In contrast, buried containers will typically be much more difficult to assess and manage than those found above ground. This provision, by allowing for the disposal in CAMUs of buried containers that are excavated and managed as part of the cleanup, would ensure that today's amendments regarding containers would not create disincentives to excavate the container and its contents. If such containers, and the wastes in them, are disposed in a CAMU, they would of course be subject to all of the CAMU requirements, including today's proposed prohibition against disposal of liquids in CAMUs (discussed in more detail below). As a matter of practice, in many cases, EPA anticipates that the remedy decision for the site will include off-site management, under the full Subtitle C requirements, of excavated containers containing hazardous wastes.

EPA seeks comment on whether the exception proposed for buried containers should also apply to buried tanks that are excavated during the course of cleanup. Buried tanks containing wastes or waste residue are sometimes encountered during the course of excavating contaminated areas or are found disposed in landfills. The practical difficulties associated with assessing the integrity of buried containers and managing the waste contained in such containers can also apply to buried tanks. The ability to manage, in a CAMU, wastes from buried tanks found in the ground or in landfills during cleanup, would ensure that today's proposed amendments concerning tanks would not create disincentives to excavate the tanks, and would allow for the potential treatment of the wastes in a CAMU without having to meet the full subtitle C management requirements for as-generated wastes. One reason for considering this additional exception is that EPA believes it could be difficult in burial situations to always distinguish between tanks and containers; this is particularly so given the diversity of structures that meet the RCRA definition of ''tank.'' Including tanks as well as containers in this exception would remove this potential practical difficulty. Under this option, EPA would not intend that the contents of underground tanks being used to store waste or products would be CAMU-eligible. The Agency seeks comment on these ideas, including whether regulators can readily determine if specific tanks are being used to store waste or products. The Agency seeks general comment on whether the exception proposed for buried containers should also apply to buried tanks that are excavated during the course of cleanup, and whether the situations described above regarding buried tanks excavated during a cleanup are encountered often enough to warrant including them in the buried container exception.

EPA intends that the CAMU framework would provide for the cleanup of ''historic wastes,'' and that today's amendments would not reinstate the disincentives to cleanup of historic wastes addressed by the 1993 CAMU rulemaking. During stakeholder discussions, members of the regulated community asked for clarification on the eligibility of historic wastes left onsite at old facilities in units that arguably could meet the definition of either a non-land-based unit or a ''tank.''

Under the proposed amendments, a historic waste would be CAMU-eligible if it were found in a land-based unit. The most prominent examples, that EPA is aware of, of historic wastes that would serve as a good example of how this amended provision would work at historic sites are ''gas holders'' at manufactured coal gas production facilities that operated before 1950 (information on ''manufactured gas plant'' (MGP) sites is included in the docket for today's rule).[6] In most cases, such historic units would be considered land-based units under RCRA (*e.g.,* old building foundations, which are analogous to concrete vaults) and the waste would be CAMU-eligible. EPA is also aware that some facilities have old units that have not been used in decades, that would arguably meet the definition of a tank, and therefore would potentially not be CAMU-eligible. If such a unit were a tank, the rules would require that the unit be assessed to determine whether it is substantially intact, before determining whether the waste is CAMU-eligible. In some cases, given the age, construction, and size of such units, it would be reasonable to assume that the units are not substantially intact. As a result, the wastes removed from these units would fit the exception described above and would be CAMU-eligible.

EPA seeks comment on all aspects of this proposed amendment. In particular, the Agency solicits comment on the general approach of excluding containers and other non-land based units managed during cleanup from CAMU-eligibility and whether the exceptions EPA is proposing are clear and make sense in light of commenters' experience.

4. Limited Use of ''As-Generated'' Waste in CAMUs

CAMUs are intended to be used for the management of cleanup wastes. As a general matter, EPA does not believe it is appropriate for as-generated wastes to be managed in CAMUs; this applies for non-hazardous, as well as hazardous, as-generated waste (58 FR 8658, 8664 (February 16, 1993)). However, there are accepted practices where non-hazardous as-generated wastes are used in cleanup remedies. As a result of today's

[6] EPA notes that the United States Court of Appeals for the District of Columbia Circuit recently vacated the TCLP rule as it applies to MGP wastes. *Ass'n of Battery Recyclers, Inc.* v. *U.S. EPA,* 208 F.3d 1047 (D.C. Cir. 2000). EPA retains this example (which was included in the settlement agreement) to address situations where MGP wastes are otherwise regulated as hazardous (*e.g.,* MGP wastes have been mixed with a listed hazardous waste) and because it continues to provide useful guidance for similar scenarios at non-MGP sites.

proposed amendments, EPA does not seek to preclude such practices in a CAMU.

Today's proposed amendment in the second sentence of § 264.552(a)(1)(i) adds regulatory language specifically prohibiting placement of as-generated wastes in CAMUs. EPA does not intend, by adding this language to the regulations, to prohibit the use of non-hazardous as-generated waste in a CAMU when it is legitimately being managed in a CAMU to facilitate treatment or the performance of the CAMU. Therefore, EPA proposes the amendment at § 264.552(a)(1)(iii) which reads that ''notwithstanding paragraph (a)(1)(i) of this section, where appropriate, as-generated non-hazardous waste may be placed in a CAMU where such waste is being used to facilitate treatment or the performance of the CAMU.''

The Agency is aware of two common practices that use non-hazardous as-generated wastes to facilitate treatment of cleanup wastes or facilitate the performance of disposal units. The first practice is to use agents such as fly ash or cement kiln dust (CKD) as a stabilization agent to reduce leaching of metals from metal-bearing wastes. The second practice is to use similar agents to provide increased structural stability for wastes, such as sludges obtained from remediation, that do not have sufficient strength to bear their own weight, or the additional weight of a cap, without risk of failure.[7] These practices associated with use of cement kiln dust, fly ash and coal combustion wastes are consistent with EPA's view in today's proposal of facilitating treatment or performance of the CAMU. The Agency seeks comment on today's proposed approach for addressing the use of as-generated non-hazardous wastes in CAMUS.

C. Discretionary Kickout (§ 264.552(a)(2))

RCRA Subtitle C regulations for as-generated wastes ensure that such wastes are handled according to stringent national standards that are designed to ensure protection of human health and the environment and that create significant incentives for process changes to minimize hazardous waste generation. Yet, as discussed above, these same requirements, when applied to existing contamination problems, can provide a strong incentive for leaving wastes in place or for selecting remedies that minimize regulation under Subtitle C. EPA believes that the CAMU regulations, including today's proposed amendments, remove disincentives for clean-ups and allow for implementation of protective remedies at cleanup sites.

It is EPA's intention that CAMUs continue to be a practical option for facilities undergoing cleanup. However, some stakeholders expressed concern that it is less expensive to manage wastes in CAMUs than to manage waste in accordance with as-generated waste requirements, and thus there is a potential incentive for facilities to mismanage as-generated wastes such that they subsequently become eligible for management in a CAMU. EPA does not want the CAMU regulations to create any incentives for non-compliance, whether the non-compliance is intentional to take advantage of alternate requirements in the CAMU rule, or is the result of careless management practices (which could, by example, thereby encourage others to ignore applicable requirements). EPA expects all facilities to be aware of the applicable regulations for managing as-generated wastes and to carefully adhere to those requirements. Therefore, EPA is proposing a ''kick-out'' provision as part of today's amendments. This kick-out provision would provide the Agency with discretion to disallow the management of CAMU-eligible wastes in a CAMU, in appropriate circumstances, as discussed below. EPA believes that this discretion would provide a balance between facilitating cleanups with CAMUs and maintaining incentives for waste minimization and proper waste management in the first instance.

Under today's proposal, the Regional Administrator would be permitted to consider using the kickout provision where there was prior non-compliance with fundamental waste management requirements that are designed to prevent or minimize releases of hazardous waste. Specifically, proposed § 264.552(a)(2) would provide that: ''the Regional Administrator may prohibit, where appropriate, the placement of waste in a CAMU where the Regional Administrator has or receives information that such wastes have not been managed in compliance with applicable land disposal treatment standards of Part 268, or applicable Part 264 or 265 unit design requirements, or that non-compliance with other applicable RCRA requirements likely contributed to the release of the waste.'' The word ''applicable'' before standards or requirements refers to the applicability of the regulations at the time of disposal of the wastes. ''Unit design requirements'' refers to substantive design standards, such as the tank design standards under § 264.192 or the design requirements for waste piles under § 264.251. Maintenance requirements, such as the owner/operator requirement to inspect tanks under § 264.195, are not ''unit design'' requirements. Therefore, a violation of maintenance requirements would be considered in the context of whether ''non-compliance with other applicable RCRA requirements likely contributed to the release of the waste.'' The standard of ''likely contribution'' is intended to address situations where the kickout is being considered for non-compliance with regulations other than the LDRs or unit design regulations.

In today's proposed kickout provision, EPA chose to include three areas where prior non-compliance with waste management requirements would allow the Regional Administrator to consider use of the kickout provision; specifically, land disposal restrictions, part 264 or 265 unit design requirements, and other RCRA requirements where noncompliance likely contributed to the release at issue. EPA addressed these three areas differently. EPA chose to include both the LDR and unit design provisions because they represent fundamental requirements that are aimed at preventing or minimizing releases of hazardous waste. They also represent provisions from which CAMUs provide potential relief. Regarding the third part of this provision (pertaining to ''other'' RCRA requirements), because the relationship between a release and non-compliance with other Subtitle C requirements may be less obvious, EPA chose to propose a different approach (which requires ''likely contribution'') to identifying other instances where the Regional Administrator may consider invoking the discretionary kickout.

As discussed above, this provision should help maintain the current incentives for waste minimization and proper waste management. However, this discretionary authority would not be exercised for each instance of non-compliance with the requirements listed in proposed § 264.552(a)(2); the Agency does not believe it would be appropriate

[7] EPA has recently proposed regulations which would classify CKD as hazardous waste under certain circumstances (64 FR 45632, August 20, 1999). As discussed in that proposal, EPA finds the use of CKD as a stabilizer or solidification agent to be beneficial for cleanups and would not regulate CKD wastes when they are used for such purposes. The proposed CKD regulations would not prevent, restrict, or regulate the use of CKD as a stabilizer or solidifying agent during RCRA cleanups under sections 3004(u), 3004(v), and 3004(h), or when the EPA Region, or, authorized State agency finds that the use of CKD in cleanups is protective of human health and the environment. EPA has also determined that no additional regulations are warranted for coal combustion wastes that are used beneficially other than for mine-filling (see 65 FR 32214, May 22, 2000).

to require the Regional Administrator to exclude such waste from management in a CAMU in all instances where there had been prior non-compliance. Under the proposed rule, in deciding whether to exercise the discretion to disallow management in a CAMU, the Agency would consider the significance of the violation, among other site-specific factors. In cases where the entity seeking the CAMU is not the same entity that mishandled the waste and is not affiliated with the entity that mishandled the waste, EPA would generally not exercise its discretion to disallow placement of those CAMU-eligible wastes in a CAMU.

The proposed provision states that the Regional Administrator may prohibit placement of wastes in the CAMU, under the discretionary kickout provision, when the Regional Administrator ''has or receives'' relevant information about how the waste has been handled. The Agency chose the phrase ''has or receives'' to reflect the common sources of EPA's information at sites that use CAMUs. The Agency routinely has information on the origin and management of cleanup wastes, obtained as part of the cleanup process as the facility approaches the point where a CAMU decision is being considered. For example, such information is typically available from permit applications, cleanup investigation reports, remedial workplans, enforcement actions, or from the general public. In addition, the Agency ''receives'' relevant information during the CAMU approval process. As discussed in the next section of today's preamble, EPA is proposing, in addition to what is already required at § 264.552(d), to add specific information requirements to the CAMU rule to make certain that EPA has sufficient information for making determinations as to whether wastes are CAMU-eligible and whether there is any apparent reason the Agency should disallow CAMU management. EPA seeks comment on today's proposed approach for addressing any potential incentives for mismanagement of as-generated wastes due to the CAMU rule.

D. Information Submission (§ 264.552(d))

The current general requirement for information submission, at § 264.552(d), requires the owner or operator to submit sufficient information to enable the Regional Administrator to designate a CAMU. EPA proposes modifying the existing information requirement under § 264.552(d) to include submission of the specific information listed under proposed § 264.552(d)(1–3). The specific information required would provide the Agency and the public with information on the circumstances surrounding the origin and subsequent management of the waste. The Agency would use this information for the purposes of deciding whether the waste is CAMU-eligible and whether such waste was mismanaged such that the ''kickout'' discretion should be considered.

The modifications in today's proposal are additions to the existing general requirement, and add three specific information submission requirements to directly address the proposed amendments pertaining to CAMU eligibility. EPA is proposing that specific information must be submitted (''unless not reasonably available'') on: ''(1) The origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal and/or release) [provision § 264.552(d)(1)]; (2) whether the waste was listed or identified as hazardous at the time of disposal and/or release [provision § 264.552(d)(2)]; and (3) whether the waste was subject to the land disposal requirements of Part 268 of this chapter at the time of disposal and/or release [provision § 264.552(d)(3)].'' EPA is not proposing in the regulations a specific level of detail associated with meeting this requirement. The necessary level of information would be determined by the overseeing agency on a site-specific basis, given the specific characteristics of the site and wastes. As explained above, EPA is proposing to retain the general information collection requirement at § 264.552(d), and the information submission required under this provision would not be limited to the three specific types of information required under these proposed amendments.

Proposed provision § 264.552(d)(1) would add a specific requirement for submission of information on the origin of the waste and its subsequent management, where such information is reasonably available (the concept of reasonable availability is discussed below). The proposed language specifically emphasizes waste origins, which is information the Agency needs to be able to distinguish between as-generated and cleanup wastes. EPA seeks to ensure, at all CAMUs, that reasonably available information on the history of the waste will be available to the Regional Administrator and the public so that CAMUs will be restricted to managing wastes resulting from cleanup.

The information that would be submitted in response to (d)(2) and (3) relates specifically to whether the waste was designated as hazardous and was subject to the land disposal restrictions at the time of disposal and/or release. Regarding (d)(2), the Agency would use the information provided to determine whether Subtitle C unit standards applied at the time of the release. EPA took a slightly different approach to (d)(3) because EPA believes that it would be appropriate for the owner/operator to submit information on LDR applicability, because the owner/operator would be most familiar with the circumstances of waste management and would be in the best position to explain whether the disposal and/or release was or was not subject to the land disposal restrictions. The information requested in proposed (d)(2) and (3) would be used by the Regional Administrator for deciding whether such waste is one for which discretionary use of the kickout provision should be considered.

EPA believes that the information that would be required in § 264.552(d)(1)–(3) on wastes potentially being placed in CAMUs will generally be in the facility's or EPA's possession prior to the CAMU approval process. Facilities typically seek the use of a CAMU in cases where they have identified that they are managing hazardous cleanup wastes, and are seeking a compliance alternative to the standards that apply to management of hazardous as-generated wastes. Information on the origin and historical management of wastes is routinely reported in permit applications, RCRA Facility Assessments (RFAs), RCRA Facility Investigations (RFIs) and other cleanup investigative reports, remedial workplans, engineering reports and analyses of remedial alternatives conducted prior to the determination to pursue a CAMU. If this information was previously submitted to the same Agency, and it remains timely and accurate, the owner/operator could simply identify where and when the information had been previously submitted to the Agency, and EPA would generally not expect the owner/operator to resubmit the information as part of its submission under this requirement.

EPA seeks comment on today's proposed information submission provisions. In particular, do they achieve the Agency goals for obtaining the types of information necessary to make CAMU decisions? In addition, EPA specifically seeks comment on the Agency's conclusion that the information that would be required in § 264.552(d)(1)–(3) on wastes potentially being placed in CAMUs will generally

be in the facility's or EPA's possession prior to the CAMU approval process.

1. Availability of Information

Today's amendments would provide that the information in proposed § 264.552(d)(1)–(3) must be submitted to the Agency unless it is ''not reasonably available.'' Under this standard, facilities would be expected to have made or make a good faith effort to gather and provide information meeting the submission requirements in § 264.552(d)(1)–(3). As stated above, EPA believes that most facilities will already be in possession of information necessary to fulfill the requirements of this provision and will be able to readily inform the Agency of the information required under proposed § 264.552(d). In instances where this is not the case, EPA would expect most facilities to be able to gather the information through existing site and waste-specific information such as manifests, vouchers, bills of lading, sales and inventory records, sampling and analysis reports, accident, spill, investigation, and inspection reports, enforcement orders and permits. Reasonably available information also would include information that can be obtained from talking with knowledgeable current and former employees, particularly where documentation is absent. Information that is required to be developed and maintained under applicable statutes and regulations would also be expected to be reasonably available.

EPA believes that the ''reasonably available'' standard is appropriate, because it would allow for circumstances where, for example, the contamination cannot be linked with specific waste management activities that are historically associated with the facility (e.g., characteristically hazardous soils not associated with any hazardous waste unit at the facility). Where information responding to the requirements in § 264.552(d) is not reasonably available, the facility could fulfill these information submission requirements by informing the Regional Administrator on the extent of its knowledge about the waste and releases.

For wastes that were disposed and/or released prior to the enactment of the hazardous waste regulations or the land disposal restrictions, the response to paragraphs (d)(2) and (3) would be to indicate in the submission that the information submitted regarding the origins of the waste in paragraph (d)(1) demonstrate that the wastes were not regulated as hazardous or subject to the LDRs, because those standards did not exist at that time.

2. Ability to Seek Additional Information

EPA is not proposing to alter the general approach to information submission, which requires the owner or operator to submit sufficient information to enable the Regional Administrator to designate a CAMU. It is typical to have a series of back-and-forth discussions, information exchanges, and requests for additional information throughout the CAMU application process. For the purpose of determining CAMU eligibility, the Agency would likewise, where appropriate, seek information regarding waste history beyond that initially submitted pursuant to § 264.552(d). Where there are significant concerns raised about the eligibility or past management of wastes from submitted information, information already in the oversight agency's possession, or from information brought to the Regional Administrator's attention by a citizens group, the Agency would expect the Regional Administrator to seek additional information regarding waste history.

3. Commercial Chemical Products

EPA believes that there could be potential confusion regarding how § 264.522(d) should be applied to P and U hazardous wastes which are discarded (see 261.33) and are undergoing cleanup. The confusion arises because commercial chemical products are not ''wastes'' until they are discarded or intended to be discarded by being abandoned (or used as fuels or in a manner constituting disposal when these are not their normal manner of use). In this context, (d)(2) should be read as ''whether the disposal and/or release of the commercial chemical product occurred before or after the associated listing.'' EPA believes that this reading should make the intention of the original questions clearer as applied to discarded commercial chemical products. For (d)(3), the answer should be that the commercial chemical products were not subject to LDRs because the LDR requirement for the associated listing would not apply at the time of the spill.

4. Alternate Approach to Proposed § 264.552(d)(3)

EPA seeks comment on an alternate approach to seeking information under proposed § 264.552(d)(3). Under this alternate approach, provision (d)(3) would read as ''whether the disposal and/or release of the waste occurred before or after the land disposal restriction requirements of Part 268 of this chapter were in effect for the associated listing.'' This alternate approach would request information relating to an LDR regulation effective date, rather than information on determining whether the waste was ''subject to'' LDR standards. EPA has concerns that assessing whether waste was ''subject to'' certain standards might become complicated for the owner or operator. EPA anticipates that the date approach might be easier for owner/operators to respond to, and would provide oversight agencies with relevant information to understand the compliance history or to seek additional information, if needed.

5. Interpretation of Existing § 264.552(d)

During discussions with stakeholders, EPA became aware of potential confusion regarding the use of the word ''criteria'' in the information submission requirement at § 264.552(d): ''The owner/operator shall provide sufficient information to enable the Regional Administrator to designate a CAMU in accordance with the criteria in § 264.552.'' Although the Agency does not believe the confusion warrants a change in the regulatory language, EPA is using today's proposal as an opportunity to clarify its intent with regard to this provision. Specifically, the word ''criteria'' was described in the 1993 preamble as referring to the ''decision criteria specified in § 264.552(c) as they relate to the implementation of a CAMU at a given facility'' (58 FR 8671). The potential confusion regarding this phrase relates to whether the information submission requirement is restricted to the listed criteria under § 264.552(c). As plainly required by § 264.552(d), EPA has always intended that this provision be read as requiring information relating to all aspects of implementation of the CAMU under § 264.552, including, for example, implementation factors that are not specifically referenced in § 264.552(c), such as information relating to the use of a regulated unit as a CAMU (under § 264.552(b)).

E. Liquids in CAMUs (§ 264.552(a)(3))

EPA is proposing to add a general prohibition, at § 264.552(a)(3), against placement of liquids in CAMUs, with exceptions for liquids that are associated with the remedy selected for the waste. Specifically, EPA is adding four provisions as follows: (1) ''The placement of bulk or non-containerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU is prohibited except where placement of such wastes facilitates the

remedy selected for the waste;'' (2) ''The requirements in § 264.314(d) for placement of containers holding free liquids in landfills apply to placement in a CAMU except where placement facilitates the remedy selected for the waste;'' (3) ''The placement of any liquid which is not a hazardous waste in a CAMU is prohibited unless such placement facilitates the remedy selected for the waste or a demonstration is made pursuant to § 264.314(f);'' and, (4) ''the absence or presence of free liquids in either a containerized or a bulk waste must be determined in accordance with § 264.314(c). Sorbents used to treat free liquids in CAMUs must meet the requirements of § 264.314(e).'' Of course, under today's proposal, wastes containing liquids that are placed in a CAMU in accordance with the proposed provisions would remain subject to the CAMU requirements, including today's proposed treatment standards.

These proposed changes essentially adopt the approach that has been taken for hazardous waste landfills, into which the placement of hazardous or non-hazardous liquids is prohibited (at § 264.314), but has been modified for incorporation into the CAMU rule.[8] EPA believes that the general basis for prohibiting placement of liquids in landfills—that liquids fundamentally increase the risk of future releases from a unit—applies equally to CAMUs. The Agency is not aware of any instances of inappropriate introduction or disposal of liquids in existing CAMUs, but believes that the proposed amendment will clarify the Agency's long-standing policy on the general inappropriateness of the disposal of liquids in long-term land disposal units, including CAMUs.

EPA believes there will, however, be instances where it is appropriate to add liquids or wastes containing liquids in CAMUs, when such placement facilitates the remedy selected for the waste being managed in the CAMU. For example, a common practice for management of water-bearing industrial sludges or sediments is to de-water the materials prior to final disposal or treatment. In another example, soils or other contaminated materials can be subjected to a soil washing remedy, either with water or solvents, to remove soluble contamination. The remedy approved by the oversight agency would specify final management of the residual water; typically, in these examples, the residual liquids from de-watering or from soil washing would be containerized and disposed offsite. Another example is bioremediation of wastes, which frequently requires the addition of water or liquid additives to facilitate the biological breakdown process. Management of the CAMU might also require use of water or leachate for dust suppression while the unit is operating or under construction. To accommodate these reasonable clean-up waste management approaches, the Agency has included an exception to the prohibition, where placement of liquids into the CAMU ''facilitates the remedy selected for the waste'' (§§ 264.552(a)(i), (ii), (iii)).

EPA believes this proposed approach for allowing placement of liquids in CAMUs is appropriate, because of the decision process for CAMU designation, which includes, among other factors, an oversight agency's assessment of the need for treatment of CAMU wastes.

1. § 264.314(f) Demonstration

In today's proposal, for liquids that are not hazardous waste, there is a prohibition against placement in a CAMU unless the placement facilitates the remedy selected for the waste or, as in § 264.314, a demonstration is made pursuant to § 264.314(f). Under this demonstration, the Regional Administrator must determine that the only reasonable alternative is placement in a landfill or unlined surface impoundment which contains (or may be reasonably anticipated to contain) hazardous waste, and that placement in the owner or operator's landfill will not present a risk of contamination of any underground source of drinking water (as that term is defined in § 144.3). In general, EPA believes that this demonstration under § 264.314(f) for hazardous waste landfills is also appropriate to apply to CAMUs; EPA does not anticipate circumstances that differ for CAMUs that would prevent the appropriate use of this provision.

F. Amendments to Design Standards for CAMUs

In today's notice, EPA is proposing amendments in three areas to the existing design standards for CAMUs. For CAMUs in which wastes will remain in place after closure, these changes would: establish a minimum liner requirement for new, replacement or laterally expanded CAMUs; provide minimum national design criteria for CAMU caps; and, require notification for releases to groundwater from the CAMU and corrective action of such releases as necessary to protect human health and the environment. EPA believes that the greater specificity in today's proposed amendments on technical standards for CAMU liners and caps is reasonable and consistent to the extent appropriate with the approaches undertaken in the Subtitle C and D programs for long-term disposal of wastes. EPA believes that the groundwater monitoring provisions proposed today would make clearer the Agency's expectation that releases from CAMUs will be addressed as necessary to protect human health and the environment. EPA also believes, that to maintain the CAMU rule's ability to address disincentives to cleanup, today's proposed amendments in these areas must allow for alternatives to the standards to reflect the unique and site-specific circumstances associated with long-term disposal of cleanup wastes; today's proposed amendments were designed with that objective in mind. The proposed amendments are described in the following sections.

1. Liner Standard (§ 264.552(e)(3))

In the existing CAMU rule, the fourth general decision criterion at § 264.552(c)(4) specifies that ''areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable.'' This standard, in conjunction with the closure and post-closure provisions in § 264.552(e), is intended to ensure that long-term controls adequate to protect human health and the environment are imposed for any wastes remaining within the CAMU. In practice, pursuant to this standard, the Agency has made site-specific determinations that liners should be employed at most new, replacement, or laterally expanded CAMUs to minimize releases and control leachate (see the CAMU Site Background Document in the docket for today's rule). The 1993 rule, however, does not have any explicit minimum liner requirement for CAMUs where waste will remain in place after closure. Today's amendments address the concern that the existing standards are not sufficiently concrete to ensure that a liner will be used, as appropriate, at all new, replacement, or laterally expanded CAMU units.

As stated above, the majority of existing CAMUs with new, replacement, or laterally expanded units have been built with liners; where liners were not used, there were legitimate reasons, related to the cleanup, for that decision. The general practice of using liners in these situations reflects good engineering standards and a preventive approach that, along with other requirements imposed by the Regional

[8] In modifying § 264.314 for potential application to CAMUs, EPA did not include provision § 264.314(a), which pertains to disposal prior to 1985, because it would not apply to future CAMUs.

Administrator, provides long-term protection of human health and the environment when wastes are left in place. EPA recognizes the concern that the current standard is open-ended and might benefit from increased detail to better ensure that liners will be used where appropriate. EPA believes that, consistent with the Subtitle C program for as-generated hazardous waste and the Subtitle D program, a liner requirement and greater specificity on technical standards is reasonable for new, replacement, or laterally expanded CAMUs where waste will remain in place after closure. EPA, however, also believes that any such requirement must allow sufficient flexibility for alternatives to the standard, to reflect the unique and site-specific circumstances associated with locating units at cleanup sites. As described above in the section titled, *Why is EPA Proposing Today's Amendments*?, the Agency crafted today's standard with this goal in mind.

EPA is proposing a minimum national liner standard at § 264.552(e)(3)(i) that is modeled on the uniform design standard at 258.40(a)(2) for use in the municipal solid waste (Subtitle D) program (see Solid Waste Disposal Facility Criteria, 56 FR 50978, October 9, 1991, and supporting materials (docket # F–91–CMLF–FFFFF).

The proposed liner requirement is only for application at CAMUs that are new, replacement, or laterally expanded units. This approach, which recognizes the practical issues of retrofitting existing units (which, if required, could work as a disincentive to cleanup), is consistent with that taken by Congress in RCRA for hazardous waste landfills for as-generated wastes (under § 3004(o)). ''New, replacement, or laterally expanded'' is meant to have the same meaning in today's proposal as in the § 3004(o) context. Guidance on the interpretation of ''new, replacement or laterally expanded'' units already exists and has been placed in the docket for today's proposal.

Under today's proposal, unless the Regional Administrator approves an alternate standard (as discussed below), the rule would require new, replacement, or laterally expanded CAMUs to be constructed with a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner. The rule would require the composite liner to consist of two components: An upper flexible membrane liner (FML) with a minimum thickness of 30-mil, and a lower component consisting of at least two feet of compacted soil with a hydraulic conductivity of no more than 1x10–7 cm/sec. The rule would require FML components consisting of high density polyethylene (HDPE) to be at least 60 mil thick and would require the FML component to be installed in direct and uniform contact with the compacted soil component. The FML and soil layer function together to retard the migration of contamination into the subsoil. The FML would provide a highly impermeable layer to maximize leachate collection and removal; the compacted clay liner would adsorb, attenuate and retard contamination in the event of FML liner failure. The leachate collection system would remove liquids from the CAMU, which reduces hydraulic pressure and the potential for migration of leachate through the base of the CAMU.

EPA believes that the proposed standard would be an appropriate national minimum standard for new, replacement, or laterally expanded CAMUs, because it would be protective for a wide variety of waste and site conditions. In fact, when liners have been installed at new, replacement or expanded CAMUs under the existing regulations, a Subtitle D-type liner is consistent with what has generally been imposed by regulatory agencies in the absence of specific requirements. The Subtitle D standards also have sufficiently detailed liner and leachate collection provisions to be easily implemented, with the advantage of already being in wide use. In crafting today's rule, the Agency thought it made sense to model the amendments on existing standards where appropriate and available, to avoid the implementation issues that inevitably arise with the promulgation of a novel standard. The other obvious model for a CAMU minimum requirement would be the Subtitle C Part 264 liner requirements for new, replacement, or laterally expanded land disposal units. The Subtitle C standard requires, among other features, two synthetic liners, an underlying three foot thick clay layer and two leachate collection systems (see § 264.301). This option, however, was rejected since it was these standards that, in part, created the disincentive to cleanup meant to be addressed by the CAMU rule.

It is important to note that the proposed rule would establish ''minimum'' national standards, which would allow for the approval of additional features, where appropriate, to ensure protection of human health and the environment. For example, at some existing CAMUs (see the CAMU Site Background Document, available in today's docket), additional groundwater protection features, such as use of slurry walls or engineered inward hydraulic gradients, and features that meet the requirements of the Subtitle C liner standards, have been required.

a. *Alternate Liner Designs (§ 264.552(e)(3)(ii)).* Both the Subtitle C as-generated hazardous waste and Subtitle D regulations contain provisions for the approval of site-specific alternatives to the minimum liner standard under specific circumstances. These provisions provide balance between specific minimum national standards and the need to accommodate site-specific conditions. EPA believes that, in the context of establishing CAMUs, there are additional reasons to provide flexibility for alternate designs. Flexibility will help to counter any incentives to leave wastes in place created by minimum standards that might not be appropriate in a given circumstance, and will allow for more economical and innovative designs that will preserve cleanup resources while still being protective of human health and the environment. In today's rule, EPA is proposing two provisions that would allow the Regional Administrator to approve alternate liner designs.

The first provision, proposed at § 264.552(e)(3)(ii)(A), is patterned on the statutory alternate liner standard for Subtitle C units (at RCRA § 3004(o)(2)), which is written into the Subtitle C program for hazardous waste landfills at § 264.301(d). Under this provision, the Regional Administrator must find that ''alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as the [standard liner and leachate collection system].'' This provision would allow for alternative liner designs of equal technical performance, when considered in conjunction with location characteristics, such as cases where the CAMU is located in an area where it is unlikely that releases would reach groundwater. EPA's underlying premise in proposing this alternate liner provision for CAMUs is that designs of equal or superior performance should be acceptable, and that the alternate standard for Subtitle C liners, with its express allowance for consideration of location characteristics, is equally appropriate for CAMUs. Location characteristics are an essential consideration in choosing cleanup remedies, including those involving CAMUs. EPA expects this provision would provide flexibility for designs that take into account local factors,

including state design protocols and availability of construction materials.

The second alternate liner provision, proposed at § 264.552(e)(3)(ii)(B), would provide for flexibility in liner design for CAMUs that are established in significantly contaminated areas. With this provision, the Regional Administrator could specify alternate designs if the CAMU is to be established in an area with existing significant levels of contamination, and the Regional Administrator finds that ''an alternative design, including a design that does not include a liner, would prevent migration from the unit that would exceed long-term remedial goals.'' For example, at some highly contaminated facilities where contamination is pervasive throughout the subsurface, and where either groundwater pump and treat is predicted to be necessary for hundreds of years or high-level subsurface soil contamination is expected to remain as a potential source of groundwater contamination, a liner to reduce migration of constituents from the CAMU into the highly contaminated subsurface would not add a meaningful additional level of protection and would not be the best use of remediation resources. Under this alternate standard, potential migration from the CAMU, even if it is unlined, must be consistent with the remedial goals at the site (for example, not cause cleanup goals to be exceeded at locations where potential receptors would be located). This approach is consistent in principle with site-specific decisions sometimes made in the context of overall remedies, such as where in-situ contamination is determined to require a cap, but not excavation. For example, one existing CAMU, located at a decades-old lead recycling facility, uses a CAMU for permanent disposal of soils containing lead debris. The CAMU does not use a liner, due to the high levels of existing contamination in the soils underlying the CAMU and limited leaching potential of the soils, and it has a perimeter slurry wall and groundwater extraction system that maintains an inward hydraulic gradient within the slurry wall. EPA believes it was reasonable to conclude, at this site, that a CAMU liner would not add a meaningful additional level of protection to groundwater, given the nature of the waste, engineering associated with the unit, and the pervasive contamination underlying the unit.

EPA expects that this alternate provision would also be used when land treatment is conducted in a CAMU. Land treatment is generally not undertaken with the use of liners, because land treatment typically requires that rainwater or introduced liquids percolate through the waste and existing soil column. EPA expects that many land treatment CAMUs would be existing units, which would not be subject to the minimum liner standard proposed today. However, EPA expects that those that are not existing units would typically be located in areas with significant contamination, such that this alternate liner provision could be potentially available and provide for a CAMU land treatment unit without a liner. EPA seeks comment on whether EPA's assumption that land treatment in CAMUs is appropriately accommodated in today's proposal is correct, and if not, what changes would be necessary to do so.

As discussed above, in creating the minimum standard for liners in today's proposal, the Agency sought to provide a generally applicable minimum standard that makes sense in most circumstances in the context of cleanup, and to provide for site-specific flexibility in situations where that standard might not make sense (*e.g.*, where the standard might create a disincentive to cleanup). Today's proposed standard also would stand as a minimum, and additional requirements, such as further reductions in liner permeability, could be required, as appropriate, at some sites. The Agency requests comment on whether the standard promulgated today satisfies these objectives. In particular, the Agency seeks comment on whether there are situations where these standards might act to discourage cleanup, and, if so, how the standards might be modified to address those situations.

The Agency also specifically requests comment on the two provisions for alternate liner standards. Do they sufficiently capture the situations where the general minimum standard might not be appropriate? Are there other ways to achieve similar results? For example, in lieu of proposed § 264.552(e)(3)(i), the Agency considered using the alternative liner design provision for Subtitle D solid waste landfills at 258.40(a)(1)[9]. As discussed below, the Agency is not proposing this approach because it is keyed to a list of constituents that would not be representative of those found at cleanup sites. However, it might be possible to use the general approach of this provision to develop an approach for CAMUs. Under the Subtitle D site-specific liner standard, a demonstration must be made that an alternate design would contain hazardous constituents such that constituent concentrations (those listed in Table I of Subpart D, Part 258) will not be exceeded in the uppermost aquifer at a relevant point of compliance, not to exceed 150 meters from the waste management unit boundary. These constituents represent those that are typically found in Subtitle D landfill leachate. EPA believes that this list would not be representative of the broader array of constituents found in CAMU-eligible wastes from diverse industries and thus would not be appropriate for use as a CAMU standard. EPA recognizes, however, that at individual cleanup sites, the regulator typically identifies site-specific constituents of concern from a groundwater perspective. EPA also recognizes that site-specific points of compliance in groundwater are typically established for these constituents. Therefore, EPA believes that the same basic approach used in the alternate liner standard for Subtitle D landfills, modified to incorporate site-specific data, might be used at CAMUs as a means of setting minimum alternate liner standards. EPA specifically requests comments on the potential adoption of an alternate liner provision that is derived from the Subtitle D alternate liner provision so that relevant site-specific constituents are contained at a relevant point of compliance. The Agency is also requesting comment on an alternative that would allow alternative requirements if liner design and operating practices along with site characteristics would prevent migration that meets long-term remediation goals.

2. Cap Standard (§ 264.552(e)(6)(iv))

In today's notice, EPA is proposing to add detail to the existing requirement for capping of CAMUs closed with waste in place. The existing regulation, at § 264.552(e)(4)(ii)(B), requires capping of CAMUs undergoing closure with wastes remaining in place, but does not specify standards for such caps. EPA recognizes the concern that the current standard is open-ended, and the current standard might benefit from increased detail to better ensure that appropriate cap designs are required. EPA believes that greater specificity on technical standards for CAMU caps is reasonable and consistent with the approaches undertaken in the Subtitle C and D programs for long-term disposal of wastes. EPA, however, also believes that any such requirement must allow

[9] In the August 20, 1999 proposed Standards for the Management of Cement Kiln Dust (64 FR 45632), EPA proposed an alternate liner provision (at proposed § 259.30(c)) modeled on the § 258.40(a)(1) standard.

for alternatives to the standard to reflect the unique and site-specific circumstances associated with long-term disposal of CAMU-eligible wastes. As described in the introductory section to today's proposed design standards, the Agency developed the alternative standard with this goal in mind.

EPA is proposing at § 264.552(e)(6)(iv) to use the existing hazardous waste landfill cap standards at § 264.310(a) as performance criteria for CAMU caps. Under this proposed approach, the cap must be designed and constructed to meet the following performance criteria at final closure of the CAMU, unless an alternate cap design (discussed below) is used: (1) Provide long-term minimization of migration of liquids through the closed unit; (2) function with minimum maintenance; (3) promote drainage and minimize erosion or abrasion of the cover; (4) accommodate settling and subsidence so that the cover's integrity is maintained; and (5) have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present. EPA believes that these are common-sense standards that are consistent with basic engineering principles and with cap requirements that have been established for existing CAMUs. These standards are also well understood from their application in the field.

Although today's proposed performance criteria are taken from the Subtitle C landfill standards, use of this standard would not generally be expected to result in caps that look like Subtitle C caps constructed on a new Subtitle C unit. This is because the permeability of the cap under either scenario is set in relation to the liner—the cap must be of equal or lower permeability than the liner. The minimum national design standards for liners proposed in today's rule are for a composite liner and leachate collection system, and apply only for new, replacement, and laterally expanding units. Most CAMUs to date have been established at existing units, in which the liner standard would not apply. Existing units vary in their design and in the consequent permeability of their bottom layer; as a result, a cap designed in relation to the liner will not always look like a full Subtitle C cap.

The proposed minimum permeability standard for a cap can be met in a variety of ways, including with systems that are designed to use the water uptake capability of vegetation. As a result, it is not always necessary for the cap to match the construction materials used in the liner. Non-standard caps, such as those that use vegetation, should be carefully designed and reviewed by the oversight agencies to satisfy the design criteria. For more details on construction of alternate cap designs, that are germane to Subtitle D or C-type caps, see the preamble discussion in the July 1997 revised standards for municipal solid waste landfills (62 FR 4708, 40710 (July 29, 1997)).

a. Alternate Cap Design (§ 264.552(e)(6)(iv)(B)). Two existing CAMUs have been designed with caps that allow controlled infiltration of rainwater through the cap into the waste to promote biodegradation of the wastes in the CAMU. The design of such caps take into consideration such factors as constituent concentrations, treatment levels, and time-frames for biodegradation (see the CAMU Site Background Document in the docket for today's rule). EPA believes that such caps can promote greater long-term protection in the event of failure of the unit, by facilitating the continued treatment of waste after disposal. Such designs, however, would not meet today's proposed cap performance criteria to ''provide long-term minimization of migration of liquids through the closed unit'' and ''have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.'' Therefore, in today's notice, EPA is proposing an alternate cap standard at § 264.552(e)(6)(iv)(B) which would allow for alternate designs that facilitate treatment or the performance of the cap. EPA believes that these standards would allow for cap designs consistent with the above cited examples. EPA also believes that any such design warrants careful review to ensure that it is protective over the long-term and will meet cleanup goals within a reasonable time frame.

EPA is aware of a CAMU under discussion for approval that would use an existing biological land treatment unit to treat organically contaminated wastes to below health-based levels. Treatment would be complete at this unit when concentrations of constituents are at or below health-based levels and the unit would be closed without a cap or groundwater monitoring. EPA anticipates that other treatment technologies, such as *in situ* methods, could effectively achieve the same result of achieving treatment levels that are below health-based levels applicable to the site. Under today's proposed amendments to the cap standards, such CAMUs would be subject to the requirements for a cap at the time of closure. However, the Agency is concerned that this approach would not generally make sense in these cases where wastes in the unit are treated to below health-based levels, just as a cap requirement would not make sense when wastes derived from cleanup are placed in CAMUs with constituent concentrations at or below protective health based levels (see today's proposed provision at § 264.552(g) for such wastes that meet or exceed health based levels at the time they are placed in CAMUs, discussed below in the section titled: *Constituents at or Below Remedial Levels*). EPA therefore is seeking comment on a modification to today's proposed cap standard at § 264.552(e)(6)(iv)(A) that would potentially address this concern. This modification would insert the phrase ''with constituent concentrations above remedial levels or goals applicable to the site'' as follows: ''At final closure of the CAMU, for areas in which wastes will remain after closure of the CAMU with constituent concentrations above remedial levels or goals applicable to the site, the owner or operator must cover the CAMU with a final cover designed and constructed to meet the following performance criteria* * *''

The Agency requests comment on all aspects of the proposed cap standard. In particular, the Agency requests comment on whether the provision for alternate design adequately provides for cleanup situations where deviation from the national minimum standard would be appropriate.

3. Releases to Groundwater (§ 264.552(e)(5))

In today's notice, EPA is proposing a provision at § 264.552(e)(5) for the Regional Administrator to require notification of releases to groundwater from the CAMU, and corrective action of those releases, as necessary to protect human health and the environment. The 1993 CAMU rule contains a provision for monitoring of existing releases and potential releases from waste remaining in place after closure. However, it does not include a provision specifically providing for notification to the overseeing agency and corrective action as necessary for releases to groundwater from CAMUs.[10]. In the absence of today's proposed amendment, the RA has the authority, in designating a CAMU (see § 264.552(c)(2)), to include requirements to notify the Agency and cleanup any releases, as necessary, that

[10] The preamble to the 1993 rule stated EPA's expectation that the final Subpart S rulemaking would address the issue of when groundwater remediation would be necessary. In October 1999, EPA issued a Federal Register notice withdrawing the majority of that proposal, including provisions pertaining to this issue (64 FR 54604).

emanate from CAMUs. In addition, if the CAMU authorizing document did not include such requirements, the overseeing Agency would also have authority under its cleanup authorities (*e.g.*, Sections 3008(h) and 7003) to require corrective action if there were a release. The Agency is proposing to add these requirements to stress the importance of notifying the Regional Administrator of releases from CAMUs so that prompt action may be taken to address them, where appropriate. Having express corrective action requirements in (or incorporated in) the CAMU authorizing document itself, as opposed to relying on issuance of separate orders, will also accelerate the corrective action process.[11]

The proposed amendment does not change the general performance standard approach to groundwater monitoring for CAMUs, which does not explicate the details of how and when corrective action relating to groundwater contamination from the CAMU will be addressed at the site. The Agency believes that decisions about when and how to clean up groundwater should be made site-specifically in the broader context of the overall site cleanup consistent with the Agency's approaches for cleaning up groundwater in its remedial programs (see Corrective Action for Releases from Solid Waste Management Units at Hazardous Waste Management Facilities, Advance Notice of Proposed Rulemaking, at 61 FR 19432, 19461 (May 1, 1996); Presumptive Response Strategy and *Ex-Situ* Treatment Technologies for Contaminated Ground Water at CERCLA Sites; EPA 540/R–96/023, October 1996, available in the docket for today's rule). Detailed specifications or performance standards to address groundwater and corrective action would be included (or incorporated) in the site permit or order, based on site-specific information and conditions.

The proposed amendment requires ''notification'' as necessary to protect human health and the environment in the event of releases to groundwater from the CAMU. Monitoring and reporting (*i.e.*, notification) frequencies are typically established site-specifically in sampling and analysis plans, and reflect conditions at the site, including such factors as degree of existing contamination, distance to nearest groundwater well, groundwater flow rates, and statistical sampling protocols. As with existing CAMUs, where site-specific groundwater monitoring is required, EPA would expect that notification requirements would be addressed site-specifically and the requirements would be incorporated into appropriate authorizing mechanisms for CAMU designation (*e.g.*, in a sampling and analysis plan that is incorporated into the permit or order).

G. Proposed Approach to Treatment

Treatment of hazardous waste is a critical element of the RCRA hazardous waste management program. Treatment of hazardous wastes that will be placed in ''land disposal units'' is governed by the Land Disposal Restrictions (LDR) program, which sets standards for reduction in toxicity and mobility of specific hazardous constituents. The focus on treatment before land disposal in the RCRA program reflects EPA's and Congress's recognition of the uncertainties that are associated with long-term containment of wastes and the potential for containment to fail and cause future problems.

In developing today's proposal, EPA considered the issue of what level of treatment would be appropriate for CAMU-eligible wastes in the context of the underlying issues that the CAMU rule is intended to address. As EPA has described before, in implementing actual cleanups, it is not always straightforward, possible, or reasonable to require companies to excavate or remove existing cleanup wastes, especially in light of the costs and practical issues associated with application of the Subtitle C treatment and unit design requirements to the excavated wastes, and where often a legally available cleanup option is to leave wastes in place. As discussed in the May 26, 1998 final Phase IV Rule (63 FR 28556, 28603), part of the benefit of the treatment standards under Subtitle C for as-generated hazardous waste is that they create an incentive to generate less of the affected waste. In the remedial context, however, the waste is already in existence, and this incentive, therefore, works against the goal of cleanup, which is often to maximize (as appropriate) the amount of waste managed, in order to remove the threats it poses. In the Agency's several attempts to address these issues, the goal has always been to create a rule that promotes more aggressive cleanups, *i.e.*, those that result in excavation and management, including an appropriate degree of treatment. EPA believes that this approach generally results in more permanent remedies.

The Agency addressed this issue with its original promulgation of the CAMU rule, which removed the LDR and MTR requirements and replaced them with a site-specific flexible framework to encourage removal, excavation, treatment and final placement of wastes in CAMUs. In terms of treatment, the current CAMU rule stresses the importance of treatment for higher risk wastes with decision criterion § 264.552(c)(6), which requires that the CAMU ''enable the use, when appropriate, of treatment technologies * * * to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU.''

This provision was meant to reflect EPA's repeatedly expressed preference in the cleanup context for treatment of higher risk wastes, rather than excavation and containment of wastes without treatment (note that the term ''higher risk'' wastes is used in a general sense in this proposal to describe the Agency's policies, and does not define a new class of wastes). This preference results from the same concerns regarding the uncertainties associated with long-term containment described above. The most detailed description of EPA's policy on treatment and containment for the RCRA corrective action program can be found in the 1996 Advance Notice of Proposed Rulemaking, Corrective Action for Releases From Solid Waste Management Units at Hazardous Waste Management Facilities (61 FR 19432, 19448 (May 1, 1996)). EPA believes that CAMUs that have been approved to date reflect a reasonable balance between treatment and containment, and more than half of existing CAMUs have involved treatment of hazardous cleanup wastes.

Today's proposal addresses concerns that the 1993 CAMU rule lacks an explicit treatment requirement, which could result in the implementation of CAMUs with waste that is insufficiently treated where treatment is warranted. Stakeholders expressed the concern that a treatment standard is particularly appropriate for hazardous cleanup wastes, which, without management in a CAMU, would be subject to the full LDR treatment requirements. EPA recognizes the concern that the current standards are open-ended, and the current standards might benefit from increased detail to better ensure that treatment will be adequately considered by EPA and authorized state implementors. EPA therefore believes that it is appropriate to propose an approach that will ensure appropriate treatment of higher-risk hazardous cleanup wastes that are permanently disposed in CAMUs. In the process of

[11] Of course, if the CAMU incorporates a hazardous waste regulated unit that is undergoing closure, corrective action to address releases to groundwater may also be addressed under the closure requirements for regulated units.

developing today's proposal, EPA examined existing CAMUs and the type and level of treatment that has been required under the existing rule. Treatment has been used at more than 70% of existing CAMUs. EPA believes that these were good decisions, and designed today's proposed standards to accommodate these types of decisions. EPA's general conclusion in comparing these existing CAMU decisions to today's proposed amendments (see the CAMU Site Background Document in the docket for today's rule) is that existing CAMU remedies involving treatment would still require treatment under today's proposed requirements, and similarly, that existing remedies not involving treatment would also not involve treatment under today's proposed requirements (either because there would likely be no PHCs identified at the site, or because the Regional Administrator would likely have determined that no treatment was required based on one of the adjustment factors discussed below).

EPA believes that today's proposed approach would increase the certainty that CAMU disposal decisions will require treatment of hazardous wastes where it is appropriate to do so, while retaining the flexibility needed to address site-specific circumstances that is generally exercised in EPA's remedial programs. EPA also believes that today's proposed treatment approach, by providing a general minimum national standard, will have the added benefit of providing a benchmark against which the public can review potential treatment decisions.

EPA's proposed approach to treatment for hazardous cleanup wastes disposed in CAMUs is explained in detail in the following sections. In general, EPA is proposing that the treatment requirement would apply to wastes that are determined to contain ''principal hazardous constituents'' (PHCs). The proposed requirement would limit treatment for such waste to any principal hazardous constituents in the waste, rather than to the full suite of constituents under the LDR program that would otherwise be subject to treatment. As proposed, principal hazardous constituents would be the primary ''risk-drivers'' in the hazardous CAMU-eligible waste, and would be determined on a site-specific basis as those constituents that pose a risk that is substantially higher than the cleanup levels or goals at the site. EPA is proposing standards that would require treatment of PHCs in the waste in accordance with either of two approaches: (1) National minimum treatment standards, adapted from the LDR Phase IV soil standards; or (2) factors that allow for site-specific adjustment of the minimum treatment levels in appropriate circumstances. Regarding the latter, in identifying circumstances where it might be reasonable and appropriate for the Regional Administrator to impose an adjusted treatment standard, EPA considered the Agency's long-standing preference for treatment of certain higher risk wastes, its experience in implementing remedies in the RCRA corrective action program (and, most especially, CAMUs that have been used to date), and its experience in implementing the land disposal restrictions program, which allows for variances from the LDR treatment standards (so long as the alternate treatment standard continues to minimize threats posed by land disposal).

The Agency's goals in proposing these treatment requirements for principal hazardous constituents are that they should provide a meaningful level of treatment and be achievable, but should not be so onerous as to discourage cleanup. The Agency believes that the proposed treatment requirements satisfy these objectives.

1. Identification of ''Principal Hazardous Constituents'' (PHCs) (§ 264.552(e)(4)

As described above, the treatment standards in today's proposed rule would only apply to the primary risk drivers, ''principal hazardous constituents'' (PHCs), in the cleanup wastes. This section of today's preamble discusses the approach proposed today, at § 264.552(e)(4)(i), to identify the PHCs in hazardous CAMU-eligible waste that would be subject to the proposed treatment requirements. As described above, the 1993 CAMU rule currently requires, under § 264.552(c)(6), that the CAMU ''enable the use, when appropriate, of treatment technologies * * * to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU.'' However, the rule does not identify a standard approach or process for identifying wastes or constituents that should be subject to treatment. The general practice in addressing contamination at cleanup sites, including those where CAMUs will be used, is to identify the presence and concentrations of hazardous constituents in cleanup wastes and to use this characterization information in conjunction with risk estimates and site-specific factors to make remedial decisions, including whether and to what extent to treat waste. For the reasons outlined in the previous section, EPA is proposing to add greater specificity to identification of constituents subject to treatment requirements.

a. *Constituents Subject to PHC Analysis (§ 264.552(e)(4)(ii)).* Since one of the primary benefits of the CAMU rule is to provide appropriate relief from RCRA's LDR provisions, it is not EPA's intention with today's proposed amendments to require treatment of more constituents than would be required under the LDR program. In other words, EPA does not intend to promulgate a treatment requirement for solid wastes that would not, absent the CAMU rule, be subject to LDRs if land disposed. Therefore, proposed § 264.552(e)(4)(ii) would require that in designating PHCs in hazardous CAMU-eligible waste, the Regional Administrator must only consider those constituents that would be subject to the LDR treatment requirements if the waste were placed in a land-based unit other than a CAMU. Specifically, the list of constituents would be as follows: for listed wastes (*e.g.*, sludges), ''regulated hazardous constituents'' (see § 268.40, Table ''Treatment Standards for Hazardous Wastes''); for characteristic wastes, all ''underlying hazardous constituents'' (see § 268.40(e), § 268.2(c)); for soil, ''constituents subject to treatment'' (see § 268.49(d)).

EPA expects that, under today's proposal, program implementors would identify PHCs as part of the overall site remedial process. Typically, during the site and waste characterization process and during the assessment of remedial alternatives, owner/operators and oversight agencies identify which wastes are hazardous, which wastes warrant removal, and which constituents will be used to set site cleanup levels. This process results in the identification of the ''risk-drivers'' at a site. EPA fully expects that this typical characterization and analysis process, leading up to the decision to consider the use of a CAMU, will reliably identify PHCs. Therefore, EPA does not believe today's proposal would require greater characterization than what already exists in well-designed cleanups. EPA seeks comment on this conclusion.

b. *Proposed PHC Standard (§ 264.552(e)(4)(i)).* EPA is proposing the following standard at § 264.552(e)(4)(i) for the identification of principal hazardous constituents: ''Principal hazardous constituents are those constituents that the Regional Administrator determines pose a risk

that is substantially higher than the cleanup levels or goals at the site.'' EPA is proposing that: ''In general, the Regional Administrator will designate as principal hazardous constituents: (1) Carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above 10^{-3}; and, (2) Non-carcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose. (3) The Regional Administrator will also designate constituents as principal hazardous constituents, where appropriate, based on risks posed by the potential migration of constituents in wastes to groundwater, considering such factors as constituent concentrations, and fate and transport characteristics under site conditions. (4) The Regional Administrator may also designate other constituents as principal hazardous constituents that the Regional Administrator determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.'' These provisions are discussed in detail below.

EPA believes that this is a reasonable standard for identifying high risk wastes, and is generally consistent with EPA's ''principal threats'' approach (use of the principal threats approach in the RCRA corrective action program is discussed below in this section) and EPA's emphasis on treatment of higher risk wastes. In making any determination of whether PHCs are present in CAMU-eligible waste, treatment of the waste could not be used to avoid a PHC determination that would otherwise be made (*e.g.,* by conducting such treatment prior to examining constituent concentrations in the waste to determine PHCs).

In order to identify higher risk constituents in hazardous CAMU-eligible waste, the proposed PHC approach compares risks posed by the constituents in the waste to the cleanup levels or goals established at the site—*i.e.,* levels of contamination that the oversight agency believes are protective of human health and the environment. In cases where PHCs are being designated, the CAMU will generally be a permanent disposal unit located at the site (see discussion of non-permanent CAMUs below, in the section titled ''Treatment and/or Storage Only CAMUs''); it is therefore appropriate to consider risks from wastes disposed of in the CAMU unit in the context of the cleanup standards set for the site as a whole. By considering disposal risks in the site-wide context, the proposed approach to designating PHCs would make use of the process typically used by EPA or the authorized state for establishing cleanup levels or goals at a site. Cleanup levels or goals typically take into account such factors as reasonably anticipated land use at the facility (*e.g.,* residential, industrial or agricultural) and exposure pathways of concern. At some sites, standard tables are used to determine protective cleanup levels; at others, risk assessment procedures are used to determine risks that are more tailored to the site. In cases where CAMUs are under consideration prior to final determination of tailored site-specific cleanup standards, EPA anticipates that generally the Regional Administrator would, as appropriate, use standard tables as a basis for determining PHCs. EPA seeks comment on other approaches that could be used for designating PHCs in circumstances where final determination of tailored site-specific standards has not been made.

c. *Approach to Identifying PHCs.* EPA is proposing a general approach at § 264.552(e)(4)(i) for determining which constituents ''pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site'' and should therefore be designated PHCs. First, EPA is proposing that, ''In general, the Regional Administrator will designate as principal hazardous constituents: (1) Carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above 10^{-3}; and, (2) non-carcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose.'' EPA believes that following this general approach in the rule would typically result in identification of constituents with risks that are ''substantially higher'' and thereby would screen out constituents posing lower risks, and portions of waste with low concentrations of higher risk constituents. Because there may be situations where using this approach would be inappropriate (see discussion below), EPA is not proposing that constituents meeting this description be identified as PHCs in all cases. This proposed rule would establish a general approach for how PHCs would be designated; as a result, in instances where the Regional Administrator decides not to identify constituents that would otherwise be identified as PHCs by using this approach, EPA would expect the Regional Administrator to explain that decision.

This general approach singles out risks to humans from ingestion and inhalation of constituents. The Agency believes it is appropriate to limit the circumstances where the rule identifies a specific risk level that would generally represent a higher level of risk to inhalation and ingestion, due to the greater variability and uncertainties associated with establishing risks via other routes of exposure. EPA and most states have ''look-up'' tables for soil ingestion that are commonly used in conducting cleanups (the docket for today's rule contains examples; note that the standard 10^{-6} values can be extrapolated to calculate concentrations at 10^{-3} levels); EPA expects that these tables would be used in PHC determinations (*e.g.,* by extrapolating to 10^{-3} levels from the standard 10^{-6} values). EPA also recognizes that such levels are sometimes also derived site-specifically during the cleanup process, and would be appropriate for making PHC determinations (again, by extrapolation). EPA anticipates that numbers derived for potential ingestion of soil will generally serve to identify PHCs. Inhalation numbers are less often the basis for setting cleanup goals, and thus, because PHCs are determined with reference to cleanup goals, EPA anticipates that numbers derived from potential inhalation of contaminants will determine PHCs in a more limited number of cases.

In assessing whether PHCs are present in cleanup wastes, EPA expects that the concentrations present in the wastes would be compared to cleanup levels or goals that assume that an individual is directly exposed to the constituents in the waste; *i.e.,* this comparison would not account for any engineering controls associated with management of the waste. This comparison would assume direct exposure assumptions, consistent with site use as reflected by the site cleanup standards. As described above, EPA and most states have look-up tables for cleanup levels based on direct ingestion or direct contact with soils. Direct exposure in the case of inhalation refers to the location where an individual would be exposed under reasonable exposure assumptions (this is consistent with how inhalation exposure is typically assessed in cleanup programs). The comparison of levels in the waste to site levels or goals would assume fate and transport of constituents only for assessing the potential migration of constituents from waste into groundwater or air, for the purpose of determining the risk posed by direct exposure to the groundwater, or by inhalation of air at points where receptors are located.

EPA expects that the assumption of direct exposure would be maintained for the PHC determination, despite the

fact that CAMUs will be designed such that the wastes subject to disposal will not be available for direct exposure when the CAMU is complete because of engineering and/or institutional controls. As explained more fully above, the intent of this approach is to protect against potential direct exposure to higher risk constituents in the event of failure of the long-term disposal unit.

EPA believes that today's proposed approach for identifying constituents subject to the proposed treatment standard should be readily implementable and provides a reasonable national minimum standard. The approach is designed to be implemented within the context of existing remedial programs and decision making. EPA seeks comment on this conclusion.

d. *Identifying Carcinogenic PHCs Posing a Risk via Inhalation or Ingestion.* The Agency generally sets site-specific risk goals for final cleanup of carcinogenic constituents within the risk range of 10^{-4} to 10^{-6}, with 10^{-6} being the point of departure for establishing carcinogenic risk levels of concern (*e.g.,* see Corrective Action ANPR, at 61 FR 19450). Therefore, EPA is proposing that carcinogenic constituents in CAMU-eligible waste at concentrations that pose potential risks at or above the 10^{-3} level would generally be presumed to pose risks ''substantially higher than the cleanup levels or goals at the site,'' and would therefore typically be defined as principal hazardous constituents. In the rare cases where the final cleanup goal for the site falls at the upper end of the risk range (*e.g.,* at 10^{-4}), EPA believes that it would generally be appropriate for concentrations in CAMU-eligible waste at or above the 10^{-3} level to still define principal hazardous constituents, because of the high level of risk posed at concentrations higher than the 10^{-3} level.

As discussed above, cleanup levels for sites can be set site-specifically or can be obtained from standard tables (*e.g.,* by extrapolation of the standard 10^{-6} values). There may be situations where concentrations in the CAMU wastes are greater than, but near the 10^{-3} potential risk level. In such cases, the Regional Administrator could look closely at such wastes in light of the assumptions that underlie the 10^{-3} determination (*e.g.,* their chemical characteristics and site conditions) prior to determining whether they were principal hazardous constituents. For example, if a constituent posed risks close to a 10^{-3} level, based on conservative default assumptions (*e.g,* promulgated state default tables or generic assumptions used to determine bioavailability), and the underlying assumptions are not appropriate or applicable at the site in question, the Regional Administrator could apply more appropriate site-specific assumptions to determine whether the constituents should be designated as principal hazardous constituents.

The proposed rule's general approach to identifying carcinogenic principal hazardous constituents in CAMU-eligible wastes is generally consistent with the ''principal threats'' approach used by the Superfund and RCRA corrective action programs. The principal threats approach uses a 10^{-3} risk level for carcinogens as one possible benchmark for identifying which wastes should generally be designated as ''principal threat'' source material. More detail on the principal threats approach can be found below, in the treatment section of today's preamble, and in § 300.430(a)(1)(iii)(A) and § 430(f)(1)(ii)(E) (the National Contingency Plan). See also, A Guide to Principal Threats and Low Level Threat Wastes, OSWER Directive 9380.3–06FS, November 1991; Corrective Action for Releases From Solid Waste Management Units at Hazardous Waste Management Facilities, Advance Notice of Proposed Rulemaking, 61 FR 19432, 19448, (May 1,1996); Rules of Thumb for Superfund Remedy Selection, OSWER Directive 9355.0–69, August 1997. EPA requests comment on its proposed approach to identifying carcinogenic principal hazardous constituents.

e. *Identifying Non-Carcinogenic PHCs Posing a Risk via Inhalation or Ingestion.* For non-carcinogens, the Agency generally sets cleanup goals for inhalation or ingestion not to exceed a hazard quotient of one (for individual non-carcinogens). The hazard quotient is defined as the estimated site-specific exposure (dose) over a specified period divided by the reference dose for that substance derived for a similar exposure period. A reference dose is an estimate of a daily exposure to the general population of humans (including sensitive subpopulations) that is likely to be without an appreciable risk of adverse effects during a lifetime. Reference doses typically incorporate safety factors (generally ranging from 10–1000) that address extrapolation of effects from animal studies to humans and other sources of variability. Hazard quotients are used as a measure of unacceptable exposure to non-carcinogens that produce toxic endpoints other than cancer. The hazard quotient is a comparison of a projected dose to a threshold dose above which an adverse effect is anticipated; the magnitude of an adverse effect is not always related directly to the magnitude of the hazard quotient. While a hazard quotient of one for any single constituent is generally considered acceptable, a quotient of greater than one may be cause for concern. The Agency's Integrated Risk Information System (IRIS) database has a more detailed description of reference doses and hazard quotients (see www.epa.gov/IRIS). Therefore, EPA believes that it is appropriate, as a general approach, to propose that constituent concentrations in CAMU-eligible waste that are at 10 times the hazard quotient or greater would pose risks substantially higher than the cleanup levels or goals at the site, and would typically define principal hazardous constituents. EPA requests comment on its proposed approach to identifying non-carcinogenic principal hazardous constituents.

f. *Waste to Groundwater Pathway.* Today's proposed rule also states, at § 264.552(e)(4)(i)(B), that ''the Regional Administrator will also designate principal hazardous constituents, where appropriate, based on risks posed by the potential migration of constituents in wastes to groundwater, considering such factors as constituent concentrations, and fate and transport characteristics under site conditions.'' These site-specific factors would include those that would potentially affect migration of constituents from waste in a CAMU into groundwater, such as location of the CAMU, nature of the waste and constituents (*e.g.,* mobility), how the waste will be managed (*e.g.,* the type of unit that will be used and potential rates of liquid percolation into and out of the unit), factors that affect transport of constituents to groundwater, and beneficial use of groundwater. As a general principle, in situations where cleanup is being conducted at least in part because constituents in soil or waste pose a significant potential threat through the groundwater pathway (*e.g.,* based on fate and transport modeling to potential receptors), and the cleanup waste is excavated for disposal in a CAMU, the Regional Administrator would be expected to strongly consider whether to designate such constituents as PHCs if they are not otherwise designated.

This approach to designating PHCs based on risks from the waste to groundwater pathway differs from the approach taken for inhalation and ingestion in that it does not specify a generally appropriate risk level that would typically define PHCs and it allows for consideration of additional

circumstances that potentially affect exposure. This is because, given the highly site-specific nature of the waste to groundwater pathway, EPA believes that it is not appropriate to propose a standard method or risk level for identifying PHCs based on this pathway. The migration of constituents from soil or wastes to groundwater depends on a large number of factors; as a result, the assessment of this pathway tends to be highly dependent on site-specific factors, and involves more underlying assumptions, than the assessment of risks from direct ingestion or inhalation. As a result of this site-specific complexity, and number of compounded underlying assumptions, standard default tables designed for cleanup that have with soil cleanup numbers for the soil to groundwater pathway tend to have very conservative default concentrations that, if used for assessing potential PHCs under today's proposed rulemaking, would not effectively ''screen out'' the lowest risk constituents. These standard tables typically recognize that the default levels can be overly conservative when applied at individual sites by also providing methods or options for such numbers to be developed through site-specific modeling (examples of state tables and supporting information are included in the docket for today's rulemaking). Accordingly, EPA is not proposing a general standard risk level for identifying PHCs that pose a risk from waste to groundwater out of concern that such an approach would have a high likelihood of identifying constituents as PHCs that do not ''pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site'' (the PHC standard).

g. *Designation of Other PHCs.* As described above, EPA is proposing an approach where the Regional Administrator designates as principal hazardous constituents those constituents that pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site. EPA has proposed a general approach to identifying principal hazardous constituents that emphasizes risks of toxicity and carcinogenicity to humans from direct ingestion or inhalation, and has highlighted the waste to groundwater pathway as another basis to site-specifically designate PHCs. In addition, other factors, such as ecological concerns, potential risks posed by dermal contact, or constituent mobility might, on a site-specific basis, be weighed in identifying principal hazardous constituents. For example, the Regional Administrator could determine that constituents posing risks less than 10^{-3} are principal hazardous constituents, such as a highly mobile constituent posing a 10^{-4} potential risk at a site where protection of groundwater is an especially significant concern. EPA therefore included a sentence in the proposed rule language, directly after the discussion of these specific pathways (proposed § 264.552(e)(4)(i)(C), that is intended to counter any implication that the pathways expressly discussed in the rule language occupy the universe of risks that the Regional Administrator should consider in appropriate circumstances. In addition, even if constituents were not designated as PHCs, treatment could be required through use of proposed § 264.552(i) (see the section below titled: *Additional Requirements*) or as otherwise selected during the remedy selection process.

EPA requests comment on its proposed approach to addressing the issue of designating principal hazardous constituents other than those identified by the general approach.

2. Treatment Standards (§ 264.552(e)(4)(iii)).

As provided in § 264.552(a)(1), wastes placed in CAMUs are not subject to the land disposal restriction (LDR) standards. In today's notice, EPA is proposing CAMU-specific treatment standards at § 264.552(e)(4)(iii) for waste determined to contain principal hazardous constituents (PHCs). The proposed provisions would require treatment of PHCs in the waste in accordance with either national minimum treatment standards under proposed § 264.552(e)(4)(iv) or with alternate standards determined pursuant to proposed § 264.552(e)(4)(v) that allow for site-specific adjustment of those minimum treatment levels. The proposed adjustment factors are designed to ensure that the national minimum standards are not required where they are inappropriate. The proposed adjustment factors are discussed in detail in the next section of this preamble.

The treatment standard would apply only to CAMU-eligible wastes that will be permanently disposed in the CAMU, and does not apply to wastes placed in CAMUs that are used only for treatment or storage—that is, CAMUs from which wastes will be removed at closure. Elsewhere in today's notice, EPA is proposing separate amendments for CAMUs that are used only for treatment or storage activities. Also, as discussed later, treatment in permanent CAMUs or in CAMUs used for treatment and/or storage only, can occur either before or after disposal in the CAMU.

a. *National Minimum Treatment Standards.* In today's notice, EPA is proposing to extend the treatment standard established for hazardous contaminated soil in the LDR Phase IV rule (§ 268.49; 63 FR 28556 (May 26, 1998)) to all CAMU-eligible wastes placed in CAMUs for permanent disposal. Under today's proposal, the Phase IV soil standard would apply to non-soil hazardous wastes, including sludges and debris managed in CAMUs, as well as to soils containing hazardous waste. In addition, for both soil and non-soil CAMU-eligible wastes, treatment would only be required for PHCs, not for all hazardous constituents that would be subject to treatment under the LDR requirements if the wastes were managed in land-based units other than CAMUs.

The proposed treatment standard under § 264.552(e)(4)(iv) provides that CAMU-eligible waste that the Regional Administrator determines contains principal hazardous constituents must meet the following treatment standards (or must meet an adjusted level in accordance with § 264.552(e)(4)(v), as discussed in the next section). The proposed standards for metals and non-metals would require 90% reduction in PHCs in the waste or media, measured in total constituent concentration for non-metals and for metals when a metal removal technology is used, or as measured in leachate from the treated waste, tested according to the Toxicity Characteristic Leaching Procedure (TCLP), for metals. The rule would require that the 90% reduction standard in PHCs must be met unless such treatment would result in a concentration less than 10 times the Universal Treatment Standard for that constituent; in such cases, treatment to10 times the Universal Treatment Standard would be required. This standard, as used in the Phase IV LDR regulations for contaminated soils, is commonly referred to as ''90% capped by 10×UTS;'' for details on implementation of this standard, see the description in the Phase IV preamble (63 FR 28605). The Universal Treatment Standards, which are used in the hazardous waste land disposal treatment program, are identified in § 268.48 Table UTS.

EPA is also proposing, consistent with the Phase IV requirement, that for waste exhibiting the hazardous characteristic of ignitability, corrosivity or reactivity, the waste must meet the treatment standard for metals or non-metals that are PHCs and also be treated to

eliminate any such hazardous characteristic that is present. EPA is also proposing that principal hazardous constituents in hazardous debris would have to be treated in accordance with § 268.45, the standard for debris containing hazardous waste, or by the proposed methods or to the proposed levels established for CAMU-eligible wastes containing metals or non-metals, whichever the Regional Administrator determines appropriate. These provisions are discussed below in more detail.

As discussed in the treatment overview section of this preamble, the Agency's goal in designing these treatment requirements for principal hazardous constituents is that they should provide a meaningful level of treatment and be achievable, but should not be so onerous as to discourage remediation. The Agency also sought to ensure that it would not require treatment to levels significantly below those that are necessary to protect human health and the environment. The Agency is proposing to extend the Phase IV soil standards to CAMU-eligible wastes, because, in conjunction with the proposed treatment adjustment factors, they satisfactorily meet these objectives. The Agency believes that the 90%/10xUTS standard would generally result in meaningful treatment, since 90% is a substantial level of constituent reduction or immobilization and ''10xUTS'' is a small increment over constituent concentrations based on a very stringent ''Best Demonstrated Available Technology'' (BDAT) standard. The Agency also believes the proposed standards are achievable by means other than combustion and will not discourage cleanup (see 63 FR 28556, 28603–4 (May 26, 1998)). The Phase IV soil standards were promulgated in part because of the disincentive to cleanup posed by technical difficulties of meeting treatment standards in soils without resorting to combustion. The Agency demonstrated in the Phase IV rulemaking that the ''90% reduction capped at 10xUTS'' standard is generally achievable for contaminated soils by methods other than combustion. In general, as discussed in the Phase IV rule, soil contaminated with hazardous wastes is more difficult to treat than hazardous wastes alone (63 FR 28556, 28603 (May 26, 1998)). Consequently, EPA believes that the treatment standards proposed today will typically be achievable for non-soil CAMU-eligible wastes by methods other than combustion. In situations where this general finding regarding achievability does not hold, the Agency is proposing an adjustment factor (discussed more fully below) allowing the Regional Administrator to impose a different treatment standard when achieving the proposed minimum treatment standards is ''technically impracticable.''

As discussed above, in determining minimum treatment standards, the Agency, in addition to other goals, sought to ensure that it would not require treatment significantly below levels that are necessary to protect human health and the environment. EPA therefore is proposing a factor to allow the Regional Administrator to adjust the standard ''where the levels or methods [established using the proposed treatment standard] would result in concentrations of hazardous constituents that are significantly above or below cleanup standards applicable to the site.'' This adjustment factor, along with other adjustment factors that are not directly tied to technical issues associated with the proposed minimum standards, are discussed in more detail below.

The Agency seeks comment, in general, on today's proposed minimum treatment standard for wastes determined to contain PHCs. In particular, the Agency seeks comment on the conclusion that today's standard will typically be achievable for non-soils managed in CAMUs.

b. *Debris.* In today's proposal, EPA is proposing to require the current LDR hazardous debris treatment standard at § 268.45 for debris placed in CAMUs for permanent disposal (applied, however, only to PHCs), and is also proposing, at § 264.552(e)(4)(iv)(E), to also allow treatment of debris using the standards applicable to other CAMU-eligible waste, whichever the Regional Administrator deems appropriate. Debris is defined under § 268.2(g) as solid material exceeding 60 mm in size that is intended for disposal and that is a manufactured object, or plant or animal matter, or natural geologic material, that is otherwise not excluded under the provisions of 268.2(g).

The Agency believes that the LDR debris standard at § 268.45 will be appropriate for most debris waste streams containing PHCs that are destined for disposal in a CAMU. Unlike the LDR standards for other wastes, these standards were developed taking into consideration that debris is frequently a cleanup waste, rather than an as-generated waste (57 FR 37194, 37222 (August 18, 1992). However, there are site-specific circumstances under which the Agency believes that it might be appropriate for the option to be available for such debris to meet the treatment standard for non-debris waste containing PHCs instead of that at § 268.45. For example, at some sites, debris is mixed with other cleanup waste, and separation of the debris is difficult, expensive, or would require setting up additional treatment processes. It may make sense for the debris to remain mixed with the other cleanup waste that will be placed in the CAMU and to go through the treatment process designed for the other waste, provided that the treatment is capable of accepting or treating the debris. For example, the remedy chosen for metal-contaminated soil at a site might require the soil to be processed in a pug mill prior to its being subject to solidification. In this example, most of the soil to be treated is composed predominantly of soil, with a batch of debris consisting of broken cement pieces contaminated with metals. The soil treatment train might effectively address the soil and debris components at the same time, as well as any loads that predominantly contain debris. In the latter case (loads that predominantly contain debris), if the cement were to be treated under the § 268.45 debris standards, the likely treatment would involve separation of the soil from the debris, followed by physical treatment, such as sandblasting, immobilization or chemical extraction. In other cases, where debris is not mixed with other cleanup waste, the debris might be adequately treated if it is included in the treatment process associated with the non-debris waste. In another example, contaminated organic matter, such as trees or boards, might be amenable to shredding and mixing with soils undergoing biodegradation, and achieve the 90%/10x UTS treatment requirement. In any case, the decision to use such treatment would be made as part of the overall remedy decision for the CAMU-eligible waste. The Agency seeks comment, in general, on today's proposed approach for debris.

c. *CAMU-Eligible Wastes Exhibiting the Characteristics of Ignitability, Corrosivity, or Reactivity.* EPA is proposing that any CAMU-eligible wastes subject to today's treatment requirement for metals and non-metals (*i.e.,* that contains PHCs) must, if exhibiting the hazardous characteristics of ignitability, corrosivity or reactivity, also be treated to eliminate these characteristics. This approach is an extension of the LDR Phase IV standards for soils where, in addition to treatment of all underlying hazardous constituents, characteristic soil must also be treated to remove the characteristic property. EPA believes

removal of such characteristics is appropriate in ensuring a protective CAMU, because not only do these characteristics pose a hazard if there is direct exposure to the waste, but they can potentially affect the integrity of the liner and other engineered systems of the unit. The Agency seeks comment, in general, on today's proposed approach for wastes that exhibit the hazardous characteristic of ignitability, corrosivity or reactivity.

d. *How is 90% Reduction Assessed?* As discussed in the preamble to the Phase IV rule, EPA would expect that under today's proposed rule, normal soil characterization techniques and procedures for representative sampling would be used to determine 90% reduction in constituent concentrations (63 FR 28556, 28605 (May 26, 1998)). In the context of the Phase IV rule, the Agency is developing guidance on establishing and validating the 90% reduction levels for contaminated soil. EPA intends to issue this guidance shortly as interim guidance, with an opportunity for public comment. EPA views these issues as equally pertinent to use of the 90% reduction standard for CAMU wastes, and intends to recommend the same approaches for CAMU wastes (if the Agency finalizes the 90%/10xUTS standard) when the guidance is available. In general, when assessing whether 90% reduction has been achieved, if the contaminating hazardous waste has a treatment standard that is measured by total constituent concentrations (*i.e.,* organics and cyanide), then the 90% reduction would be measured using total constituent concentrations. If the treatment standard for the contaminating waste is measured by the TCLP (*i.e.,* metals), then the 90% reduction would also be measured using the TCLP. Exceptions would be if soils contaminated with metal constituents were treated using a technology which removed, rather than stabilized metals. In such a case, the 90% reduction would be measured using total constituent concentrations.

The Agency seeks comment on today's proposed approach for assessing constituent reduction after treatment.

e. *Use of the TCLP to Assess Treatment.* EPA is proposing that the Toxicity Characteristic Leaching Procedure (TCLP) be used for assessing whether the 90%/10xUTS standard under § 264.552(e)(4)(iv)(B) and (C) has been met for metals. The TCLP test was designed to model the mobility of both organic and inorganic analytes present in liquid, solid, and multiphasic wastes, and simulates leaching of industrial solid waste (5%) with co-disposed municipal waste (95%) (see 55 FR 11798 (March 29, 1990)). Based on existing CAMUs and EPA's experience more generally in its remediation programs, the Agency expects that co-disposal of hazardous cleanup waste with municipal solid waste will not generally occur in CAMUs. As a result, EPA believes that the TCLP may not always be the most appropriate predictor of waste behavior in CAMUs. In addition, the Agency believes that the circumstances associated with disposal at a CAMU site will be well defined, and that tests other than the TCLP might be better suited on a site-specific basis to model the behavior of waste disposed in a CAMU unit. Of tests currently available, a plausible alternative may be the Synthetic Precipitation Leaching Procedure (SPLP; SW–846 Method 1312) which is identical to TCLP (SW 846 Method 1311) but uses a weak, unbuffered leaching fluid composed of nitric and sulfuric acids to simulate acid rain instead of the acetic acid leaching medium used in the TCLP. Information on the SPLP and other leaching procedures is available in the docket for today's rule. Other testing approaches may become available in the future. EPA is seeking comment on the appropriateness of using tests other than the Toxicity Characteristic Leaching Procedure (TCLP), including the SPLP, for assessing whether the 90%/10xUTS standard under § 264.552(e)(4)(iv)(B) and (C) has been met for metals.

3. Adjustment Factors to the Treatment Standard (§ 264.552(e)(4)(v))

EPA is proposing standards at § 264.552(e)(4)(v) (paragraph ''V'' in the following discussion) to provide the Regional Administrator with the discretion, when certain site-specific circumstances are present, to reduce or increase the minimum level of treatment that would be established in § 264.552(e)(4)(iv) (the national minimum standards in paragraph ''IV''). Under the proposed rule, any adjustment to treatment made when these circumstances are present would be required to be protective of human health and the environment. As discussed above, EPA believes that this approach strikes a reasonable balance between minimum national standards and flexibility to account for site and waste conditions that make meeting the national treatment standard unachievable, unnecessary, or inappropriate at the site in question.

As discussed in the introduction to the treatment section, in identifying circumstances where it would be reasonable and appropriate for the Regional Administrator to consider approving an adjusted treatment standard, EPA considered the Agency's long-standing preference for treatment of certain higher risk wastes, its experience in implementing remedies in the RCRA corrective action program (including where CAMUs are used), as well as its experience in implementing the land disposal restrictions program, which sets treatment standards primarily for as-generated wastes. The proposed adjustments also reflect EPA's experience in overseeing cleanup programs, and the recognition that cleanups are complex and varied, and that there are legitimate circumstances when treatment to the levels proposed as minimums in today's rule might not be appropriate, as well as where the minimum standard does not adequately protect human health and the environment.

In general, in determining adjustment factors, EPA sought to identify circumstances where it may be appropriate to allow for reduced treatment based on site circumstances. Of course, increased treatment may always be required at individual facilities by oversight agencies where it is considered necessary to protect human health and the environment. However, some of the circumstances identified in the adjustment factors that EPA is proposing today could be used to justify additional treatment, as well as reduced treatment. EPA has explicitly included the discretionary ability in the proposed regulations to require more treatment on the basis of certain adjustment factors as a reminder that additional treatment may be required in some circumstances.

As noted above, the proposed rule would require that, where the circumstances outlined in the adjustment factors are present, any alternative treatment standard imposed must be ''protective of human health and the environment.'' EPA included this provision as a reminder that the overall CAMU decision must be protective of human health and the environment, including where the Regional Administrator imposes an adjusted level. An example of how this would be implemented is a site where there are two technologies that are available to treat the CAMU waste. Technology A, although it would technically meet the proposed generic standards, presented an unacceptable risk to site workers (*e.g.,* because of risks of explosion). Technology B, on the other hand, did not present that risk, but could only achieve a 75% reduction in PHC concentrations. In this case, because the factors associated with adjustment factor D (''short-term risks,''

discussed below) were present, the Regional Administrator could consider an alternate standard; such standard could only be imposed where the alternate level (75% reduction) was protective. EPA expects that the Regional Administrator would undertake this assessment of protectiveness of the alternate standard as part of the overall remedy and CAMU decision process. In judging protectiveness of the alternate standard, the Agency would expect the Regional Administrator to consider, as appropriate, the characteristics of the waste, including such factors as concentrations and mobility, how the wastes will be managed (*e.g.,* the type of unit), and site characteristics, such as depth to groundwater and factors that affect fate and transport to potential receptors. Note, as discussed below under adjustment factor E, that protection offered by the engineering of the unit as the initial basis for considering an alternate standard is limited to a specific set of circumstances.

EPA is proposing the following five treatment adjustment factors at § 264.552(e)(4)(v), which can be used singly or in combination (descriptions of these proposed factors and proposed regulatory citations are given in the following discussion).

(A) Technical impracticability

(B) Consistency with site cleanup-up levels

(C) Community views

(D) Short-term risks

(E) Protection offered by engineering controls under specified circumstances:

(E)(1): Treatment standard is ''substantially met'' and the PHCs are of very low mobility

(E)(2): Treatment standard is not ''substantially met'' and cost-effective treatment used, if reasonably available, and:

(E)(2)(i): Subtitle C liner and leachate collection system; or

(E)(2)(ii): Wastes are treated and PHCs are of very low mobility; or

(E)(2)(iii): Wastes are not treated and PHCs are of very low mobility and special liner requirements are met.

Note that the proposed treatment adjustment provision in paragraph V provides that the Regional Administrator may adjust the treatment ''level or method'' in paragraph IV. In cases where the treatment under paragraph IV is to the standard of 90%, capped at 10xUTS, the Regional Administrator would be adjusting the ''level;'' in cases where the treatment is to remove a hazardous characteristic, or is a method for debris obtained from § 268.45, the Regional Administrator would be adjusting the ''method.''

a. *Adjustment Factor A. Technical Impracticability (264.552(e)(4)(v)(A)).* EPA is proposing at § 264.552(e)(4)(iii)(B)(*l*) that the Regional Administrator may, where appropriate, adjust treatment to a lower, but still protective, level based on the technical impracticability of treatment in accordance with the minimum standard in paragraph IV. In some cases, a facility owner or operator may find that it is not technically practicable to achieve specified treatment levels, or to conduct meaningful treatment at all, because of factors relating to technologies or cost. Some of the circumstances when these factors would be appropriately considered as reasons for imposing an alternate standard have been addressed in several contexts: in the land disposal restrictions program for as-generated wastes, in the form of variances, and in the remedial context, as technical impracticability determinations or waivers. Factors of cost and technical capability are also routinely discussed in the remedy decision process under Federal and State cleanup programs in cases where regulatory treatment levels are not required, but program implementors are seeking remedies that provide the most appropriate balance among remedy selection factors. Today's proposed adjustment factors borrow from these established concepts and practices (primary references are cited below).

It is EPA's intention that proposed adjustment factor A would include the concepts contained in the current ''unachievable'' LDR variance, at § 268.44(h)(1), and the ''technically inappropriate'' variance, at § 268.44(h)(2)(i). The variance at § 268.44(h)(1) provides that the Administrator may approve a site-specific variance from an applicable treatment standard if it is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard (preamble discussion of this variance is at 53 FR 31138, 31199 (August 17, 1988)). EPA believes the underlying concept contained in this variance—that it is appropriate to obtain a variance when it not physically possible to meet a specified treatment level—is equally appropriate for use in adjusting from today's proposed CAMU treatment standards. In particular, attempting to require compliance with a standard that is impossible to meet would likely result in less permanent containment remedies that would not involve treatment.

The variance at § 268.44(h)(2)(i), commonly referred to as the ''technically inappropriate'' variance, provides that the Administrator may approve a site-specific variance from an applicable treatment standard if it is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. One example of a technically inappropriate standard would be where it would result in ''combustion of large amounts of mildly contaminated environmental media where the treatment standard is not based on combustion of such media.'' The technically inappropriate variance was promulgated August 17, 1988 (53 FR 31138, 31199 (August 17, 1988)) and is discussed further in the December 5, 1997 final rule issuing clarifying amendments to this variance (62 FR 64504 (December 5, 1997)). EPA believes the underlying concept contained in this variance, that alternate treatment should be considered when a prescribed treatment level or method is technically inappropriate, is also equally appropriate for use in adjusting from today's proposed CAMU treatment standards. Combustion of large volumes of contaminated soil remains the primary example that EPA has in mind for the use of this variance, although, as discussed in the Phase IV LDR rule (63 FR 28556, 28603 (May 26, 1998)), EPA believes that the 90%/10xUTS standard, which is also applicable under today's proposal, is achievable at most sites with non-combustion technologies. This fact will likely reduce the number of circumstances where use of this reasoning for imposing an alternate standard could be considered. Regarding both of the above LDR variances, it is important to note that EPA intends only to import the general concepts underlying the variances, not the mechanics (*i.e.,* specific demonstration and other procedural requirements), into this adjustment factor. It is also important to note that the CAMU designation process provides for oversight and public involvement in the assessment of potential adjustment factors.

EPA also intends that the proposed technically impracticable adjustment factor would include the general concepts of ''technically infeasible'' and ''inordinately costly'' that are used in the remedial context. As explained in the Superfund National Contingency Plan (NCP) preamble, technical impracticability in the Superfund context should be based on

''engineering feasibility and reliability, with cost generally not a major factor unless compliance would be inordinately costly'' (55 FR 8666, 8748 (March 8, 1990)). These concepts, which are also relevant to the selection of remedies under the RCRA corrective action program, are described further in the Corrective Action for Releases from Solid Waste Management Units at Hazardous Waste Management Facilities, Advance Notice of Proposed Rulemaking (61 FR 19432 (May 1, 1996)), and in the ''Role of Cost in the Superfund Remedy Selection Process'' (Publication 9200.3–23FS, September 1996).

EPA seeks comment on its proposed approach to adjusting treatment based on the technical impracticability of treatment in accordance with the minimum requirements in paragraph IV.

b. *Adjustment Factor B. Consistency with Site Cleanup Levels (§ 264.552(e)(4)(v)(B)).* EPA is proposing at § 264.552(e)(4)(v)(B) that the Regional Administrator may adjust treatment to a higher or lower level in instances where the levels or methods in paragraph IV would result in concentrations of hazardous constituents that are significantly above or below cleanup standards applicable to the site (established either site-specifically or promulgated under state or federal law). As described below, this comparison to cleanup standards would assume that there is direct exposure of a receptor to the principal hazardous constituents in the waste.

Typically, EPA or state regulators establish cleanup levels at sites where a CAMU is under consideration. As discussed above, cleanup levels incorporate various assumptions regarding exposure, and may be based on residential, industrial or other uses. The objective in setting cleanup levels is to ensure protection of human health and the environment. In some cases, treatment of PHCs in the waste at these sites to below the national minimum standard of 90% capped at 10xUTS could result in concentration levels significantly below the cleanup level. In such cases, the treatment required in paragraph IV would be more than is necessary to ensure protection of human health and the environment. Using proposed adjustment factor B, the Regional Administrator could adjust the PHC treatment level to a level that does not implicate the situation addressed by the adjustment factor (i.e., it is not significantly below the cleanup level or goal at the site). This approach addresses similar concerns to those addressed by the current ''site-specific minimize threat'' LDR variance (Section 268.44(h)(3)), which allows for a variance from the LDR treatment requirement on the basis of a comparison to site-specific health-based levels in certain circumstances (see 63 FR 28556, 28606–28608 (May 26, 1998)).

As discussed above, the Agency also believes it is important to provide in the adjustment factors for cases where the concentration of constituents that result from application of the generic minimum standards remains significantly above site standards; in such cases, the treatment levels that result from the application of the generic levels in paragraph IV might not be sufficiently protective. For example, it may be appropriate to adjust the treatment level under this factor when the reasonably anticipated land use at the facility has been determined to be residential and the initial concentrations are sufficiently high, such that, when they are reduced by 90%, they remain at levels that are significantly above the site cleanup levels.

As an implementation matter, EPA intends that the approach in using this adjustment factor would be to compare levels that would be attained through treatment to the generic standards to site cleanup levels that would customarily be established for the site. EPA expects that when applying this adjustment factor, comparisons would be to site levels (either established site-specifically or promulgated under state or federal law) that assume there is direct exposure of a receptor to the constituents. As explained above, site-specific cleanup standards are typically derived after consideration of factors that influence the risk potential at the site, including fate and transport considerations (e.g., in setting levels in soils that are protective of groundwater), distinctions between residential, industrial and other types of land use, and location of potential receptors. In the use of this adjustment factor, however, protection offered by the engineering of the CAMU itself would not be included in the calculation of adjusted treatment standards. In other words, in determining whether imposition of the generic standards would result in concentrations significantly above or below cleanup standards, the Regional Administrator will compare the risks associated with the site levels or goals based on direct exposure, to the risks expected under the same direct exposure scenario for levels that would be attained under the generic standards. This direct exposure assumption is similar to that used in the current ''site-specific minimize threat'' LDR variance (Section 268.44(h)(3)). Because the Agency believes cleanup programs routinely establish site goals based on direct exposure scenarios (without consideration of the engineered unit), the Agency did not specifically make the use of a direct exposure scenario a condition in the adjustment factor B language. The Agency requests comment on the accuracy of its beliefs as to how cleanup programs set site goals or levels and whether there is enough uncertainty to warrant an express requirement for use of direct exposure assumptions in the regulations.

c. *Adjustment Factor C. Community Views (§ 264.552(e)(4)(v)(C)).* EPA is proposing at § 264.552(e)(4)(v)(C) that the Regional Administrator may adjust treatment to a higher or lower level based on the views of the affected local community on the treatment levels or methods to be potentially employed to meet the generic treatment standard in paragraph IV. At some sites, communities express concerns regarding such factors as long-term reliability of remedies, worker safety associated with technologies, cross-media transfer of pollutants, and interference with their day-to-day lives (*e.g.,* from traffic, odors or noisy remedies). EPA anticipates that such community concerns could, in many circumstances, appropriately provide the impetus to either reduce or increase treatment. EPA believes that, consistent with the remedy selection process for RCRA corrective action and for CAMU determinations, the public should have the opportunity to participate through the notice and comment process in the selection of the treatment or remedy, which includes selection of treatment levels.

The public participation provisions of the CAMU rule, as they would be amended under today's proposal (discussed in detail below) provide for public input on all aspects of the CAMU decision for all CAMUs. EPA believes it is reasonable to include public views as an explicit criterion to justify adjustment from the treatment requirement where appropriate, because, in the Agency's experience, treatment has been an area of specific concern to the public. A notable example is local concerns regarding the use of combustion technologies.

Under today's proposed amendments, the community would be given the opportunity to weigh in on the treatment decision as part of the notice and comment process when the CAMU is proposed, prior to its final designation. In addition, at some sites, prior to proposal of the CAMU, owners

or operators or the oversight agency may be aware of community concerns associated with cleanup sites and would take these into account in developing CAMU proposals. EPA seeks comment on its proposed approach to adjusting treatment based on views expressed by the community on the treatment levels or methods to be potentially employed to meet the proposed generic treatment standard.

d. *Adjustment Factor D, Short-Term Risks (§ 264.552(e)(4)(v)(D)).* EPA is proposing at § 264.552(e)(4)(v)(D) that the Regional Administrator may adjust treatment to a higher or lower level based on the short-term risks presented by the on-site treatment method necessary to achieve the levels or treatment methods in the generic treatment standard in paragraph IV. Certain technologies are capable of achieving treatment levels but in doing so, may present unacceptable risks in the short term to workers or the public. In other cases, the analysis necessary to determine if the treatment standard has been met might present unacceptable hazards, such as for soils containing explosive materials.

Short-term risks associated with remedies and proposed treatment technologies are routinely considered during the remedy selection process under the RCRA corrective action program and may form the basis for determining that certain methods of treatment are not appropriate (Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Management Facilities, Proposed Rule, 55 FR 30798, 30824 (July 27, 1990)). Today's proposed adjustment factor would allow for the same considerations in the context of adjusting treatment levels for principal hazardous constituents in CAMU-eligible wastes. EPA seeks comment on its proposed approach to adjusting treatment based on the short-term risks presented by the on-site treatment method necessary to achieve the levels or treatment methods in the generic treatment standard.

e. *Adjustment Factor E. Engineering Design and Controls (§ 264.552(e)(4)(v)(E)).* EPA is proposing at § 264.552(e)(4)(v)(E) that the Regional Administrator may, under certain defined circumstances, adjust treatment of CAMU-eligible waste to an alternative level, or in some cases, to not treat at all, based on the long-term protection offered by the engineering design of the CAMU and related engineering controls. This adjustment factor defines the circumstances, taken in the context of the facility setting, under which the Regional Administrator could consider reducing the treatment standard based on the features of CAMU design and related controls.

As described above, EPA's approach to treatment in today's proposal reflects uncertainties associated with long-term reliability of containment units. The most difficult issue discussed during discussions with stakeholders was how to identify the circumstances under which adjustments to treatment could be justified based on the design of the CAMU alone (*i.e.,* without other extenuating circumstances, as provided for in the other adjustment factors). EPA examined the Agency's past CAMU decisions, and Agency experience in the land disposal restrictions (LDR) program and in overseeing the RCRA corrective action program, and, based on this evaluation, is proposing an adjustment factor which limits the situations where the Regional Administrator may approve a reduced treatment standard, based on the logic that the engineered design makes the generic treatment standard inappropriate. EPA seeks comment on the appropriateness of these factors and whether there are other circumstances where design of the unit would warrant adjustment, on a site-specific basis, from the generic treatment standard.

Today's proposal limits the consideration of the design of a unit to justify a change from the generic treatment standard to two scenarios: first, under factor E(1), situations where the generic treatment standard has been ''substantially met;'' second, under factor E(2), situations where the generic treatment standard has not been ''substantially met,'' but cost-effective treatment has been used, unless, after review of appropriate treatment technologies, cost-effective treatment is not reasonably available. In addition, for adjustment factor E to be used, PHCs in the wastes generally must be of ''very low mobility,'' which, as is explained more fully below, EPA believes is appropriate, because this adjustment factor relies on the ability of engineering controls to contain waste. The exception to the restriction to ''very low mobility'' constituents is adjustment provision E(2)(i), where the wastes are to be disposed in a unit that provides superior protection (*i.e.,* meets the Subtitle C liner and leachate collection requirements for new Subtitle C units). Finally, factor E(2)(iii) allows protection offered by the engineering design of the unit to justify a decision to require no treatment at all only for very low mobility wastes where there is no cost-effective treatment reasonably available; under these circumstances, proposed factor E(2)(iii) includes specified unit design conditions or equivalent protection to ensure a minimum level of protection for long-term containment of the wastes.

The exact language in proposed adjustment factor E is repeated here to assist the reader in following the discussion of each provision:

§ 264.552(e)(4)(v)(E) the long-term protection offered by the engineering design of the CAMU and related engineering controls:

(1) where the treatment standards in 264.552(e)(4)(iv) are substantially met and the principal hazardous constituents in the waste or residuals are of very low mobility; or

(2) where cost-effective treatment has been used, or where, after review of appropriate treatment technologies, the Regional Administrator determines that such treatment is not reasonably available, and:

(i) The CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at § 264.301(c) and (d), or

(ii) The principal hazardous constituents in the treated wastes are of very low mobility, or,

(iii) Where wastes have not been treated and the principal hazardous constituents in the wastes are of very low mobility, and either the CAMU meets the liner standards for new, replacement, or laterally expanded CAMUs in paragraph (e)(3)(i) and (ii) of this section, or the CAMU provides substantially equivalent protection.

In addition, to assist the reader with following this adjustment factor, the following chart describes the potential availability of proposed adjustment factor 264.552(e)(4)(v)(E):

If	And if	And if	Then
Treatment standards in § 264.552(e)(4)(iv) are *not* substantially met.	Cost-effective treatment has *not* been used.	RA has *not* determined that cost-effective treatment is not reasonably available.	You may *not* consider adjusting based upon the ''long term protection offered by the engineering design of the CAMU and related controls.''

If	And if	And if	Then
Treatment standards in § 264.552(e)(4)(iv) are substantially met.	The PHCs in the waste are of very low mobility.	.....	You may consider adjusting based upon the ''long term protection offered by the engineering design of the CAMU and related controls.'' § 264.552(e)(4)(v)(E)(*1*)
Cost-effective treatment has been used.	The CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at § 264.301(c) and (d).	.....	You may consider adjusting based upon the ''long term protection offered by the engineering design of the CAMU and related controls.'' § 264.552(e)(4)(v)(E)(*2*)(*i*)
Cost effective treatment has been used.	The PHCs in the waste are of very low mobility.	.....	You may consider adjusting based upon the ''long term protection offered by the engineering design of the CAMU and related controls.'' § 264.552(e)(4)(v)(E)(*2*)(*ii*)
The RA determines that cost-effective treatment is not reasonably available.	The CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at § 264.301(c) and (d).	.....	You may consider adjusting based upon the ''long term protection offered by the engineering design of the CAMU and related controls.'' § 264.552(e)(4)(v)(E)(*2*)(*i*)
RA determines that cost-effective treatment is not reasonably available.	PHCs in the waste are of very low mobility.	Either the CAMU meets or exceeds the liner standards for new, replacement, or laterally expanded CAMUs in paragraph (e)(3)(i) and (ii) of this section, or the CAMU provides substantially equivalent or greater protection.	You may consider adjusting based upon the ''long term protection offered by the engineering design of the CAMU and related controls.'' § 264.552(e)(4)(v)(E)(*2*)(*iii*).

(1) Assessment of Long-Term Protection Offered by the Unit. When the waste and site circumstances provided for in adjustment factor E are present, the Regional Administrator would have the discretion to adjust treatment based on the long-term protection offered by the engineering design of the CAMU and related engineering controls when such adjustment is protective of human health and the environment (§ 264.552(e)(4)(v)). In general terms, such an assessment of long-term protection would focus on the protectiveness offered by the unit and any associated systems over the long-term, considering such appropriate factors as unit reliability, characteristics of the waste and constituents (*e.g,* mobility, concentrations, associated matrix), and the geologic setting of the CAMU unit. This assessment would be made in the context of the cleanup standards specific to the site. EPA intends that the phrase ''engineering design of the CAMU and related engineering controls'' would include the design of the unit itself (*e.g.,* presence and type of liner, leachate collection, cap), as well as any associated engineering systems, such as slurry walls, systems that produce inward hydraulic gradients in the vicinity of the unit, French drains, associated pump and treat systems and groundwater monitoring systems.

Along with looking at the unit that the waste will be disposed in, any assessment of long-term protection in the context of adjustment factor E (*i.e.,* in the Regional Administrator's determination that an alternate standard is protective of human health and the environment under § 264.552(e)(4)(v)) would include consideration of whether the waste and constituents pose any potential for unacceptable releases over the long-term. This consideration would include examination of such factors as the concentration and mobility of the PHC constituents in the disposal matrix and site environment, and how the wastes might be affected by potential liquid infiltration into the unit.

f. *Adjustment Factor E(1). Treatment That is Substantially Met (§ 264.552(e)(4)(v)(E)(1)).* With this provision, EPA is proposing that the Regional Administrator may adjust treatment to an alternative level based on the long-term protection offered by the engineering design of the CAMU and related engineering controls where the generic treatment standards are ''substantially met'' and ''the principal hazardous constituents in the hazardous waste or residuals are of very low mobility.'' EPA included this proposed provision to address concerns raised by stakeholders that, in certain situations where the generic minimum requirements will be substantially met, it might not make sense to impose strict adherence to the minimum standard given the level of protection offered by ''substantial'' compliance with the treatment standards and the added protection offered by a specific CAMU design. EPA's discusses the term ''substantially met'' in more detail below.

(1) Very Low Mobility. EPA believes that consideration of adjustment from the generic standard in paragraph IV where the standards have been ''substantially met'' may be appropriate only in cases where the principal hazardous constituents (PHCs) or residuals are of ''very low mobility.'' The general concept embraced by ''very low mobility'' is that, although PHCs of very low mobility may present significant risks upon direct exposure, such constituents have very little ability to migrate from the waste to receptors through media such as air, soil or water at levels that are of concern to human health and the environment. Under these circumstances, even if there is an unanticipated failure of the unit, the constituents that have not been as

aggressively treated will be those that have the least potential to migrate to a receptor.

The ability of constituents to migrate is a function of the physical and chemical properties of the constituents themselves, and of site-specific conditions, including the nature of the waste that the constituents are in, conditions associated with the unit itself and of the media surrounding the CAMU unit. As a result, determination that a constituent is of ''very low mobility'' is a site-specific determination.

Given the site-specific nature and the complexity of determining whether constituents are of very low mobility, the Agency does not believe that it is appropriate to propose a quantitative approach for designating a constituent as being of ''very low mobility.'' However, the following examples serve to further illustrate the general concept embodied in this proposed adjustment factor. One example of immobile constituents are certain metals, such as lead, that have a strong affinity for organic matter and can, under proper site conditions (which are typically strongly affected by pH conditions), demonstrate very low mobility. Another common example is polyaromatic hydrocarbons (PAHs), such as benzo(a)anthracene and benzo(a)pyrene. PAHs can reliably be considered non-mobile constituents (with the notable exception of when the PAHs are concentrated to the extent that they are in a free-phase—*i.e.,* as non-aqueous phase liquids (NAPLs)—or when they are dissolved in a mobile substrate, such as oil). PAHs can be present as a direct result of historical industrial processes, or may be found as a residuum of formerly more complex mixtures of organic contamination that have been exposed to breakdown processes in the environment, or as a result of applying biological treatment technologies to the wastes. At some sites, such as petroleum refineries, where PAHs can be found in high concentrations in old refinery wastes and contaminated soils, PAHs tend not to be found in significant concentrations in groundwater, because of their low solubility and tendency to adhere to organic matter in soils and sludges.

(2) Substantially Met. EPA interprets ''substantially met'' as follows, for the purposes of this proposed adjustment factor. Some treatment technologies will ''substantially,'' but not precisely, attain 10 × UTS or 90% treatment of all principal hazardous constituents in the waste. For example, the most appropriate technology at a site for wastes containing organic contaminants that have low migration potential (*e.g.,* certain polyaromatic hydrocarbons) might be biodegradation. This technology might come close to, but not achieve, 10 x UTS for the constituents with low migration potential. Given that the contaminants have a low migration potential, the Regional Administrator could assess site-specific factors that affect mobility, including the geologic setting, precipitation and evaporation, and make the determination that an alternate treatment standard based on this technology would provide long-term protection of human health and the environment. In another example, the treatment standards would be substantially met where the overwhelming majority of constituents have been treated to meet the treatment standards, but a very few immobile constituents do not meet the standards.

g. *Adjustment Factor E(2). Use of Cost-effective Treatment (§ 264.552(e)(4)(v)(E)(2)).* EPA is proposing at § 264.552(e)(4)(v)(E)(2) that the Regional Administrator may adjust treatment to an alternate level based on the long-term protection offered by the engineering design of the CAMU and related engineering controls ''where cost-effective treatment has been used, or where, after review of appropriate treatment technologies, the Regional Administrator determines that such treatment is not reasonably available.'' This proposed adjustment factor, when used to make an adjustment from the generic treatment standard based on protection offered by the unit, would require that cost-effective treatment be used, if it is reasonably available. This approach addresses the Agency's concerns regarding the uncertainties of long-term containment.

Adjustment factor E(2) contains three provisions that could potentially be used (E(2)(i), (ii), and (iii)), depending on whether cost-effective treatment is reasonably available. Adjustment factor E(2)(i) would be available where the CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at § 264.552(e)(3). This factor would be available in cases where cost-effective treatment is used and where the Regional Administrator determines cost-effective treatment in not reasonably available. Adjustment factor E(2)(ii) would be available where cost-effective treatment is used, and the principal hazardous constituents in the treated waste are of very low mobility. Adjustment factor E(2)(iii) would be available where cost-effective treatment is not reasonably available, the PHCs in the untreated wastes are of very low mobility, and certain specified liner requirements have been met.

(1) What is ''Cost-Effective Treatment?'' The concept of ''cost-effectiveness,'' as used in this proposed adjustment factor, would mean that additional cost from potentially increased treatment should provide a proportionate increase in protection by virtue of that increased treatment. Under the proposed approach, EPA would intend that any assessment of cost-effectiveness be made based on a reasonable review of the costs and the effectiveness of the treatment and on best professional judgement of the oversight agency. Of course, the Agency does not intend that cost considerations would allow an unprotective CAMU to be approved.[12]

(2) What Does a Review of Appropriate Treatment Technologies Constitute? EPA is proposing under adjustment factor § 264.552(e)(4)(v)(E)(2), that any determination that cost-effective treatment is not available would be made after a review of appropriate treatment technologies. To meet this criterion, EPA would expect that the level of effort would be similar to that typically used in the remedy selection process when the oversight agency requires identification of treatment technologies that are able to meet specified levels as part of the remedy. The level of effort involved in this review would be waste- and site-specific, depending on such factors as the waste types, constituents present, and waste volumes. As in all CAMU decisions, the review of appropriate treatment technologies should be documented.

(3) What Does it Mean That Cost-Effective Treatment is ''Not Reasonably Available?'' Today's proposed treatment adjustment factor § 264.552(e)(4)(v)(E)(*2*) contains the presumption that treatment will be employed if it is reasonably available and cost-effective. In theory, an individual treatment technology may appear to be cost-effective and capable of achieving a treatment standard. However, if such a technology is not ''reasonably available,'' the Agency does not believe it would be appropriate to require the use of it. An assessment of whether potential treatment

[12] As discussed in the 1996 corrective action ANPR, cost-effectiveness is considered as a factor during corrective action remedy selection to choose between alternative remedial options that meet the protectiveness criteria for a remedy at the site. Used in this context, cost-effectiveness does not equate to ''less expensive,'' but is one of several factors used to guide remedy selection (61 FR 19432, 19449 (May 1, 1996)).

technologies are reasonably available for use is commonly conducted by cleanup programs as remedial alternatives are considered. EPA intends to use the general considerations used in the remedy selection process, as appropriate, in considering whether treatment technologies are ''reasonably available'' under this adjustment factor. These considerations include availability and timing of goods and services, technical feasibility and reliability, and administrative feasibility.

(4) Adjustment Factor E(2)(i). Subtitle C Standards (§ 264.552(e)(4)(v)(E)(2)(i)). This proposed provision, at § 264.552(e)(4)(v)(E)(2)(i), would allow the Regional Administrator to consider adjusting treatment in cases where cost-effective treatment will be used, if it is reasonably available, and the CAMU is constructed to meet the liner and leachate collection requirements for new, replacement, or laterally expanded Subtitle C units at § 264.301(c) and (d).

This provision of adjustment factor E is not limited to PHCs of very low mobility. When PHCs are not of very low mobility, and therefore have a greater chance of reaching a receptor if containment fails, EPA believes it is appropriate to propose to require as a minimum these Subtitle C liner and leachate collection standards, because they offer a high degree of protection. When Subtitle C compliant designs are used, EPA would generally expect such units to provide adequate long-term protection. As discussed above, EPA is also proposing performance criteria for caps, including the requirement that the permeability of the cap be less than or equal to that of the liner system, that would further add to the protectiveness provided by units that meet the Subtitle C liner and leachate collection standards. In addition, Subtitle C liner and leachate collection system designs are well established from their use in the as-generated hazardous waste program. EPA believes that they should therefore be readily implementable for CAMUs, when their use is warranted.

As a general matter, EPA does not expect that CAMUs would typically be constructed to meet the Subtitle C requirements for new units; however, units meeting Subtitle C design standards could be appropriate for CAMUs under site-specific circumstances, particularly where the treatment requirements were reduced. To date, several existing CAMUs have incorporated such design standards (see CAMU Site Background Document, included in the docket for today's rule).

(5) Adjustment Factor E(2)(ii). Cost Effective Treatment Reasonably Available (§ 264.552(e)(4)(v)(E)(2)(ii)). This proposed provision, at § 264.552(e)(4)(v)(E)(2)(ii)), would allow the Regional Administrator to consider adjusting treatment based on unit design where cost-effective treatment will be used and the PHCs in the waste are of very low mobility. EPA provided for this adjustment factor to address situations where cost-effective treatment is available for the low mobility constituents, but the treatment will not meet or substantially meet the generic treatment standards in paragraph IV (and thus could not potentially use proposed adjustment factor E(1)).

EPA's justification for including the limitation to very low mobility constituents in adjustment factor E(2)(ii) is consistent with that described above for adjustment factor E(1), where the treatment standards for very low mobility constituents are substantially met. The Agency believes that it is reasonable for the Regional Administrator to make such an adjustment where it can be found that the containment system offers adequate protection, with the knowledge that, if there is unexpected containment failure, the constituents have been treated to a meaningful extent (although not to the generic minimum standards) and are unlikely to reach a receptor because they are of very low mobility.

(6). Adjustment Factor E(2)(iii). Cost-Effective Treatment is Not Reasonably Available (§ 264.552(e)(4)(v)(E)(2)(iii)). This adjustment factor, proposed at § 264.552(e)(4)(v)(E)(2)(iii), would allow the Regional Administrator to potentially adjust treatment based on unit design in cases where cost-effective treatment is not reasonably available and the principal hazardous constituents in the waste are of very low mobility. In this case, the CAMU would be required to, at a minimum, be designed in accordance with the liner standards proposed today for new, replacement, or laterally expanded CAMUs in § 264.552(e)(3) (that is, the modified Subtitle D standards), or provide equivalent protection.

As discussed above, EPA is proposing that when PHCs in the waste are of ''very low mobility,'' it may be appropriate, under several circumstances, for the Regional Administrator to consider adjustment to the treatment standards for CAMU wastes based on unit design. In the two cases discussed above addressing low mobility PHCs (*i.e.*, either where the generic minimum treatment standards have been ''substantially met,'' under adjustment factor E(1) or where cost-effective treatment has been used, under adjustment factor E(2)(ii), EPA did not choose to add further conditions on the CAMU unit itself. Additional conditions are appropriate under E(2)(iii), however, because there would be no treatment of PHCs. Although the very low mobility constituents are unlikely to reach receptors, the risks to such receptors if there were such exposure are greater because there has been no treatment. The Agency therefore believes it would be appropriate to require an additional measure of assurance regarding containment. The Agency selected the standards proposed today for new CAMUs, or equivalent, because EPA believes they would offer that greater assurance without recreating disincentives to cleanup that the CAMU rule is meant to address.

(7). Liner Standards for Adjustment E(2)(iii). The proposed minimum liner requirement in adjustment factor § 264.552(e)(4)(v)(E)(*2*)(*iii*) can be met in two ways. The first is to meet the minimum liner standard proposed today at § 264.552(e)(3) for CAMU units that are new, replacement, or lateral expansion units. The § 264.552(e)(3) standard has two provisions—a detailed composite liner standard (proposed § 264.552(e)(3)(i), based on the Subtitle D standards for municipal solid waste landfills), and a provision with two options for alternate designs (proposed § 264.552(e)(3)(ii)(A) and (B)). These provisions are described above in detail in the section titled Liner Standard.

The second way to meet the minimum liner requirement under proposed adjustment factor E(2)(iii), is to meet an alternate standard, provided that ''the CAMU provides substantially equivalent protection'' to the proposed liner standards at § 264.552(e)(3). EPA intends that this alternate standard would allow for the consideration of the entire CAMU unit as well as location features in making a determination that the CAMU provides ''substantially equivalent protection.'' For example, if an existing unit without a liner were to be potentially used for a CAMU under the conditions of this adjustment factor, the Regional Administrator could examine the protectiveness offered by the CAMU components (*e.g.*, cap, groundwater monitoring, ancillary engineering features), as well as mobility of constituents in the waste within the unit (which will be very low), and geology associated with the unit, in assessing equivalent protection. In another example, soils contaminated with PAHs, with no cost-effective method of treatment reasonably available, are proposed to be disposed in an existing unit with a liner that does not meet the § 264.552(e)(3) standards. Given the very low mobility of these

constituents and the calculated infiltration rate of rainwater into the unit, it might be calculated that only very low concentrations of constituents would potentially migrate from the unit, that any migration would be for a very short distance, and that the CAMU would provide substantially equivalent protection to the liner standard under § 264.552(e)(3).

4. Request for Comment on Treatment Standard Approach

The Agency requests comment on the above approach to treatment and adjustment factors in general. As described above, the adjustment factors were designed to identify circumstances where requiring compliance with the generic minimum standards might be inappropriate. Has the Agency captured the appropriate range of circumstances? Do the proposed factors appear flexible enough to address all such circumstances?

Also, in crafting these factors, the Agency looked for guidance to existing exceptions in the Agency's Subtitle C regulations that are specific to cleanup wastes. In particular, the Agency examined the cleanup-related treatment variance provisions in the LDR program and incorporated some of the concepts there into today's proposed adjustment factors (see discussion above). The Agency did not, however, specifically incorporate the ''environmentally inappropriate'' variance at § 268.44(h)(2)(ii). This variance is meant to provide relief in circumstances where imposition of an LDR standard would likely discourage aggressive remediation. The Agency did not include a comparable adjustment factor in today's proposal because the proposed adjustment factors are intended to more specifically identify circumstances that might, among other things, create that same disincentive. The Agency requests comment on this conclusion.

5. Treatment Within a Reasonable Time (§ 264.552(e)(4)(vi))

In today's proposal, CAMU wastes can be treated prior to or after placement in the CAMU. EPA is proposing, at § 264.552(e)(4)(vi), that treatment must be completed prior to, or within a ''reasonable time'' after placement of the waste in the CAMU. During discussions with CAMU stakeholders, the concern was raised that because the 1993 CAMU rule does not set a standard for the duration of treatment, a remedy could in effect become sham treatment that might go on for many years with little prospect of success. A primary example of post-disposal treatment is biotreatment, which EPA expects would typically achieve its goals within a single season, or at most, within a few seasons. Under today's proposal, EPA would expect treatment to be completed within months or years, not decades, except in very unusual circumstances. Interpretations of ''reasonable time'' would be made site-specifically in the context of the remedy selected for the waste. The Agency seeks comment on its proposed approach to addressing when treatment may be conducted within a CAMU.

6. Assessing Compliance with the Treatment Requirement (§ 264.552(e)(4)(vii))

EPA has included a provision in today's proposed treatment requirement at § 264.552(e)(4)(vii) to allow, on a discretionary basis, for the analysis of a subset, rather than the complete set, of principal hazardous constituents present in the waste to assess whether treatment standards have been met. EPA believes that it would not be necessary in many cases to require analysis of all constituents being treated to accurately assess whether the treatment standards have been met for all constituents. EPA believes that this flexibility is appropriate, where applicable on a waste-and site-specific basis, to avoid unnecessary analysis, which can be expensive.

The strategy of analyzing a subset of constituents in cleanup wastes to assess the efficacy of treatment is commonly used in cleanups. This approach follows common-sense scientific principles and involves consideration of such factors as difficulty of treatment, and grouping of constituents with similar treatment properties. EPA has included these two considerations in the proposed rule language. Of course, in selecting the constituents to be used for analytical purposes, the Regional Administrator would also consider the ability to analyze the constituents.

A general strategy is to analyze, within a group of constituents with similar treatment properties, the most difficult constituents to treat, following the reasoning that treatment of the most difficult to treat constituents will result in treatment of the other constituents as well. For example, when wastes containing mixtures of organic molecules are subjected to bioremediation, certain compounds tend to be more recalcitrant and take longer to treat. It might be reasonable to focus analysis on measurement of the compounds that are most resistant to biodegradation to assess whether the treatment standard had been met. Any determination that such a treatment analysis approach can be used at a CAMU would be made by the oversight agency on a site-specific basis, in consideration of factors such as those described above, and would be documented in the decision document (*e.g.*, workplan) and incorporated into the permit or order. EPA seeks comment on allowing, on a site-specific basis, for analysis of a subset of principal hazardous constituents to assess whether treatment standards have been met.

H. Constituents at or Below Remedial Levels (§ 264.552(g))

EPA is proposing, at § 264.552(g), that ''CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the requirements for liners at § 264.552(e)(3)(i), caps at § 264.552(e)(6)(iv), groundwater monitoring requirements at § 264.552(e)(5) or the design standards at § 264.552(f) for treatment and/or storage-only CAMUs.'' The basic reasoning behind this provision is that, if constituent levels in wastes placed in a CAMU are at or below levels that are considered protective at the facility, it is not necessary to require that the wastes be disposed within an engineered unit or to have associated groundwater monitoring. Under the current CAMU rule, the flexibility exists to make disposal decisions consistent with this approach. However, because today's proposed amendments would require minimum design requirements for CAMUs, EPA is proposing provision § 264.552(g) to retain this flexibility.

EPA anticipates that proposed § 264.552(g) would be applicable under circumstances where owners or operators seek a CAMU because, without use of a CAMU, the RCRA land disposal restrictions would continue to apply to the CAMU-eligible waste, even where the CAMU-eligible waste is no longer otherwise considered hazardous. This would occur, for example, in certain cases where a ''contained-in'' decision (see discussion below) has been made because the hazardous constituents are at concentrations below health-based levels, but the concentrations remain above land disposal restriction treatment standards. EPA also anticipates that proposed § 264.552(g) would be used for ''non-media'' (*e.g.*, CAMU-eligible sludges) for which a contained-in determination cannot be made.

EPA included ''at or'' before the word ''below'' in this proposed provision because it is not always necessary to

treat ''below'' a goal to achieve the goal. In addition, EPA has included the phrase ''where all wastes'' to make clear that if an existing unit is used as a CAMU that has wastes with concentrations above remedial levels or goals applicable to the site, this provision would not be applicable, because, among other requirements, such a unit should remain subject to today's proposed capping requirement at § 264.552(e)(6)(iv).

Today's proposed approach is consistent with the current ''contained-in'' policy, under which contaminated environmental media (e.g., soil or water) are not considered to ''contain'' hazardous waste when concentrations of hazardous constituents are below heath-based levels appropriate to the site. The determination that contaminated media do not contain hazardous waste is commonly referred to as a ''contained-in determination.'' A general description of the contained-in policy, with references, is given in the October 1998 memorandum, ''Management of Remediation Waste Under RCRA'' (EPA530–F–98–026).

EPA seeks comment on its proposed approach to address situations where wastes are placed in CAMUs with constituents at or below remedial levels or goals applicable to the site.

I. Treatment and/or Storage Only CAMUs (§ 264.552(f))

In today's notice, EPA is proposing amendments that make distinctions between CAMUs that are used for treatment and/or storage activities only and CAMUs in which wastes will remain in place after closure. Under today's proposal, treatment and/or storage only CAMUs would not be subject to the treatment requirements or the minimum technical standards for liners and caps (described above), with certain exceptions for longer-term treatment or storage activities. Specifically, EPA is proposing to replace certain provisions of the CAMU rule with certain design, operating, and closure standards provisions from the staging pile regulations at § 264.554 (finalized under the HWIR-media regulations (63 FR 65874 (November 30, 1998))), for CAMUs that are used for treatment and/or storage only. Although today's proposed treatment standards would not apply to CAMUs used for treatment and/or storage only, the Regional Administrator would not be prevented from requiring such treatment for waste in such a CAMU as part of the overall CAMU or remedy decision.[13]

EPA believes it is necessary to propose amendments that are specific to treatment or storage-only CAMUs. This is because today's proposed amendments, discussed above, that provide for minimum treatment and design requirements, were designed with the typical CAMU in mind—that is, a CAMU that will be used for long-term, permanent management of cleanup wastes. Without the provisions being proposed here, the standards for permanent management would remove certain flexibility that is present in the existing CAMU rule for treatment and/or storage only activities. The design, operation and closure standards that EPA is proposing to adopt from the staging pile regulations are specifically tailored for shorter-term waste management activities, and are therefore typically better suited for treatment and/or storage only CAMUs, than are the proposed regulations that would apply to long-term, permanent management.

1. Current CAMU Regulations for Treatment and/or Storage only CAMUs

Under the existing CAMU rule, the Regional Administrator may approve CAMUs solely for the treatment and/or storage of cleanup wastes. Many cleanups require non-permanent disposal waste management, such as pre-treatment or staging of cleanup wastes prior to additional management on- or off-site, or storage (for a longer period than allowed under the staging pile regulation) prior to treatment in a non-land-based unit. The existing CAMU rule does not contain standards that are specific to non-permanent CAMUs. The CAMU designation factors at § 264.552(c) address the design, operation and closure of any CAMU—those that are used for permanent waste disposal as well as CAMUs that are used for treatment or storage activities only. The existing rule, does, however, recognize the distinction between temporary and permanent CAMUs in that several provisions apply solely to CAMUs where waste remains in place after closure. For example, two of the CAMU designation factors, (c)(4) and (c)(7), and certain closure standards at § 264.552(e)(4) apply solely to permanent CAMUs where waste remains in place after closure.

2. Staging Pile Standards

EPA promulgated standards for staging piles on November 30, 1998 (63 FR 65874) at § 264.554. Staging piles consist of accumulations of solid, non-flowing remediation waste that is used only during remedial operations for temporary storage at a facility. EPA promulgated these standards to provide greater flexibility for the protective storage of remediation wastes prior to completion of remedial activities. Staging piles are subject to design, operation and closure standards that were specifically designed with short-term waste management in mind, and without extensive, prescriptive standards such as are required for units involved in longer term use. Accordingly, staging piles are restricted to an operating term of two years, unless an extension of up to 180 days is approved. In addition, treatment is not allowed in staging piles. As EPA explained in issuing the staging pile regulations, owners or operators who sought to treat wastes in a staging pile, or who needed to store wastes for more than two years, could seek a CAMU (63 FR 65874, 65918 (November 30, 1998).

Under the current regulations, cleanups that necessitate storage for more than the staging pile time limit, or that require treatment, could do so under a CAMU (or use tanks or containers, which are frequently not an economic option, as is discussed in the staging pile preamble (63 FR 65874, 65908 (November 30, 1998))). However, today's proposed standards for CAMUs where waste will remain in place after closure would largely eliminate the CAMU as a practical option for undertaking these treatment or storage only activities, unless special provisions are proposed for treatment and/or storage only CAMUs. EPA believes that certain provisions of the staging pile regulations, supplemented as described below, are appropriate for this purpose.

3. Proposed Standards for Treatment and/or Storage CAMUs

Under today's proposed changes, CAMUs that are used for treatment and/or storage only would be subject to the staging pile performance criteria at § 264.554(d)(1)(i)–(ii) and § 264.554(d)(2) in lieu of the CAMU designation criteria at § 264.552(c). The staging pile performance criteria at § 264.554(d)(1)(i)–(ii) and § 264.554(d)(2) require the Regional Administrator to establish standards and design criteria for a staging pile that facilitates a reliable, effective and protective remedy that is designed to prevent or minimize releases and

[13] Note that wastes managed in treatment and/or storage-only CAMUs would not have to meet the treatment requirements for the limited time while wastes are in the CAMU. For example, if such wastes are subsequently managed off-site, they would be subject to applicable LDRs. If they are subsequently managed in a permanent CAMU at the site, they would be subject to the treatment requirements proposed today for such units.

minimizes or controls cross-media impacts. The Regional Administrator is required to set these standards and design criteria by considering several factors, including, length of operation, volumes of wastes, physical and chemical properties of wastes, potential for releases, environmental factors that may influence migration of any potential release, and potential for human and environmental exposure to potential releases from the unit. EPA believes it makes sense to replace the § 264.552(c) CAMU designation criteria, which place emphasis on factors that do not apply to shorter-term CAMUs (see, *e.g.*, § 264.552(c)(4) and (7), pertaining to closure of CAMUs with wastes in place) with the design criteria in the staging pile rule. By focusing on, among other things, ''reliable'' and ''protective'' remedies, the staging pile requirements embrace the general concepts in the CAMU criteria, but with a more direct focus on factors specific to short-term waste management. (See, e.g., § 264.554(d)(2), which focuses the Regional Administrator on issues such as ''the length of time the pile will be in operation.'').

EPA is proposing that the staging pile standards at §§ 264.554(e), 264.554(f), 264.554(j) and 264.554(k) also apply to CAMUs that are used for treatment and/or storage only.

The § 264.554(e) and (f) standards, respectively, as applied to CAMUs, would address management of ignitable, reactive, or incompatible cleanup wastes. These standards were promulgated for staging piles and, in EPA's view, are reasonable management practices that are applicable for similar wastes in non-permanent CAMUs.

The staging pile standards at §§ 264.554(j) and 264.554(k), under today's proposal, would be the closure standards for treatment and/or storage only CAMUs that are located in previously contaminated areas or uncontaminated areas, respectively. These standards would be used instead of the CAMU closure standards at § 264.552(e)(6). EPA believes that the circumstances associated with closure of staging piles, which are restricted to non-permanent waste management activities, are the same as those for CAMUs undertaking non-permanent waste management activities.

EPA is also proposing that treatment and/or storage only CAMUs that comply with the time limits established under the staging pile regulations (at §§ 264.554(d)(iii), 264.554(h), and 264.554(i); the time limit is two years, plus a potential 180 day extension) would be subject to the performance and technical standards for staging piles in lieu of the permanent CAMU liner or groundwater monitoring requirements under proposed § 264.552(e)(3) and (5), respectively. However, treatment and/or storage only CAMUs that are in existence for longer than these time limits would be subject to the proposed § 264.552(e)(3) and (5) liner and groundwater monitoring requirements including corrective action, for CAMUs that are used for permanent disposal. EPA believes that the use of CAMU units for treatment and/or storage only activities for longer than these time limits raises concerns about potential impacts to groundwater similar to those raised by CAMU units that are designed for permanent disposal.

EPA believes that today's proposed approach to groundwater monitoring and liner requirements for CAMUs exceeding the staging pile time-frame is consistent with that described in the preamble to the staging pile regulations. The preamble recommends (63 FR 65918) that CAMUs be considered in cases where there is an anticipated need for additional time beyond the time limits for staging activities. In such cases, the preamble recommends that for an existing staging pile converted to a CAMU for longer-term staging activities, modifications might be needed to the staging pile design to address longer-term storage, including leak detection systems, run-off controls, air emissions controls, ground water monitoring systems, and leachate collection systems.

In proposing this liner requirement for treatment and/or storage only CAMUs, EPA is not envisioning typical landfill cell designs that would be used for permanent disposal (i.e., that partially surround a large volume of waste), but rather, that composite liner systems would generally be installed. EPA also anticipates that it would be appropriate at many sites conducting treatment and/or storage activities to consider use of the alternate liner standards under proposed § 264.552(e)(3)(ii). This is because treatment and/or storage activities will only be undertaken for a temporary period, and there will be significant opportunities for operating practices to be employed that affect potential migration of contaminants to groundwater; such practices could potentially be factored into the assessment of whether an alternate liner approach could be used. For example, a roof constructed over the stored wastes or treatment area could be as effective as the CAMU liner standard, based on conditions at the site and operating practices. At many sites, EPA anticipates that, although the CAMU may be in use for more than two or two and a half years, potential migration to the ground or surface water might be significantly reduced if, as an operating practice, wastes are intermittently placed in the CAMU. EPA also anticipates that if a storage and/or treatment only CAMU is placed in an existing area with significant contamination, given the time frame of the CAMU, operating practices, and site-specific factors, it could be appropriate at some facilities for the Regional Administrator to approve alternate requirements under the alternate liner provision for new, expansion, or lateral replacement CAMUs proposed at § 264.552(e)(3)(ii)(B).

The administrative mechanism for the CAMU (i.e., permit or order) would be required to specify the time limit for the CAMU. The regulations would provide that this time limit could be no longer than necessary to achieve a timely remedy selected for the waste. The Agency's general expectation is that even the longest remedies involving storage or treatment activities in such non-permanent CAMUs would be completed within years not decades, except in very unusual circumstances. The Agency would expect that storage and/or treatment CAMUs would only go beyond the several-years life-span if they were being used to stage cleanup wastes. A reasonable example would be a large facility in a phased, multi-year cleanup that will be using the CAMU for storage and treatment of cleanup wastes that are obtained during different phases of cleanup. Under this circumstance, there is not long-term stockpiling of cleanup wastes; rather, cleanup wastes are placed temporarily in the CAMU as part of the cleanup, and subsequently moved out of the CAMU for final appropriate disposal or treatment elsewhere. Under today's proposed approach, such a facility would not have to undergo repeated unit startup and closure during each phase of the cleanup. Just as for staging piles under § 264.554(d)(iii), the operating term of the CAMU used for storage and/or treatment would start when waste is first placed in the CAMU, regardless of whether any increment of waste would be in the CAMU for less than the time allotted.

EPA seeks general comment on its approach to incorporating the staging pile regulations for treatment and/or storage only CAMUs. In particular, EPA seeks comment on an alternate option of modifying the staging pile regulations, rather than the CAMU regulations, to allow for waste management activities in staging piles that are consistent with today's proposed standards for

treatment and/or storage only CAMUs. Under this option the CAMU rule would not draw a distinction between CAMUs used for treatment/and or storage only and those used for permanent disposal, nor would the rule contain separate standards for design, operation and closure of treatment and/or storage only CAMUs. Owners or operators seeking treatment or lengthier storage of cleanup wastes, but not permanent disposal of the waste, would be able to undertake such activities in staging piles.

EPA also seeks comment on retaining today's proposed approach to treatment and/or storage only CAMUs, but also implementing it by amending the staging pile regulations to allow treatment of remediation waste in staging piles. In the final HWIR-media rule, EPA prohibited waste treatment in staging piles in part based on concerns regarding the risks of treatment (e.g., from possible air emissions) (November 30, 1998, 63 FR 65911). Industry representatives, however, have since argued that the staging pile regulations provide adequate protection against threats from air emissions (e.g., staging piles be designed to ''prevent or minimize releases of hazardous waste or hazardous constituents into the environment'' and to ''minimize or adequately control cross-media transfer'' (40 CFR 264.554(d)(1)(ii)). Furthermore, industry representatives have repeatedly expressed the concern that the prohibition on treatment in staging piles severely limits the usefulness of these units—particularly because some form of ''pre-treatment'' is often associated with staging remediation wastes before final RCRA treatment. For example, contaminated soils may be consolidated into piles during remediation and then sized or blended to enhance subsequent treatment. These sizing or blending operations could, depending on site-specific circumstances, meet the definition of ''treatment'' under RCRA, in which case the operations would not be allowed under the staging pile regulations.

EPA has acknowledged industry's concerns on this issue, but it generally believed that it had addressed them in the settlement leading to today's proposal. Under today's proposal, a facility owner/operator wishing to treat eligible cleanup waste in temporary piles could seek a treatment and/or storage only CAMU. In this case, the pile would be regulated under the same substantive standards as a staging pile, and treatment would be allowed. Industry stakeholders, however, continue to raise concerns, arguing that CAMU approvals are likely to be more difficult to obtain—even if the technical standards are the same—because of the high degree of attention and analysis that has typically accompanied CAMU decisions. Industry also expressed concerns that some states may be interested in picking up staging pile requirements, but will not seek authorization for the revised CAMU rule (or may do so on a slower schedule). At the same time, other stakeholders have suggested that treatment is inappropriate in staging piles because these units were intended solely to allow consolidation of remediation wastes before full treatment on-site or shipment off-site—that is, they are ''staging'' piles, not ''treatment'' units. Allowing treatment in such a unit, in their view, could be misleading to the public (unless the name of unit were changed) and raise a whole range of issues better addressed through the CAMU process; while this process might draw more attention or entail more analysis, that could well be appropriate where treatment was involved.

EPA seeks further comment on issues raised by treatment in staging piles and whether it should make regulatory changes to the current prohibition. In particular, EPA seeks comment on the option of amending the staging pile regulations to allow treatment, as well as narrower approaches that might reconcile the differing views of stakeholders. For example, the staging pile regulations might explicitly allow mixing, sizing, blending, or similar physical operations, as long as they were intended to prepare wastes for subsequent management or treatment. EPA encourages commenters to provide their views on these or other options.[14]

J. Grandfathering CAMUs (§§ 264.550 and 264.551)

At the time of today's notice, there are a considerable number of CAMUs either approved or under consideration. It is important to EPA to keep these cleanups going and to avoid disrupting on-going activities. EPA believes that there will be little incremental gain in redirecting resources to re-analyzing CAMU decisions in light of the new standards. Further, EPA analyzed these CAMUs in developing these proposed revisions and concluded that the CAMU decisions would generally have been the same, or similar, to those that might have been made under the proposed requirements. The Agency therefore is proposing provisions that would allow certain CAMUs to continue to be implemented pursuant to the current rules which are the rules under which they were approved or planned.

EPA is proposing an approach, at § 264.550, under which two classes of CAMUs would remain subject to the 1993 CAMU regulations following final issuance of the CAMU amendments (i.e., would be ''grandfathered''). These classes are: (1) CAMUs that are approved prior to the effective date of the final amendments; and (2) CAMUs which were not approved prior to the effective date of the final amendments but for which substantially complete applications (or equivalents) were submitted to the Agency on or before 90 days after the publication date of the proposed rule (i.e., today's **Federal Register** notice). To continue to operate pursuant to the requirements of the current CAMU rules, CAMUs that fall into either of these classes would be required to operate within the general scope of the originally issued CAMU authorizing document (e.g., permit). If the CAMU changes in a way that exceeds the general scope of its original approval, those changes would be implemented in accordance with the amended CAMU rule. ''Approved'' means that the decision to designate a CAMU is final (e.g., the Agency issues a final permit authorizing a CAMU). The Agency included ''(or equivalent)'' after the word ''application'' to address the situation where it is not the responsible party for the cleanup that is requesting a CAMU—e.g., where the Agency imposes such a requirement as part of the remedy in a section 3008(h) unilateral order.

If EPA were not to include this provision, CAMU owner/operators who obtained approval prior to the amendments would be subject to re-evaluation in light of the new CAMU standards when the permit was up for renewal, during Agency-initiated proceedings to specifically include new requirements, or when the contemplated activities otherwise required a modification of the permit or other enabling mechanism, such as an enforcement order. EPA does not believe that this is an efficient use of cleanup resources. Similarly, EPA believes that it would also be a poor use of cleanup resources to require re-evaluation of such CAMUs that are substantially in the approval process. The Agency therefore has proposed to grandfather CAMUs that have, in the judgement of the oversight agency, substantially complete applications (or equivalents) within three months of publication of this proposal. The Agency does not want owners or

[14] The Agency seeks comment solely on the issue of amending the staging pile regulations to allow treatment and/or longer-term storage, not any other aspect of those regulations.

operators, or the oversight agencies, to disrupt or slow down the cleanup process by re-visiting prospective CAMUs under a new set of standards where there has been a substantial commitment to the process. EPA believes that it will be disruptive for facilities that are within 90 days of a substantially complete CAMU application (under the 1993 rule) at the time this proposal is issued to stop and conduct analyses in an effort to assess whether modifications would be warranted because of this proposal; EPA also believes that the three-month period from proposal would provide a reasonable time for owners or operators significantly invested in applying for a CAMU under the existing regulations to work with oversight agencies to ensure that a substantially complete application is submitted if they wish to obtain a CAMU under the existing CAMU regulations.

Under the proposed approach, EPA would interpret ''substantially complete application'' to mean that an application reflects that enough good-faith work has been done on it that imposition of the new requirements would be an inefficient use of a facility's and the Agency's cleanup resources. The Agency would expect, at the least, that the application is at a point at which it thoroughly and carefully addresses the main elements of CAMU designation that address long-term protectiveness, including the location of the CAMU, wastes proposed for management, technical design elements, and description of anticipated treatment, if any, of the wastes. This does not mean, however, that the application would have to be at a point where it would be deemed ''complete'' under the permitting requirements of § 270.10(c), which generally means that it be ready for proposal and public comment. For example, EPA would generally expect a substantially complete application, at a CAMU where wastes were to be left in place, to include a reasonable approach for groundwater monitoring that addresses site-specific conditions, but would still consider the application ''substantially'' complete where the Agency intends to further discuss the details of the groundwater monitoring system. EPA expects that where there has been substantial input by the Agency into the application by the 90th day, there would be a higher likelihood that the application would be found to be ''substantially complete.'' However, there may also be situations where the Agency has yet to engage with the owner or operator by the 90th day, but where the owner or operator has done such a thorough job analyzing the appropriate elements that the Agency would find it ''substantially complete.'' Of course, any CAMU that has been proposed by the Agency by the 90th day would have a ''substantially complete application.''

EPA expects that many, if not most, CAMUs that are substantially in the approval process by the 90th day after this proposal would be approved by the effective date of the CAMU amendments. For such CAMUs, the proposed provision for ''substantially complete'' applications would not be needed. EPA anticipates that there will be cases, however, where CAMUs with substantially complete applications within 90 days of publication of this proposed rule will not receive final Agency approval of their application prior to the effective date of the final CAMU amendments. Reasons for delay could relate to such factors as ongoing administrative processes, including administrative appeals, time involved in receiving and responding to public input, and time needed to work out technical details, such as those involving monitoring well placement and design. In addition, as owner/operators and regulatory agencies might do in preparing for the promulgation of any new regulation applicable to its activities, for those CAMUs with applications that are not expected to be approved by the effective date of the CAMU amendments or to meet the proposed ''substantially complete'' test by the proposed deadline, EPA suggests using the proposed amendments as guidance (prior to finalization of the amendments) in developing CAMU proposals, as appropriate. This approach would minimize the risk of having to make significant changes to CAMU plans at the time of the final rule. EPA is aware that the proposed amendments may change prior to the final rule; EPA intends to therefore keep the regulated community and oversight agencies apprised of any likely changes. EPA seeks comment on its approach to address the timing of CAMU applications and grandfathering of CAMUs.

Under today's proposal, to avoid the disruptions discussed above, CAMUs that are ''grandfathered'' would remain subject to the current standards for the life of the CAMU, as long as the ''waste, waste management activities, and design of the CAMU remain within the general scope of the CAMU as approved.'' EPA anticipates two types of circumstances—subject to site-specific determination by the Agency—that generally would be considered ''within the general scope of the CAMU as approved.'' First, changes to waste, waste management activities, and design that can be made without modification of the approved CAMU conditions in the permit would be considered ''within the general scope of the CAMU as approved,'' and would therefore be grandfathered. The same general principal would apply for non-permit decision documents such as enforcement orders. These changes would typically include such activities as modifying sampling and analysis plans or adjusting a treatment technology, based upon implementation in the field. Second, certain circumstances that might require modification of the terms of the CAMU could still remain within the general scope of the originally approved CAMU. Examples of such activities include adding more volume of essentially the same waste (same or similar constituents and origin) that was originally approved, or retaining the same basic design but enlarging a CAMU to accommodate the extra volume of wastes. However, the new amendments would apply under circumstances that are outside of the scope of the originally approved CAMU, such as different types of wastes slated for disposal in the CAMU, or substantial lateral expansion of a CAMU at the site.

1. Documentation of ''Substantially in the Approval Process.''

EPA is not envisioning any formal process for documenting that CAMUs are ''substantially in the approval process'' by the proposed deadline. Of course, EPA would, if the proposed grandfathering provisions are finalized, expect the Regional Administrator to record and justify this finding in the administrative record for the proposed and/or final CAMU approval. EPA would generally expect that, in addition to filing proper documentation in the administrative record, if requested, the Agency would notify the owner or operator in writing of the Agency's view of the completeness of the application before or shortly after the time of the proposed deadline so that the owner or operator would be on notice of what standards will apply to them if the proposed amendments are finalized and if they do not obtain CAMU approval prior to such finalization.

K. Public Participation (§ 264.552(h))

Today's proposal would expand on the requirements providing for public input into the establishment of CAMUs by making prior public notice and opportunity to comment on CAMU decisions mandatory. With these changes, the public would be better

assured of the opportunity for pre-decisional involvement in final CAMU determinations, whether the CAMU is authorized under a permit, order or other mechanism. In addition, EPA is proposing rule language that would expressly require the Regional Administrator to include in the public notice the rationale for any proposed application of the adjustment factors to the treatment requirement. These changes are consistent with EPA's long-standing policy for public involvement in major cleanup activities and are consistent with the implementation of the CAMU rule to date.

The existing CAMU rule, under § 264.552(f), requires the Regional Administrator to document the decision rationale for the CAMU and to make such documentation available to the public. The existing rule, under § 264.552(g), also requires, in cases where the CAMU is being implemented through a permit, that the CAMU be incorporated into an existing permit in accordance with the permit modification procedures in §§ 264.270.41 and 264.270.42 of this chapter, which require public notice and comment. EPA is concerned that, under the current regulations, CAMUs might undergo approval under orders without the public having the opportunity to comment on the proposal. In addition, EPA is concerned that the wording of the current CAMU rule, stating the Regional Administrator's duty to document and make available to the public the ''rationale'' for designating a CAMU, might imply that other aspects of the CAMU decision need not be presented to the public for comment (e.g., specific CAMU design details). EPA believes that this proposed change will remove any such potential omission.

Because of these concerns, EPA is proposing to replace the existing requirement at § 264.552(f) with the following requirement (proposed at § 264.552(h)): ''The Regional Administrator shall provide public notice and a reasonable opportunity for public comment before designating a CAMU. Such notice shall include the rationale for any proposed adjustments under § 264.552(e)(4)(iii)(B) to the treatment standards in § 264.552(e)(4)(iv).'' EPA believes that this proposed modification is consistent with existing policy and practices (see the September, 1996 RCRA Public Participation Manual, especially Chapter 4; this manual is in the docket for today's rule), will increase the certainty that public involvement will occur for all CAMUs, and will provide for flexible approaches to implementation.

In general, as articulated in the above cited guidance, EPA believes that under today's proposed modifications, the public should have an opportunity, early on, to become involved in the process and provide input into remedial decision-making, including CAMU decisions. Today's proposed standard of ''reasonable opportunity'' provides for flexibility that EPA believes is necessary for public involvement concerning the CAMU decision to be implemented within the broader context of the facility cleanup; as a general minimum, in accordance with the above-cited guidance, a reasonable opportunity should include informing the public about a prospective CAMU, and providing meaningful opportunity for the public to comment prior to the final agency determination to approve a CAMU.

In addition to proposing a general performance standard of ''reasonable opportunity'' for public comment in CAMU determinations, EPA is also proposing to add a specific requirement that the description of the proposed CAMU include the rationale for any adjustments to the treatment requirement. The Agency chose to highlight the importance of the proposed treatment adjustment factors because this is an area that can be of especially great interest to the public at cleanup sites. The Agency's general experience with remediation sites in the RCRA corrective action and Superfund programs is that there is often a high level of interest shown by the public on treatment issues.

EPA is seeking comment on whether to apply the public participation procedures in the ''RCRA Expanded Public Participation Rule,'' which was published in 1995 (60 FR 63417), to all CAMU decisions. In other words, should the Agency extend this rule, which already applies to CAMU permit decisions, to CAMUs included in orders. Prior to issuance of that rule, formal public involvement was required at two points in the permitting process—when the permitting agency announced its intent to grant or deny a permit, and when a facility requested a modification of an existing permit. The Expanded Public Participation Rule added the following requirements: 1) Permit applicants must hold an informal meeting to inform community members of proposed hazardous waste management activities before applying for a permit to conduct these activities; 2) the permitting agency must announce to the public when a permit application is submitted; 3) the permitting agency may require a facility to set up an information repository; and, 4) the permitting agency must notify the public prior to trial or test burns at combustion facilities. After issuing the rule, EPA issued guidance providing more detail on public involvement in corrective action (see the September, 1996 RCRA Public Participation Manual, especially Chapter 4; this manual is in the docket for today's rule; this manual and the 1996 Expanded Public Participation Rule are also available at www.epa.gov/epaoswer/hazwaste/permit/pubpart.index). This guidance states that, in general, the principles in the rule are appropriate for RCRA corrective action undertaken pursuant to either permits or orders.

If EPA were to adopt today's proposed amendments to the CAMU rule, the ''permit applicant'' in requirement 1, referred to above, would be read as the facility receiving an order for a CAMU; the ''permitting agency,'' referred to above in requirements 2–4 would be read as the ''Regional Administrator.'' EPA is seeking comment on whether to apply these public participation procedures to all CAMU decisions.

Public involvement in the overall RCRA corrective action program is currently being discussed as part of EPA's RCRA Cleanup Reforms. EPA intends that its approaches to public participation for the designation of CAMUs will be informed by this initiative. Currently, representatives from community and environmental groups have expressed their views to EPA concerning public involvement in RCRA Corrective Action cleanups. To date, the groups have expressed concerns regarding EPA and state authority for public involvement in RCRA Corrective Action, consistent application of public involvement across state and EPA programs, options for public involvement assistance to communities around sites undergoing RCRA Corrective Action, and the role of the EPA Ombudsman in public involvement activities.

EPA continues to seek feedback from all stakeholders on the RCRA Cleanup Reforms. The Agency welcomes additional feedback on ways to enhance community involvement including greater public access to information on cleanup progress. Additional information on the Reforms is available at <*www.epa.gov/epaoswer/osw/cleanup.htm*> or by calling the RCRA Hotline at 800–424–9346

L. Additional Requirements (§ 264.552(i))

EPA is proposing at § 264.552(i) that the Regional Administrator may impose

requirements in addition to those specified in the CAMU regulations. Specifically, proposed § 264.552(i) reads: ''(i) Notwithstanding any other provision of this section, the Regional Administrator may impose additional requirements as necessary to protect human health and the environment.'' The existing CAMU rule provides the ability to require any additional requirements, as necessary to protect human health and the environment. Because EPA is proposing detailed minimum technical standards in several areas in today's rule, EPA believes that it is appropriate to include this specific provision to clarify within the regulations that requirements beyond those specifically provided for in the rule may be necessary on a site-specific basis at a CAMU. This provision would recognize the ability of the Regional Administrator to impose requirements relating to any element of CAMUs, including: requirements for additional treatment of PHCs beyond the minimum standards; requirements for additional engineering or monitoring specifications; and prohibition of specific wastes from inclusion in a CAMU.

IV. Relationship Between Today's Proposed Action and Other Regulatory Programs

A. Impact of Today's Amendments.

Today's proposed amendments would not change the relationship between other state and federal programs and the CAMUs regulations. These amendments would solely affect the way hazardous cleanup wastes are managed in corrective action management units. These rules would set standards for hazardous waste management units when EPA or a state chooses to take advantage of the flexibility provided by the CAMU rule, but they would not affect, in any way, other aspects of RCRA cleanups, e.g., how cleanup levels are set or when treatment is required at RCRA corrective action facilities. Although these standards borrow, as appropriate, from approaches in current remediation programs (including RCRA corrective action for SWMUs), they were not designed for making remedial decisions outside the CAMU context, such as in state or federal cleanup programs, where program-specific remedial decision-making processes are already in use. Today's rule would leave in place, and would leave untouched, all of EPA's current policies and regulations covering hazardous waste cleanups, including such familiar policies as the ''area of contamination'' concept, ''contained-in'' decisions, the regulatory definition of ''remediation waste,'' and the various remediation-specific LDR variances. For a discussion of these and other policies, see the May, 1996 Corrective Action ANPR (61 FR 19432), the October 1998 Memorandum, ''Management of Remediation Waste Under RCRA,'' EPA530–F–98–026, and the preamble discussion to the HWIR-media rule at 63 FR 65874, 65877-65878 (November 30, 1998) (these references are in the docket for today's rule). The preamble to the 1993 CAMU rule discusses the relationship between the CAMU rule and other regulatory programs, including CERCLA (see 58 FR 8658, 8679 (February 16, 1993)).

V. How Would Today's Proposed Regulatory Changes Be Administered and Enforced in the States?

A. Applicability of Federal Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer the RCRA hazardous waste program within the State. A State may receive authorization by following the approval process described under § 271. See 40 CFR part 271 for the overall standards and requirements for authorization. Following authorization, the State requirements authorized by EPA apply in lieu of equivalent Federal requirements and become Federally enforceable as requirements of RCRA. EPA maintains independent authority to bring enforcement actions under RCRA sections 3007, 3008, 3013, and 7003. Authorized States also have independent authority to bring enforcement actions under State law.

After a State receives initial authorization, new Federal requirements promulgated under RCRA authority existing prior to the 1984 Hazardous and Solid Waste Amendments (HSWA) do not apply in that State until the State adopts and receives authorization for equivalent State requirements. In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new Federal requirements and prohibitions imposed pursuant to HSWA provisions take effect in authorized States at the same time that they take effect in unauthorized States. As such, EPA carries out HSWA requirements and prohibitions in authorized States, including the issuance of new permits implementing those requirements, until EPA authorizes the State to do so.

Authorized States are required to modify their programs when EPA promulgates Federal requirements that are more stringent or broader in scope than existing Federal requirements. RCRA section 3009 allows the States to impose standards more stringent than those in the Federal program. See also § 271.1(i). Therefore, authorized States are not required to adopt Federal regulations, both HSWA and non-HSWA, that are considered less stringent than existing Federal requirements.

B. Authorization of States for Today's Proposal

Today's proposal would be primarily implemented pursuant to sections 3004(u) and (v) of RCRA, which are HSWA provisions. This statutory authority also formed the statutory basis for the original federal Corrective Action Management Unit (CAMU) regulations (see 58 FR 8658, 8677 (February 16, 1993)). Therefore, when promulgated, the Agency would add the rule to Table 1 in § 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA. States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble.

Today's proposed amendments to the CAMU regulations would be more stringent than the existing federal CAMU regulations, although EPA believes that the current CAMU practices are similar to those that would be required under the proposed amendments. Thus, States that have already been granted authorization for the existing 1993 CAMU rule would be required to revise their programs so that they are not less stringent than the Federal program, including the new amendments. Further, because today's proposed amendments to the CAMU rule would be promulgated under HSWA authority, after the amendments become effective, EPA would implement them in States authorized for the 1993 CAMU rule until these States receive interim or final authorization for the final rule. EPA would also continue to implement the amended CAMU regulations in those States that have not received authorization for corrective action, consistent with State law. As explained in the 1993 CAMU rule preamble (see 58 FR 8658 (February 16, 1993)), the CAMU rule is integral to the HSWA corrective action program, and where EPA implements the corrective action requirements, EPA also implements the CAMU rule (consistent with state law). Note that state laws or regulations may be more stringent or broader in scope than the Federal regulations.

States that are authorized for corrective action but have not received

authorization for the existing CAMU rule would not be required to seek authorization for the amended CAMU regulations because those States' authorized regulations for corrective action and Land Disposal Restrictions (LDRs) are more stringent than the Federal regulations that include CAMUs. Because CAMUs are used as part of a corrective action and they are often integral to the implementation of corrective action at individual facilities, States are strongly encouraged to adopt and seek authorization for the CAMU regulations. After publication of the final CAMU amendments, States would no longer be able to seek authorization solely for the 1993 CAMU rule without the amendments.

C. Interim Authorization-By-Rule for States Currently Authorized for the CAMU Rule

Currently, 21 States are authorized for the existing CAMU regulations and are responsible for their implementation, including reviewing applications for CAMUs from facilities and overseeing the operation of approved CAMUs. These States are also authorized for corrective action. In addition, EPA is aware of 16 States that have adopted CAMU regulations, but that have not yet received authorization for them. One of EPA's goals regarding the implementation of today's proposed rulemaking is to enable CAMU-authorized States to continue to implement the CAMU regulations after these proposed amendments are finalized. States authorized for the 1993 CAMU rule would continue to implement unmodified provisions in that rule, but because today's proposed rulemaking is more stringent and would be promulgated as a HSWA rule, until those States receive authorization for the amendments, EPA would have regulatory authority over requirements added by these amendments. This would result in a situation where there would be two direct implementers of the CAMU regulations over a single unit. This situation would be extremely disruptive to the operation of the ongoing regulatory program for CAMUs because there would be redundant regulatory oversight of these units. One result would be the inevitable delay in the implementation of CAMUs at individual facilities. Because the management of CAMU-eligible waste in these units expedites the completion of the clean-up process at individual facilities, these potential delays would be counter to the RCRA clean-up goals, and could interfere with the goal of protecting human health and the environment.

To address these concerns, EPA is today proposing to grant eligible CAMU-authorized States interim authorization for the proposed CAMU rule amendments as part of today's proposed rulemaking through a new process. EPA is calling today's proposed interim authorization of eligible States ''interim authorization-by-rule'' because it would occur as part of the rulemaking process for the CAMU amendments. The interim authorization-by-rule would be effective for all qualifying States on the same date that the CAMU amendments, when promulgated, become effective, rather than on a State-by-State basis through a separate interim authorization process that would occur after these amendments are promulgated. Only those States that are authorized for the 1993 CAMU rule at the time the final rule for these proposed amendments is signed and that meet the other criteria set forth in proposed § 271.27 (described below) would be eligible to receive interim authorization-by-rule.

This interim authorization-by-rule would expire three years after the effective date of the CAMU amendments. Therefore, these States would need to receive final authorization for the rule to continue to implement the amendments after the expiration of interim authorization. The proposed interim authorization-by-rule requirements would be located in new § 271.27, and would apply only to the amended CAMU regulations. Because the interim authorization of States for these proposed amendments would be integral to today's proposed interim authorization-by-rule process, EPA is requesting comments on both aspects of this proposal.

1. Description of the Basis for Interim Authorization-By-Rule

States can currently receive interim authorization for rules that have been federally promulgated under HSWA statutory authority (see section 3006(g) of RCRA). This statutory provision directs EPA to grant States interim authorization if the State regulations are substantially equivalent to the Federal provisions. This requirement for interim authorization differs from the provisions in RCRA section 3006(b) for final authorization, which require that State programs be fully equivalent to the Federal program. The differences between the statutory requirements for interim authorization and final authorization exist because Congress intended interim authorization to be a mechanism to allow existing State programs to continue functioning without disruption for a limited period of time, during which States would amend their programs to be equivalent to the Federal program.

Today's proposed interim authorization-by-rule process is based upon the statutory authority for interim authorization in section 3006(g) of RCRA. Using this authority, EPA is proposing a rule granting interim authorization for the CAMU amendments to States that are already authorized for the 1993 CAMU rule and that meet the criteria specified in § 271.27(a), without the need for a State-specific determination. These proposed criteria are described below. Thus, as part of EPA's promulgation of the CAMU amendments, EPA would also grant interim authorization-by-rule to States for the amendments once these criteria are met. EPA requests comment on whether these proposed criteria would suffice as the basis for granting interim authorization to eligible States as part of these amendments.

EPA believes that further review of these States' CAMU programs is not necessary to determine that these States meet the statutory standard for interim authorization because of: (1) the type of amendments to the CAMU regulations being proposed today; (2) the restrictions on State eligibility in proposed § 271.27; (3) the fact that States' existing CAMU regulations have already been through the authorization process for those regulations; (4) the fact that States will use the amendments as guidance under their existing regulatory authority until they receive final authorization; and (5) EPA's oversight of State implementation of their authorized CAMU regulations.

2. Eligibility of States for the Proposed Interim Authorization-By-Rule Process

In order for States to receive interim authorization for the CAMU amendments, States would have to have regulations that are substantially equivalent to the amended Federal CAMU regulations. Proposed § 271.27(a)(1), would restrict the eligibility for interim authorization-by-rule to those States that are authorized for the 1993 CAMU rule (58 FR 8658, February 16, 1993). Due to the nature of the proposed amendments, EPA believes that States which have received authorization from EPA for the existing 1993 CAMU rule have regulations that are substantially equivalent to today's proposed amended CAMU regulations. Specifically, the CAMU amendments are not generally designed to produce different site-specific CAMU standards than would be imposed under the current rules, but instead are meant to make clearer the Agency's general minimum expectations for CAMUs and

to make the CAMU process more consistent and predictable, as well as more explicit for the public. In fact, as described elsewhere in this proposal, in an assessment of approved CAMUs which was developed as background for today's proposal, EPA found that in general, the CAMUs that have been approved by EPA and the States authorized for the CAMU rule are consistent with the standards in today's proposed CAMU amendments. Thus, States are implementing the current CAMU waste management standards in a way that is substantially equivalent to those standards that would be set under today's proposed amendments.

Another restriction on the eligibility of States for interim authorization-by-rule is that, under proposed § 271.27(a)(2), eligible States cannot have audit privilege and immunity laws that raise EPA concerns about whether the State provides for adequate enforcement as required for authorization under RCRA section 3006(b). EPA believes that audit privilege and immunity laws undermine the enforcement authority that a State must possess as a condition of being authorized to implement federal environmental programs.[15] Generally, State audit privilege laws grant information, that is generated through a facility self-audit, a privilege against disclosure in an administrative or judicial proceeding, including the investigation of criminal activities. Generally, State audit immunity laws eliminate fines or penalties if a facility discloses the audit results. EPA believes that State audit privilege laws restrict information that State regulatory agencies must have access to in order to determine environmental compliance and perform emergency actions, as required under federal environmental law. EPA believes that State immunity laws restrict the ability of States to assess appropriate penalties and injunctive relief for environmental violations, as required under federal environmental law. For example, audit privilege laws undermine the ability of States and the public to access information necessary to determine environmental compliance, as required under federal environmental law. Immunity laws undermine the ability of States to assess appropriate penalties for environmental violations, as required under federal environmental law.

EPA has worked successfully with many States that have enacted audit privilege and immunity laws to reach agreements so that such laws do not preclude authorization of States for federal environmental programs. Among the States authorized for the 1993 CAMU rule, Illinois, Nevada, and Oregon are currently discussing with EPA enforcement issues raised by these States' audit privilege and/or immunity laws. Under proposed § 271.27(a)(2) these States would not currently qualify for interim authorization-by-rule.

EPA is not making any assessments regarding these States' audit privilege laws and their laws' effects on the adequacy of each States' enforcement authority as part of today's proposed rule. General EPA oversight and the authorization processes provide EPA and these States with procedures to discuss and resolve audit privilege and/or immunity issues that affect a State's authority to enforce federal environmental programs. In contrast, the proposed interim authorization-by-rule process would be appropriate only in circumstances where detailed evaluation by EPA or in-depth discussion with the State is not necessary for EPA to determine that the State meets the requirements for interim authorization.

EPA hopes that the audit privilege law issues in these States will be resolved by the time the final CAMU amendments rule is signed. Resolution of all outstanding audit privilege law issues would make these States eligible for interim authorization-by-rule. The final rule will indicate whether this resolution has occurred. In addition, if other States that would currently be eligible for interim authorization-by-rule under this proposal enact audit privilege or immunity laws prior to final rule promulgation, those States will lose their eligibility for interim authorization-by-rule until enforcement issues raised by those laws are resolved.

Under proposed § 271.27(a)(3), any eligible State that wanted to receive interim authorization-by-rule for the CAMU amendments would have to notify EPA within 60 days after publication of the final CAMU amendments that the State intends to, and is able to (*i.e.,* does not have any existing laws that would prevent the state from implementing these amendments), use these amendments as guidance until it adopts equivalent provisions. During the 60 days after publication of the final rule, States may evaluate the final provisions and decide whether they can and want to gain interim authorization-by-rule for the CAMU amendments. EPA is proposing this 60 day deadline to enable EPA to promptly publish an additional **Federal Register** document before the effective date of the CAMU amendments rule, which would be 90 days after its publication. This FR notice would inform the public which States have submitted the notification to EPA and thus, have interim authorization for the CAMU amendments. EPA requests comment on whether 60 days is a sufficient amount of time for States to decide to notify EPA of their intentions and submit the notification to EPA. EPA also requests comment on whether eligible States should be able to submit the notification in proposed § 271.27(a)(3) after the 60 day deadline and gain interim authorization-by-rule, as long as the notification was submitted before interim authorization expires for the CAMU rule amendments.

Note that eligible States could choose not to commit to this interim authorization-by-rule process. If they are not able to, or choose not to seek interim authorization-by-rule, they can follow the process outlined in Section D below for States that are authorized for corrective action, but not the 1993 CAMU rule.

3. Interim Authorization Process Time Line

The timing of events in today's proposed interim authorization-by-rule process differs from the existing interim authorization process in §§ 271.24 and 271.21. Under the existing process, EPA first promulgates a rulemaking, after which a State may amend its regulations to reflect the Federal rulemaking, and then submit an application to EPA seeking interim authorization for that rule. EPA then would review the application and subsequently reach a decision on the application, which EPA publishes in the **Federal Register** in accordance with the procedures in § 271.21.

In today's proposed interim authorization-by-rule process, States would receive interim authorization upon the effective date of the final regulations being proposed today, as long as they meet the conditions set out in today's proposal, rather than through a separate rulemaking action after their promulgation. The effective date of interim authorization for those eligible States that submit the notification required by proposed § 271.27(a)(3) would be the effective date of the CAMU amendments.

Eighteen States have received authorization for the 1993 CAMU rule,

[15] "Statement of Principles: Effect of State Audit Immunity/Privilege Laws on Enforcement Authority for Federal Programs," Memorandum from Steven A. Herman, Assistant Administrator for Enforcement and Compliance Assurance; Robert Perciasepe, Assistant Administrator for Water; Mary Nichols, Assistant Administrator for Air and Radiation; and Timothy Fields, Acting Assistant Administrator for Solid Waste and Emergency Response (February 14, 1997).

and currently do not have an unresolved audit privilege and immunity law. EPA is proposing that these States would be eligible for today's proposed interim authorization-by-rule process. These 18 States are: Alabama, Arizona, Delaware, Georgia, Idaho, Indiana, Louisiana, New York, North Carolina, North Dakota, Oklahoma, South Dakota, Texas, Utah, Vermont, Washington, Wisconsin, and Wyoming. EPA recently proposed to grant Virginia authorization for the 1993 CAMU rule (July 31, 2000, 65 FR 46681). EPA expects that when the CAMU amendments are promulgated, Virginia will be authorized for the 1993 CAMU rule, and thus would be eligible for interim authorization-by-rule. Note that although all these States would be eligible for interim authorization, not all these States may actually submit the notification required by proposed § 271.27(a)(3) after the publication of the final CAMU amendments rule to gain interim authorization.[16] Additional States may receive authorization for the 1993 CAMU rule after the date of today's proposed rule, up until the time today's proposed CAMU amendments are signed. Authorization for the 1993 CAMU rule would normally be granted by EPA through a **Federal Register** document, which is then subject to public comment. If EPA decides to authorize any additional States for the 1993 CAMU rule after today's proposal, in the **Federal Register** document that requests comment on that authorization. EPA will indicate that the authorization of the State for the 1993 CAMU rule will result in the State becoming eligible for interim authorization-by-rule for the CAMU amendments.

Therefore, when EPA publishes the final CAMU amendments, EPA will provide a full list of States that will receive interim authorization-by-rule if the States subsequently notify EPA within 60 days after that publication that the State intends to, and is able to implement those amendments. As noted above, EPA will publish a subsequent notice in the **Federal Register** that will inform the public which States did notify EPA under proposed § 271.27(a)(3) that they are able to and intend to use the CAMU amendments as guidance and thus have interim authorization.

[16] For the purposes of commenting on this proposal, commenters should recognize that under the interim authorization by-rule approach proposed today, any state that meets the conditions outlined in the proposed rule (current CAMU authorization, no unresolved audit law issues, and notification of desire and ability to use the final amendments as guidance), would obtain interim authorization without a separate individual notice and comment process on that authorization.

4. Expiration of Interim Authorization

Under proposed § 271.27(b) and amended § 271.24(c), interim authorization for the amended CAMU regulations would expire three years after the effective date of these amendments. These provisions would extend the time period for interim authorization for these CAMU amendments from the period allowed by the current expiration date of interim authorization for regulations promulgated under HSWA statutory authority in § 271.24(c), which is January 1, 2003. The reason for this extension to the expiration of interim authorization for the CAMU amendments rule is to provide States sufficient time to amend their regulations so they are equivalent to the federal CAMU regulations, and then to go through the final authorization process in § 271.21. EPA believes that three years is a reasonable period of time for States to complete this action and is consistent with the deadlines in § 271.21(e) which in some cases, provide States with almost three years to modify their programs to reflect Federal program changes, and allow for extensions to the deadlines. EPA believes that a longer period of time for interim authorization does not conform to its temporary nature. EPA specifically requests comment on this deadline.

If a State does not receive final authorization before its interim authorization expires, EPA would then be responsible for implementing the new CAMU amendments in these States. (EPA would not implement the provisions in the 1993 CAMU rule that were unaffected by the amendments; the authorized States would continue to implement them.) EPA believes that this potential reversion of the implementation authority to EPA would act as a strong incentive for States with interim authorization to expeditiously seek final authorization. Further, EPA does not believe that this final authorization process will be particularly difficult. See below for additional detail regarding EPA's intention to expedite the authorization of States for the CAMU rule amendments.

5. Conditional Interim Authorization

One alternative to today's proposed interim authorization-by-rule process that EPA is also considering is to grant interim authorization concurrently with the promulgation of the CAMU amendments to those States that meet criteria such as those proposed today in § 271.27(a), on the condition that after publication of the final rule they submit a notification as proposed in § 271.27(a)(3). Under this approach, EPA would follow the usual authorization procedures in § 271.24 where EPA determines whether each State meets the interim authorization requirements, except that this determination would occur concurrently with the promulgation of the CAMU rule amendments. Once States met the deadline for notifying EPA that they intend to and are able to use the CAMU amendments as guidance, EPA would publish a notice in the **Federal Register** listing the States that submitted the notification. Interim authorization would then be effective on the same date as the CAMU amendments.

EPA does not believe that regulatory amendments would be necessary to implement this conditional authorization process because of the flexibility within the existing procedures. Section 271.21 gives EPA discretion to initiate program revision and to require only those application documents it deems necessary to make an authorization decision. EPA is proposing to grant interim authorization to States that meet the criteria in proposed § 271.27, because such States will be implementing the CAMU amendments in a manner substantially equivalent to the Federal regulations, based on the knowledge EPA already has about these States' CAMU regulations and on the notification States would submit. The only regulatory amendments that would be made would be the extension of the expiration date for interim authorization for the CAMU amendments in proposed § 271.27(b) and amended § 271.24(c).

EPA requests comments on its proposal to grant interim authorization for the proposed amendments, when promulgated, to Alabama, Arizona, Delaware, Georgia, Idaho, Indiana, Louisiana, New York, North Carolina, North Dakota, Oklahoma, South Dakota, Texas, Utah, Vermont, Washington, Wisconsin, and Wyoming. EPA recently proposed to grant Virginia authorization for the 1993 CAMU rule (July 31, 2000, 65 FR 46681). EPA expects that when the CAMU amendments are promulgated, Virginia will be authorized for the 1993 CAMU rule, and thus requests comment on its tentative determination to grant interim authorization for the proposed amendments, when promulgated, to Virginia.

D. Authorization of States Currently Authorized for Corrective Action, But Not the Existing CAMU Rule

When EPA promulgates the proposed CAMU amendments, there will be a number of States authorized for corrective action that will not be authorized for the 1993 CAMU rule. Currently, there are 13 States in this situation. They are: Arkansas, California, Colorado, Guam, Kentucky, Maine, Missouri, Mississippi, Montana, New Hampshire, New Mexico, Ohio, and South Carolina. In addition to these States, there may be States authorized for the 1993 CAMU rule that did not receive interim authorization-by-rule. Because CAMUs expedite clean-ups, EPA will encourage all of these States to seek final authorization for the CAMU regulations, including today's proposed amendments as soon as possible. (Alternatively, States could request and receive interim authorization under § 271.24.) EPA also believes that the authorization process for the CAMU regulations can and should be completed expeditiously.

1. Content of a State's Application for Final Authorization

The State authorization revision procedures in § 271.21(b) provide EPA with the discretion to consider the circumstances of individual States when determining what the content of a State's application for final authorization should be. EPA believes that States that are authorized for corrective action and are seeking authorization for the amended CAMU rule generally would not need to submit a revised Program Description (PD) and Memorandum of Agreement (MOA) to EPA, where the program seeking authorization for the CAMU regulations is the same program that is authorized for corrective action.

The implementation of the CAMU regulations requires States to make clean-up decisions that are in effect the same types of decisions States already implement through their corrective action programs. Therefore, EPA believes that the adoption and implementation of the CAMU regulations requires the same technical and resource capability that States already have to operate the corrective action program. Generally, no changes to the MOA between the State and EPA should be necessary as a result of the CAMU regulations because Agency coordination issues would have been addressed during the authorization process for corrective action. However, EPA would have the discretion to request these documents or other information, if necessary.

EPA does believe that States seeking final authorization should address the CAMU regulations in a revised Attorney General's (AG) statement of authority. The CAMU regulations create a new type of waste management unit that can be used only in certain situations after a facility application and Agency review process. Thus, States may need to establish new statutory authority, or interpret their existing authorities to determine that they can approve and regulate these units.

2. Authorization Approach for States That Adopt the CAMU Regulations by Reference or Verbatim

Many States often adopt Federal regulations verbatim or incorporate them by reference into their regulations. It is likely that many States will adopt the CAMU regulations in this manner. When States adopt Federal regulations using these methods, it is not difficult for EPA to determine whether the State regulations are equivalent to their Federal counterparts. Because of this ease of review, and the high priority of State authorization for the CAMU regulations, the Agency believes that the authorization process for these States under § 271.21 should be quick. Thus, once EPA receives an acceptable authorization application, including a revised AG Statement, from a State which incorporates the CAMU amendments by reference or adopts them verbatim, EPA would immediately proceed to publish a FR notice which grants final authorization to that State. An exception to this expectation would be cases where in EPA's judgment, known issues with the existing State program greatly affect the program's prospects for authorization. An example of such issues would be questions regarding a State's enforcement authority (e.g., audit law issues), or capability (e.g., resource issues). It should also be noted that EPA expects to process all State authorization applications for the CAMU regulations as quickly as possible, regardless of the method of State adoption.

VI. Effective Date

Regulations promulgated pursuant to RCRA Subtitle C generally become effective six months after promulgation. RCRA section 3010(b) provides, however, for an earlier, or immediate, effective date in three circumstances: (1) Where the industry regulated by the rule at issue does not need six months to come into compliance; (2) the regulation is in response to an emergency situation; or (3) for other good cause.

EPA is proposing that today's rule become effective within 90 days after promulgation of the amendments. Because today's proposal would ''grandfather'' CAMUs (see discussion above in ''Grandfathering CAMUs''), a 90-day effective date would only affect any unapproved CAMUs that do not meet the criteria for grandfathering. Thus, EPA believes that because there would be ample time for facilities to adjust to the new procedural changes and waste management standards, the regulated community would not need the full six months to come into compliance with the final rule. However, EPA believes that a time period shorter than 90 days would not enable States that are currently authorized for the CAMU rule to gain interim authorization, even under today's proposed interim authorization-by-rule approach. EPA requests comment on whether a 90-day effective date is appropriate.

VII. Conforming Changes (40 CFR Subpart S, §§ 260.10)

Today's proposal would change the title of 40 CFR Part 264 Subpart S from ''Corrective Action for Solid Waste Management Units'' to ''Special Provisions for Cleanup.'' The current title reflects the Agency's intention in 1993, when it was added to the CFR, to finalize the comprehensive corrective action regulations for solid waste management units proposed in September 1990. 58 Fed. Reg. 8658 (February 16, 1998). As discussed more fully above, in the section titled ''Releases to Groundwater (§ 264.552(e)(5),'' the Agency withdrew the majority of that proposal in October, 1999. In addition, the current and proposed provisions of Subpart S address CAMUs, temporary units, and staging piles, which are all units which may only be used for the management of cleanup wastes, and which, in some instances, may be used at sites not subject to RCRA corrective action. EPA therefore believes that this change will ensure that the title of Subpart S more accurately conveys the provisions that are contained within it.

The conforming changes to § 260.10 are made to implement the distinction being drawn in today's proposed rule between CAMUs that would be grandfathered and CAMUs that would be subject to today's proposed standards at § 264.552. As discussed above in the section titled ''Eligibility of Wastes for Management in CAMUs,'' EPA is proposing to modify the definition governing the types of wastes that can be managed in a CAMU, and is proposing to change the name of waste

eligible for management in CAMUs from ''remediation waste'' to ''CAMU-eligible waste.'' This revised definition would apply to new CAMUs but not to CAMUs that qualify to continue implementation under today's proposed ''grandfathering'' provisions (see proposed § 264.550). EPA is making two conforming changes as a result of modifying the definition of remediation waste in this fashion. The first change is to remove the existing definition of CAMU at § 260.10 and to include it directly in § 260.551(a) (the introductory paragraph to the 1993 CAMU provisions, which would become, as a result of the regulations proposed today, the regulations applicable to grandfathered CAMUs). The second change would be to modify the existing definition of CAMU at § 260.10 by changing ''remediation wastes'' to ''CAMU-eligible wastes,'' and to place the definition directly in the amended CAMU regulations at § 264.552(a).

EPA also changed the term ''remediation waste'' to ''CAMU-eligible waste'' throughout the CAMU regulatory language.

VIII. Analytical and Regulatory Requirements

A. Planning and Regulatory Review Executive Order 12866

Under the Planning and Regulatory Review Executive Order 12866 (58 **Federal Register** 51,735 (October 4, 1993)), an agency must determine whether the regulatory action is ''significant'' and therefore subject to OMB review 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:

(A) 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;

(B) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(C) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(D) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that today's proposed rule is a ''significant regulatory action'' because of novel legal or policy issues arising in the rule. As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record. The proposed rule is estimated to have annual incremental costs between $130,000 and $305,000, and therefore is not viewed as economically significant under to the Executive Order.

EPA requests comment on the data, assumptions, and methodology described below employed to estimate the impacts of today's proposed rule. EPA has prepared an economic support document for the proposed rule entitled ''Economic Analysis of the Proposed Amendments to the CAMU Rule.'' This document can be found in the docket for today's proposed rule.

This section of the analysis discusses (1) the economic analysis background and purpose, (2) the CAMU administrative approval costs assessment, (3) the analysis of impacts resulting from the treatment and unit design requirements, (4) the assessment of potential change in CAMU usage to result from the rule, and (5) the summation of these impacts.

1. Economic Analysis Background and Purpose

A CAMU is: ''An area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility.'' (40 CFR 260.10) CAMUs may be used to consolidate hazardous wastes from various areas at the facility. While one of the chief reasons for CAMU usage is to facilitate more treatment of cleanup wastes in general (see discussion earlier in the preamble), wastes placed in CAMUs are not subject to the Land Disposal Restriction requirements for treatment. In addition, under the 1993 CAMU Rule, CAMUs are not required to meet the existing 40 CFR Part 264 and Part 265 minimum design, operating, closure, and post-closure requirements for hazardous waste units.

The CAMU provisions being proposed today would amend the existing CAMU rule. This economic analysis examines the impacts from these proposed amendments compared to the existing CAMU rule provisions. This section briefly discusses the baseline and post-regulatory scenarios in the analysis, and provides an overview of the incremental impacts assessed.

a. *Framework for the Analysis.* The Agency faced two important questions in developing the framework for this analysis. The first was how to address defining the universe of facilities affected by today's rule. The second was how to approach assessing the incremental changes in CAMUs under the baseline and post-regulatory scenarios.

The universe of facilities which could potentially employ a CAMU in remediation, and thus could be affected by today's rule, includes facilities performing cleanups under RCRA corrective action, Superfund, and state cleanup authorities. There are over 6,000 facilities which can be potentially reached through corrective action authority; this figure does not include Superfund sites or other cleanup sites where CAMUs may be used in the future. Of these facilities, today's proposed rule would not impose costs on any existing CAMUs that continue to manage wastes in the general manner for which they were approved, or, of course, on any facilities which manage their wastes without the use of a CAMU (e.g., they send their wastes off-site). Today's proposed standards would apply to CAMUs which are not subject to the existing standards under the grandfathering provisions. However, to determine the number of facilities, out of this total number, which would in fact require remediation at some point in the future under one of these authorities, and would employ a CAMU in the remedy, would require significant effort and yield uncertain results.

Therefore, EPA considered the use of existing data on CAMU usage. The Agency first examined the 1993 CAMU RIA, which was performed in support of the existing CAMU rule. In this RIA, the Agency made a projection of the number of facilities which would employ CAMUs in the future. This projection was based on use of expert panels which reviewed, on a facility-by-facility basis, a randomly selected sample of 79 corrective action facilities and determined when CAMUs would be employed in remediation. The impacts estimated for these facilities were extrapolated to the corrective action universe to develop a national estimate of impacts for the CAMU rule. The Agency estimated that the existing rule would result in CAMUs being employed at approximately 1,500 facilities, or approximately 75 CAMUs per year over a 20 year period.

However, based on data showing actual CAMU usage over the past seven years, the Agency believes the 1993 RIA projections do not represent an accurate forecast of the expected use of CAMUs in the future. These data, discussed in more detail below, show an actual CAMU approval rate of approximately six CAMUs per year. The disparity between the 1993 RIA projections and the actual usage is likely the result of four factors. First, the 1993 RIA baseline

is very different from the remedial setting which has existed in recent years. Chiefly, the RIA assumed significant excavation and treatment of wastes at sites, with heavy reliance on combustion technologies and little use of innovative treatment or remedial approaches. These approaches tend to be less expensive than combustion technology, and are much more available and in use than was anticipated in the 1993 RIA. Therefore, the pervasive demand for CAMUs to lower large remedial costs did not materialize as anticipated in the 1993 RIA. Second, due to its timing, the RIA estimates do not include impacts on CAMU use which resulted from various remedial policy developments such as the stabilization initiative, the use of environmental indicators, and the Phase IV LDR soil treatment standards. These developments have resulted in increased stabilization of sites, and thus less excavation and treatment of wastes (in the short term). This shift created conditions which reduced the need to rely on CAMUs as much as had been originally estimated in the 1993 RIA projections. Additionally, the availability of alternatives to CAMUs, such as staging piles and areas of contamination (AOCs), has potentially decreased the use of CAMUs somewhat compared to that originally projected. Third, the Agency thinks that the RIA usage projections may have been unrealistically high given that most corrective action facilities are in the investigation stage. Finally, the Agency believes that CAMU use has been dampened over the past seven years due to the uncertainty surrounding the use of CAMUs which resulted from the CAMU litigation, which followed shortly after the rule's promulgation.

Therefore, the Agency employed the data on existing CAMUs in the CAMU Site Background Document. These data were collected from regional and state site managers on CAMUs approved to date under the existing CAMU rule. This report contains information on 39 CAMUs approved under the existing rule for which the Agency had good quality data. These CAMUs were those identified by the EPA Regions as either approved or currently under discussion. For each CAMU, the Agency obtained information on the use of the CAMU at the site, types of wastes managed, treatment required, and unit design; the data are contained in the CAMU Site Background Document, which is included in the docket for today's proposed rule.

Using these data, the Agency estimated an annual CAMU approval rate for the past seven years, and applied that rate to project CAMU usage in the future. In projecting future use based on historical data, the Agency assumes that the 39 CAMUs are reasonably representative of expected future CAMU use. This assumption rests on the completeness of the data in the CAMU Site Background Document; this document contains information from all the CAMUs approved to date for which the Agency had good data. Therefore, it provides a reasonable basis for understanding how the CAMU rule has been implemented to date. For purposes of this analysis, the Agency assumes there will be no new regulations or policy initiatives which would affect CAMU usage in the future. (Note: One exception in the anticipated change is the removal of the uncertainty associated with the CAMU litigation. The Agency has assessed the impacts from this change on the CAMU usage rate as a part of the analysis of the incremental impacts of today's proposed.)

These historical data also helped identify the differences in a CAMU under the existing rule (baseline case) as compared to a CAMU under the proposed provisions (post-regulatory case). As discussed in more detail below, the Agency used the information on the 39 existing CAMU remedies to assess consistency with the proposed provisions in today's rule. This assessment involved a facility-by-facility comparison of the existing remedy (baseline case) with the proposed provisions (post-regulatory case). In such an approach, the Agency again assumes that these actual CAMU remedies selected in the past are reasonably representative of CAMU remedies which would be selected under baseline conditions in the future. However, the Agency believes this assumption to be sound for the same reasons stated above regarding CAMU usage. EPA thinks these remedies are the reasonable outcome of the existing CAMU regulations implemented within the context of standard remedial goals for cleanup. The Agency requests comment on this assessment, and any potential effects of using these historical data to assess the impacts of today's rule.

Additionally, the Agency requests comment on the assumptions behind the development of the baseline and post-regulatory scenarios employed within this analytical framework. Comments are requested on the accuracy of the results derived from employing the framework described above for this analysis.

b. *Baseline Case Description.* The baseline scenario provides a reference against which the impacts of a particular action (e.g., a regulation) are measured. For the purposes of this analysis, the baseline is defined as the 1993 CAMU rule as implemented to date. The data underlying EPA's baseline analysis are described in the CAMU Site Background Document, which is included in the docket to today's proposed rule. This document provides detailed information on 39 existing CAMUs approved as of early 2000; these data have been verified by EPA Regional staff. Of the 39 CAMUs, nine are temporary CAMUs. According to these data, approximately 70 percent of facilities using CAMUs are performing treatment of waste. As mentioned above, EPA assumes that the 39 existing CAMUs are representative of future site characteristics and CAMU usage rates.

The Agency has not attempted to adjust this baseline to account for the effects of the uncertainty surrounding the CAMU ''litigation cloud,'' which EPA believes has slowed the implementation of the CAMU rule since shortly after its promulgation. As discussed above, the 39 CAMUs implemented under the existing rule represent the CAMUs known to be fully approved or under discussion to date. These CAMUs were approved as a part of the overall remedy at the facility, and therefore would generally be expected to follow the remedy selection criteria for long-term reliability and protectiveness recommended in EPA guidance (in addition to the CAMU requirements).

The baseline is discussed in greater detail in the Economic Analysis of the Proposed Amendments to the CAMU Rule.

c. *Post-Regulatory Case Description.* The post-regulatory scenario is modeled as the CAMU rule amended by the provisions in today's proposed rule. The reader is directed to the preamble discussion and rule language for an understanding of the proposed rule provisions. The economic analysis focuses on the impacts from the proposed information submittal requirements related to the CAMU approval process, the treatment requirements and adjustment factors, and the liner and cap requirements. Although today's proposed amendments to the CAMU rule would be more stringent than the existing federal CAMU regulations, EPA believes in practice that CAMUs are already generally meeting these standards under the existing rule. Additionally, a bounding analysis is included which examines the overall impact of the proposed provisions on the rate of

CAMU usage. It should be noted that the grandfathering provision of the proposed rule results in impacts accounted for in the post-regulatory scenario in this analysis. In other words, for the window of opportunity discussed in the proposed rule wherein CAMUs can be approved under existing rule conditions, there is a divergence in compliance behavior with the baseline, and these impacts are counted as attributable to today's rule. See the Economic Analysis of the Proposed Amendments to the CAMU Rule for a more detailed discussion of the post-regulatory scenario for this analysis.

d. *Incremental Impacts:* The analysis of today's proposed rule focuses on two potential impacts: (1) the incremental impacts associated with the changes to the approval process for CAMUs; and, (2) the incremental impacts associated with the change in treatment, unit design, and use of temporary (i.e. treatment and/or storage) CAMUs. Additionally, the Agency has prepared a bounding analysis estimating the impacts from a change in the overall usage of CAMUs resulting from today's proposed amendments. The methodology and results for these two components of the analysis, and for the bounding analysis, are discussed below. EPA requests comment on the impacts assessed in this analysis.

2. CAMU Administrative Approval Costs Assessment

Today's proposed amendments to the CAMU rule formalize a number of administrative steps in the CAMU approval process. This analysis examines the incremental impacts associated with those administrative steps compared to the approval process in the baseline. The estimates are formulated through input by EPA Regional and state regulators. The regulators contacted have extensive knowledge of the approval process under the existing CAMU rule, and understand the changes to that approval process that would be brought about by the proposed amendments. The analysis estimates total incremental impacts ranging between $53,000 and $175,000 per year. The Agency requests comment on the approach described below which was employed in estimating the incremental impacts associated with today's proposed action.

The Agency followed three steps in assessing the incremental impacts from the CAMU approval process formalized in the proposed rule. First, the Agency selected four CAMU experts from the Regions and one from the states. These experts were selected based on their knowledge of CAMU implementation under the existing rule and their knowledge of the proposed amendments. Of the 39 CAMU total, the number of CAMUs approved within all the selected experts' regions/state sum to 25. Second, the Agency obtained incremental cost/burden estimates from CAMU experts through phone contacts made separately with each expert. Experts were provided with a copy of Appendix A of the settlement agreement reached between EPA and the Petitioners (this document is included in the docket for today's proposed rule). The phone contacts followed a set of questions designed to cover all areas of the proposed rule (for a copy of these questions, see the Economic Analysis of the Proposed Amendments to the CAMU Rule). EPA requested that experts estimate the additional approval burden for both regulators and owner/operators, as each would participate variously in performing such approval steps. Third, the Agency tabulated the burden estimates made by the CAMU experts. This process provided the Agency with expert estimates of the incremental impacts for the CAMU approval process. The estimates provided by individual experts ranged from a low of six hours total to a high of 1,360 hours total per CAMU. Using the individual estimates of burden provided by the experts, EPA calculated an average total burden range. EPA estimates the range of total incremental burden, calculated as an average of the five expert estimates, to be between 98 hours and 323 hours per CAMU.

Expert views differed significantly on the impacts. Two of the experts believed the formalization of a process associated with certain steps might potentially reduce overall burden. Such a formalized process, they believed, would result in less time spent discussing the proper approach to take at a particular stage in the approval process. Alternatively, one expert thought that the changes in process requirements were so onerous that they could potentially drive facilities away from using CAMUs.

The experts estimated additional burden associated with four areas of the proposed amendments: (1) Information submission associated with the determination of whether wastes were subject to LDRs at the time of disposal. This requirement is a part of the provision in the proposed amendments which deals with CAMU waste eligibility; (2) identification of principal hazardous constituents (PHCs). Only one expert estimated additional burden associated with identification of PHCs at the site; (3) adjustment factor E (§ 264.552(e)(4)(v)(E)) which would offer adjustment from the treatment standards based on chemical/physical properties of the waste and the long-term protection offered by the unit. Experts estimated additional burden associated with use of the factors for adjustment from treatment in the proposed amendments. The experts focused on adjustment factor E in making their burden estimates, as it was perceived to be the most complicated, and therefore the most likely to require significant formalized written justification; and, (4) the liner and cap standards in the proposed rule.

Employing these burden estimates, the Agency calculated the cost impact attributable to these provisions. The Agency performed the following steps in estimating total burden. First, the Agency estimated the number of CAMUs approved annually. The per CAMU estimate of additional burden is multiplied by an estimate of the number of CAMUs approved per year. As discussed in the Economic Analysis of the Proposed Amendments to the CAMU Rule, EPA assumed this rate to be the same as that calculated for the baseline. This rate was estimated to be six CAMUs per year. This analysis does not consider any changes in the number of CAMUs approved per year which could result from the rule. Second, the Agency multiplied the additional hours estimated for approval by the annual number of CAMUs approved. This calculation results in an estimate of the total incremental burden associated with the proposed amendment approval process. This burden estimate ranges from 590 hrs per year to 1,940 hrs per year. Third, the Agency obtained a labor rate to apply to the estimates of additional hours. EPA used the highest hourly labor rate ($90/hour) from the recently approved Part B Permit ICR because the CAMU experts did not provide a breakdown of labor categories in their estimates. Fourth, the Agency multiplied the total incremental hours estimated for the CAMU approval process under the proposed amendments by the labor rate. This produced an estimate for the total incremental impacts attributable to the approval process in the rule, which ranges from $53,000 per year to $175,000 per year. The Agency requests comment on the specific steps employed to estimate impacts of the approval process, in particular, whether any important steps have been left out or mischaracterized with respect to the impacts of these proposed provisions.

This range represents the annual incremental impacts estimated to result from the proposed amendments, assuming that six CAMUs are approved

per year. If the annual approval rate changed, the annual impacts for that year would change accordingly. Dividing that range by six (the number of CAMUs approved per year) yields an estimate of the incremental impact per CAMU; this estimate ranges between approximately $8,800 and $29,000 per CAMU. This calculation assumes that all the costs for CAMU approval occurred within a single year. A bounding analysis conducted using the highest burden estimate to calculate the impacts for the approval process yields an impact of $734,000 per year, or $122,000 per CAMU. The Agency requests comment on costs estimated in this section, as well as additional data to more accurately analyze these costs.

3. Assessment of the Incremental Impacts Related to the Treatment and Unit Design Provisions, and to the Treatment and/or Storage Only CAMU Provisions

This section examines the incremental impacts attributable to the treatment and unit design provisions, and to the treatment and/or storage only CAMU provisions in today's proposed rule. As described in the analytical framework discussion above, this analysis examines what changes would be required to make the 39 existing baseline CAMUs consistent with the new amendments. Based on these estimated changes, the Agency determines the impacts of the proposed amendments. (Please see the side-by-side comparison of the existing CAMU regulations and today's proposed rule language which is included as an appendix in the Economic Analysis of the Proposed Amendments to the CAMU Rule for today's proposed rule).

The Agency first examines the treatment and unit design specifications employed for existing CAMUs under the baseline. These baseline CAMU remedies were assessed in light of the treatment and unit requirements proposed in the CAMU amendments. An assessment was made of expected differences in treatment and unit design anticipated under the proposed amendments, and the resulting costs for those changes were quantified.

The section next addresses the treatment and/or storage only provisions in the CAMU amendments. EPA assesses how the ''temporary'' CAMU (referred to as ''treatment and/or storage only'' CAMUs in the today's rule) provisions have been implemented in the baseline by examining the temporary CAMUs approved to date under the existing rule. These CAMUs were analyzed in light of the new treatment and/or storage only CAMU provisions in the proposed amendments.

The Agency requests comment on the approach used to assess the changes in treatment, unit design, and use of treatment and/or storage only CAMUs resulting from today's proposed amendments. In particular, the Agency requests information addressing the expected significance of the treatment or unit design standards.

a. *Treatment and Unit Design Standards Implemented in the Baseline:* Data on the implementation of the existing CAMU rule shows that the 30 permanent CAMUs approved to date have generally employed significant treatment of wastes (approximately 70 percent of CAMUs employed treatment of wastes prior to disposal) with disposal in protective units (*i.e.*, generally employing liners for new units, protective caps, and groundwater monitoring). EPA has detailed information on 39 CAMUs in the baseline (see the CAMU Site Background Document in the docket for today's proposed rule for a complete discussion of each CAMU). These data provide a reasonable datum from which to assess the incremental impacts associated with the new treatment and unit design provisions in the proposed amendments.

b. *Treatment and Unit Design Provisions in the Post-Regulatory Case:* The proposed amendments would establish national minimum treatment standards which all principal hazardous constituents (PHCs) must meet prior to disposal in a CAMU, unless the Agency determines in a given case that the standards are inappropriate (see discussion of adjustment factors below). This national minimum standard, which is essentially taken from the treatment standard promulgated for hazardous soils in the Phase IV LDR Final Rule, among other things, requires treatment of wastes to 90 percent reduction from the original concentrations, capped by 10xUTS level. This standard would apply for all CAMU-eligible wastes.

Accompanying the national minimum treatment standard are five adjustment factors, which provide site-specific flexibility in applying these treatment standards through identification of certain conditions under which full compliance with the national standard may be adjusted. This adjustment may be employed to make treatment more or less stringent, and may be used to adjust a treatment level or method. These proposed treatment requirements and adjustment factors were crafted through examination of the current implementation of the CAMU rule in the baseline, and the general process involved in remedial selection in the corrective action program, as well as the treatment variances used for as-generated waste under the Land Disposal Restrictions program.

The proposed amendments would also establish standards for liners at all new and replacement units or lateral expansion of existing units, and caps at units where waste is left in place. The reader is directed to the relevant discussions on the proposed provisions in their appropriate preamble sections above (see ''Liner Standard,'' ''Cap Standard,'' and ''Adjustment Factors to the Treatment Standard'').

c. *Incremental Impacts Associated with Proposed Treatment and Unit Design Provisions:* Having examined the provisions on treatment and unit design in the proposed amendments, the Agency then assessed the incremental impacts from these provisions with respect to current baseline implementation of the CAMU rule. The Agency examined how the baseline requirements have been implemented to date, and assessed where changes would be required at these facilities under post-regulatory conditions. See Economic Analysis of the Proposed Amendments to the CAMU Rule for details on this comparison.

EPA estimated the incremental costs associated with these standards through the following steps. First, the Agency compared the data on each baseline CAMU against the provisions in the proposed CAMU amendments. For this assessment, EPA addressed the following questions for each CAMU remedy, where necessary: (1) Does the facility have constituents that would likely be designated as PHCs?; (2) For a facility where PHCs are determined to likely be present, was treatment performed to reduce PHC concentrations?; (3) Where treatment was being performed, was it meeting the proposed national minimum standards?; (4) Was the CAMU an existing unit?; and, (5) What liner and cap requirements were instituted for the CAMU? Second, based on this assessment, the Agency made a determination as to whether the CAMU was consistent with the treatment and unit design provisions of the proposed amendments. Third, where the Agency identified inconsistency with the proposed national minimum standards, application of the adjustment factors was considered. Potential use of adjustment factors was only considered appropriate where site-specific factors were consistent with the circumstances described in today's preamble for the different adjustment factors. And fourth, where the adjustment factors were not

applicable, the Agency identified the steps that would be necessary to render the CAMU consistent with the proposed provisions. Each of the above steps was performed by EPA based on a detailed knowledge of the baseline CAMU requirements, the proposed rule provisions, and the details of the existing CAMU being analyzed. Please see the site summaries for the 39 CAMUs which are included in the CAMU Site Background Document (included in the docket for today's proposed rule). Additionally, the reader is directed to the preamble discussion of the adjustment factors for elaboration on how each adjustment factor would be applied at a given facility.

EPA performed this evaluation for the 30 permanent baseline CAMUs approved to date. The Agency estimated costs in the cases where additional requirements were identified as necessary for the CAMU to reach consistency with the proposed provisions. Results for the 30 permanent CAMUs are shown below in Exhibit VIII–1; results for the nine treatment and/or storage only CAMUs are discussed following the exhibit.

For the 30 permanent CAMUs, EPA estimates that 15 facilities would potentially require use of one of the adjustment factors to achieve consistency with the proposed amendments. Note that the potential use of adjustment factors was only considered where such use would be consistent with the circumstances described in today's preamble for each adjustment factor. Of the five adjustment factors provided for in the amendments, adjustment factor A for technical impracticability was estimated to be needed four times and possibly two additional times to achieve consistency, adjustment factor B addressing consistency with site cleanup goals was estimated to be possibly needed three times to achieve consistency, and adjustment factor E providing adjustment from the treatment standards based on chemical/physical properties of the waste and the long-term protection offered by the unit was estimated to be possibly needed eight times to achieve consistency. (Note that the estimated frequency of use for the individual adjustment factors does not sum to the overall number of facilities using adjustment factors due to the Agency identifying different available options for adjustment factor use at several facilities.)

EXHIBIT VIII–1.—COMPARISONS OF BASELINE PRACTICES AND POST-REGULATORY REQUIREMENTS FOR PERMANENT CAMUS

CAMU comparison: baseline to post-regulatory	Number of CAMUs	Significance of differences	Estimated incremental impact
Treatment and Unit Design Consistent With Post-Regulatory Requirements.	29	N/A	N/A.
Treatment Not Consistent With Post-Regulatory Requirements.	0	N/A	N/A.
Unit Design Not Consistent With Post-Regulatory Requirements.	2	Under the New Rule, Two Facilities May Have Required Additional Cap Design Features.*	CAMU Cap Costs for Facility = $600,000 to $1,200,000 CAMU Cap Costs for Facility = $205,000. [TOTAL = $800,000 to $1,400,000].
Treatment and Unit Design Not Consistent with Post-Regulatory Requirements.	0	N/A	N/A.

* These two CAMUs address the disposal of off-site soils contaminated with lead that resulted from smelting operations. Both facilities remain subject to long-term maintenance and periodic review.

As shown in Exhibit VIII–1, the analysis revealed two facilities for which the unit design employed in the original CAMU decision was not consistent with the proposed amendments. In both cases, a final cap would be required to achieve consistency with the proposed provisions. EPA estimated costs for these caps based on the specific information for the given facility. These costs are shown in the exhibit above, and discussed in greater detail in the background document for the economic analysis. EPA estimated costs for the cap at one facility to range from $600,000 to $1,200,000, and costs for the cap at the other facility at approximately $205,000.

The total estimated costs associated with ensuring that all the permanent CAMUs approved under the existing rule are consistent with the proposed amendments is estimated to range from approximately $800,000 to $1,400,000 (or annualized over 20 years at 7 percent yields $76,000 to $132,000 per year). The Agency believes that these estimates reasonably cover the additional requirements to achieve such consistency with the proposed standards. However, EPA acknowledges the possibility that, due to the variability of site characteristics and the limitations of the available data for the given CAMUs, additional negligible costs such as minor additional treatment of small volumes of waste could be incurred at any given facility. This analysis does not consider any changes in the number of CAMUs approved per year which could result from the rule. The Agency requests comment on the approach employed to determine the incremental costs of the proposed treatment and unit design provisions, and the resulting estimates presented in this section.

d. *Incremental Impacts Associated with the Treatment and/or Storage Only CAMU Provisions:* The 1993 CAMU Rule provisions did not contain standards that were specific to temporary CAMUs (which are now called treatment and/or storage only CAMUs in the proposed provisions). However, data indicate that nine treatment and/or storage only CAMUs were approved in the baseline, and were generally employed for short-term treatment or storage of wastes at a site. These data provide a useful datum from which to assess the potential for incremental impacts resulting from the proposed amendments as they address treatment and/or storage only CAMUs.

The Agency analyzed the potential incremental costs associated with achieving consistency with the proposed rule standards for the treatment and/or storage only CAMUs. No inconsistencies were identified for these nine CAMUs; therefore, there were no incremental costs estimated for these units. This analysis does not consider any changes in the number of CAMUs approved per year which could result from the rule.

As stated above, EPA made these comparisons based upon the types of contaminants, the unit design standards achieved, and the general circumstances surrounding the use of CAMUs. EPA requests comment on the comparisons discussed in this section, upon which the cost impacts are based.

4. Assessment of the Incremental Change in the Number of CAMUs Approved

One potential impact anticipated to result from today's proposed rule is a change in the average number of CAMUs approved per year. This section presents the Agency's bounding analysis of the impacts associated with an incremental change in the number of CAMUs. The Agency seeks comment on the approach for projecting potential increase or decrease in the use of CAMUs resulting from these amendments.

The 1993 CAMU Rule was designed to provide incentives for remediation by removing certain regulatory requirements that affect the management of hazardous remediation waste during cleanup. The rule allows facilities to manage hazardous waste in a CAMU without triggering the Land Disposal Restrictions (LDR) requirements, and to dispose of hazardous remediation waste in a CAMU. The CAMU is exempt from minimum technology requirements (MTRs), although it is subject to performance-based standards intended to protect human health and the environment. The rule established performance standards for the design, operation, and closure of CAMUs, and provided the site-specific flexibility that EPA believes is necessary to encourage remediation at cleanup sites. However, EPA was sued on the CAMU rule shortly after its promulgation. The resulting uncertainty surrounding the viability of the CAMU rule, along with other factors discussed above such as the increased use of Areas of Contamination (AOCs) and staging piles, the introduction of the Phase IV Land Disposal Restriction (LDR) soil treatment standards, and the stabilization initiative in corrective action, led to considerably less use of CAMUs than the Agency originally anticipated.

With today's proposed rule, the Agency intends to resolve the litigation uncertainties which have dampened CAMU usage. Such resolution could promote the increased use of CAMUs. However, as discussed above, the Agency does not expect CAMU usage to approach the rate projected in the 1993 CAMU RIA (roughly 75 CAMUs per year). The Agency believes that the ''litigation cloud'' only accounts for part of the difference between actual CAMU usage over the past seven years and the usage estimated in the 1993 RIA. Other factors contributing to a potential change in future CAMU use include the impact of the formalized approval process, and the effect of the treatment and unit design provisions. It is very difficult to assess the significance of these factors on the individual decision at a given facility regarding whether to use a CAMU in remediation. This complexity led the Agency to prepare an order-of-magnitude analysis which seeks to establish the general direction of change in CAMU usage, and to quantify the approximate impacts from such change. These estimates focus only on the potential for changes in the number of CAMUs approved, and do not address the possible impacts from the formalized approval process or the treatment and unit design requirements of today's proposed rule. These impacts are presented to illustrate the potential savings which could come from such a change in CAMU usage, and should not be considered a part of EPA's estimate of the actual impacts from today's proposed rule.

The Agency assessed the overall direction of the expected change in CAMU use for the three time periods identified for purposes of this analysis: (1) Grandfathering Window (August 2000 to January 2002); (2) Early After Promulgation (January 2002 to January 2003); and, (3) Post-Promulgation Equilibrium (January 2003 to 2006). These time periods were constructed by the Agency in order to understand the effects of the factors identified above according to logical breaks in their influence. For example, the Agency believes that facilities may increase their use of CAMUs during the Grandfathering Window, given that CAMUs approved before the effective date of the final amendments would be exempt from the new requirements. Additionally, CAMUs which are not approved prior to the effective date of the final amendments but for which substantially complete applications (or equivalents) were submitted to the Agency on or before 90 days after the publication date of the proposed rule would also be grandfathered in under the 1993 CAMU rule requirements. During this period facilities will also be aware of EPA's intent to resolve the litigation uncertainty, which EPA believes has dampened CAMU use. Similar assessments were performed for the two other time periods.

The Agency estimated the potential change in the number of CAMUs employed for each of the three time periods based roughly on the baseline CAMU usage figure of six CAMUs per year. Given the complexity of projecting the effect of these influences on CAMU usage in the future, these estimates are provided for illustrative purposes only. The cost savings from this change were estimated using results from the 1993 CAMU RIA (see page 3–9 of that report). This analysis, prepared in support of the CAMU rule, estimated the cost savings at a randomly selected sample of corrective action sites based on expert panel assessments of the costs for remediation with and without a CAMU. These figures were extrapolated to determine the national cost impacts for the CAMU rule. The RIA presents an annual average cost savings per CAMU of $0.5 million to $0.8 million per facility in 1992 dollars (changing the figures to 1999 dollars yields an annual cost savings per CAMU ranging from $0.75 million to $1.20 million).

This range was employed for purposes of this analysis to estimate order-of-magnitude cost impacts resulting from the changes in CAMU usage due to today's proposed rule. The annual cost savings per CAMU figure presented in the 1993 RIA provides the only readily available data from which to quantify the impacts of a shift from remediation without a CAMU to use of a CAMU. Although, the Agency believes that this cost savings estimate could significantly overestimate actual savings, due to the assumptions employed in the 1993 RIA regarding excavation and combustion of cleanup wastes. The Agency requests input on data sources to estimate such impacts. (The 1993 CAMU RIA is available in the docket.) Within each of the three time periods examined, a facility could either shift from not using a CAMU (baseline) to using a CAMU (post-regulatory), or using a CAMU (baseline) to not using a CAMU (post-regulation). In the case where a facility did not use a CAMU, there is a range of possible alternatives which could be considered. For purposes of this analysis, the Agency bracketed this range with leaving waste untouched on one hand, or performing full remediation without a CAMU on the other hand. As stated above, EPA employed the cost savings estimate from the 1993 RIA to model the cost savings for the case of a shift from performing full remediation without a CAMU (baseline) to using a CAMU (post-regulatory). EPA did not possess data on either the possibility of a shift from leaving waste in place (baseline) to using a CAMU in remediation (post-regulatory), or the cost impacts

associated with such a shift. Finally, EPA does not believe it is reasonable to assume that facilities will shift away from CAMU use as a result of today's proposed rule; the anticipated costs from today's rule are not significant enough to result in such shifts. However, in the Post-Promulgation Equilibrium time period, EPA modeled the case of a shift from CAMU use (baseline) to full remediation without a CAMU (post-regulatory). While the Agency does not expected such a change, it is modeled below for illustrative purposes. The impacts from the changes in CAMU usage for the three time periods are assessed below according to these categories of change identified and discussed above (see exhibit below).

For greater details on the approach to estimating these impacts, please refer to the Economic Analysis of the Proposed Amendments to the CAMU Rule in the docket for today's proposed rule. These impacts are presented in the exhibit below.

EXHIBIT VIII–2.—ASSESSMENT OF THE POTENTIAL CHANGE IN CAMU USAGE RESULTING FROM THE PROPOSED RULE

Categories of potential change in CAMU usage	Scope of the assessment (August 2000 through approximately 2006)		
	Grandfathering window (Aug. 2000 to Jan. 2002: approximately 1½ years [1]	Early after promulgation (Jan. 2002 to Jan. 2003: 1 year) [2]	Post-promulgation equilibrium (Jan. 2003 through approximately 2006) [3]
Baseline: Full remediation (no CAMU); Post-Reg: CAMU.	5 to 10 facilities estimated (annual savings of $0.75 to $1.20 million per facility).	Change Highly Uncertain ..	Potential for 5 facilities estimated (annual savings of $0.75 to $1.20 million per facility).
Baseline: Leave wastes untouched (no CAMU); Post-Reg: CAMU.	5 to 10 facilities per year estimated (no cost info available).	Change Highly Uncertain ..	Potential for 5 facilities estimated (no cost info available).
Baseline: CAMU; Post-Reg: Full remediation (no CAMU).	No Change Estimated	Change Highly Uncertain ..	Potential for 5 facilities estimated (annual cost of $0.75 to $1.20 million per facility).
Baseline: CAMU; Post-Reg: Leave wastes untouched (no CAMU).	No Change Estimated	Change Highly Uncertain ..	Potential for 5 facilities estimated (no cost info available).

Notes:
[1] Publication of the proposed amendments (August 2000) to the anticipated effective date of Final rule (Jan. 2002), which is 90 days after promulgation of the Final rule (Oct. 2001).
[2] The effective date of Final rule to one year after effective date of Final rule.
[3] One year after effective date of Final rule for roughly 5 years of ''equilibrium.''

a. *Grandfathering Window:* For this time period, the cost savings associated with a potential increase in CAMU usage of 5 to 10 CAMUs per year are estimated as:

5–10 CAMUs per year × *$0.75–$1.20 million per year* = $3.75–$12 million per year per CAMU

This estimate, $3.75 to $12 million per year in savings, is a rough figure based upon the projected increase in CAMU use associated with this period. The main influence behind this increase in CAMU usage is the removal of the litigation cloud in the context of the grandfathering provision allowing approval under the existing rule. While it is possible that the facilities which shift to CAMU usage under this scenario are those which leave waste untouched in the baseline, cost figures on this shift were not available. Therefore, no estimate of the impacts associated with this category of change is provided.

b. *Early After Promulgation:* As the exhibit above shows, EPA believes that the factors influencing potential changes in CAMU usage during this period are too uncertain to provide an assessment of the potential impacts for this time period. Beside the factors identified above, there may be a reduction in CAMU usage resulting from the anticipated increase in CAMUs within the grandfathering time window. Please see the background document for greater discussion on this issue.

c. *Post Promulgation Equilibrium:* For this time period, the cost savings associated with a potential increase or decrease in CAMU usage of 5 CAMUs per year are estimated as:

5 CAMUs per year × $0.75–$1.20 million per year = $3.75–$6 million per year per CAMU

This estimate, ranging from a positive cost of $6 million per year to a savings of $6 million per year, is a rough figure based upon the projected change in CAMU usage for this period. Again, while it is possible that the facilities which shift to or from CAMU usage under this scenario would be those which left waste untouched, cost figures on this shift were not available. Therefore, no estimate of impacts associated with such a shift is provided.

The main competing influences in this time period are the removal of the uncertainty surrounding the litigation of the CAMU rule, and the potential dampening effect of the formalized approval process and treatment/unit design standards.

The range of estimates for the bounding analysis are shown by year for the scope of the analysis in Exhibit VIII–3 below. The Agency requests comment on this analysis, including the overall approach to estimating changes in CAMU usage, as well as the specific results presented above.

EXHIBIT VIII–3.—IMPACTS ESTIMATED FOR POTENTIAL CHANGES IN THE NUMBER OF CAMUS EMPLOYED PER YEAR; A BOUNDING ANALYSIS: OVER THE SCOPE OF ANALYSIS

[In thousands of dollars]

Bounding analysis estimates	Impact estimates for each year within the scope of analysis					
	2001	2002	2003	2004	2005	2006
Impacts from CAMU Usage Changes (Illustrative in Nature).	$3,750 savings = $12,000 savings.	No estimate made.	$6,000 savings = $6,000 cost.	$6,000 savings = $6,000 cost.	$6,000 savings = $6,000 cost.	$6,000 savings = $6,000 cost.

This bounding analysis was performed in order to account for the cost impacts resulting from a change in the number of CAMUs approved per year. For illustrative purposes only, EPA estimated the total annual impacts of the rule including the bounding analysis estimates. The Agency developed an upper bound estimate by adding the high-end cost associated with a potential change in CAMU usage, $6 million per year, to the high-end of the total cost range shown above. This summation yields an upper bound cost for the rule of $6.3 million per year. EPA developed a lower bound estimate by adding the low-end impact associated with a potential change in CAMU usage, $6 million per year in savings, to the low-end of the total cost range shown above. This summation yields a savings for the rule of approximately $5.9 million. Therefore, the bounding analysis provides a range from approximately $5.9 million in savings to $6.3 million in costs. As shown in Exhibit VIII–3, for the year of the grandfathering period, the savings could be up to $12 million.

The question may be raised as to how this cost savings for increased CAMU usage in the above bounding analysis compares with the $1 to $2 billion annual savings in the 1993 CAMU RIA. The 1993 RIA baseline represented facilities performing remediation under the corrective action requirements, generally excavating wastes and treating in compliance with the Land Disposal Restriction (LDR) requirements via combustion technologies. Given the resulting high costs for such baseline remedial approaches, the relief provided by the original CAMU regulation was presumed to be widely applied in the post-regulatory case. Therefore, significant CAMU usage was estimated. The baseline for today's proposed rule is described by the historical data EPA obtained on those facilities which have approved CAMUs over the past seven years. The projections made above regarding the potential change in CAMU usage resulting from today's proposed provisions are based roughly on these baseline CAMU usage figures. Therefore, the increase in CAMU usage projected in the post-regulatory case in the above bounding analysis for today's proposed rule is relatively low.

The difference in projected CAMU usage from the 1993 RIA and the actual usage seen in the CAMU Site Background Document is believed to be attributable to four factors. These four factors were discussed above under the analytical framework. The ''litigation cloud'' effect is just one of the factors posited to account for this difference. Therefore, the potential resolution of this litigation uncertainty through today's proposed rule is not anticipated to result in the significant CAMU usage estimated in the 1993 RIA. Furthermore, the increased CAMU usage estimated in the above bounding analysis is not intended to serve as an update to the 1993 RIA projections. Rather, due to the complexity involved in estimating CAMU usage in the post-regulatory case for today's proposed rule, the above estimates are made for illustrative purposes only, and do not represent a definitive statement of the expected savings from the rule.

5. Assessment of the Total Impacts for the Proposed Amendments to the CAMU Rule

This section presents a brief assessment of the total impacts of the Proposed Amendments to the CAMU Rule. The Agency presents the impacts estimated for the formalized CAMU approval process and for the treatment/unit design standards, and treatment and/or storage only provisions for CAMUs below in Exhibit VIII–4.for a presentation of the total impacts; see also The estimates for the bounding analysis are discussed above, and are not included in the exhibit. Please see the Economic Analysis of the Proposed Amendments to the CAMU Rule for a full discussion of these impacts.

EXHIBIT VIII–4.—TOTAL ANNUAL IMPACTS ESTIMATED OVER THE SCOPE OF ANALYSIS, ASSUMING CONSTANT RATE OF 6 CAMUS PER YEAR

[In thousands of dollars]

Impacts assessed for CAMU amendments	Impact estimates for each year within the scope of analysis					
	2001	2002	2003	2004	2005	2006
1. CAMU Approval Process Impacts	No Costs Incurred	$53–$174	$53–$174	$53–$174	$53–$174	$53–$174
2. Impacts from Treatment and Unit Design Requirement.	No Costs Incurred	$76–$132	$76–$132	$76–$132	$76–$132	$76–[1] $132
Total Impacts	No Costs Incurred	$130–$305	$130–$305	$130–$305	$130–$305	$130–$305

Notes:

[1] This cost was calculated from a capital cost, annualized over 20 years. Therefore, it would continue for 15 more years.

The total impacts associated with the proposed rule are estimated as the sum of the incremental approval costs and the incremental treatment/unit design costs. The analysis provides estimates of the impacts from the rule from the grandfathering window to five years following the effective date of the rule (2001 to 2006). As discussed above, the impacts for the treatment and unit design standards are annualized figures associated with two facilities which

required additional unit design criteria be met to achieve consistency with the proposed amendments. The cost impacts estimated for the potential change in the number of CAMUs are considered in the bounding analysis, which are discussed below. The total impacts are determined to range from $130,000 per year to $305,000 per year.

B. Regulatory Flexibility Act (RFA) as Amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA)

This section of the preamble addresses the potential impacts incurred by small entities as a result of the proposed CAMU amendments. The Agency requests comment on the approach employed to assess small entity impacts, which is discussed below. In particular, the Agency seeks comment on whether the potential impacts to small entities have been fully addressed in this analysis.

1. Methodology to Assess Small Entity Impacts

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of the proposed amendments to the rule on small entities, small entity is defined as: (1) A small business that meets the RFA default definitions for small business (based on SBA size standards *www.sbaonline.sba.gov/size);* (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. EPA has determined that there are two facilities employing CAMUs which are small entities, and that these facilities would incur impacts ranging from no impact to 0.004 percent of net sales. Additionally, there are nine facilities for which EPA could not obtain the data to determine size status, but which EPA had the data to assess impacts. For these nine facilities, the impacts ranged from 0.002 to 0.48 percent of net sales. The Agency reached this determination based on the analysis which is described below.

a. *Framework for the Analysis.* The Agency faced two important questions in developing the framework for analyzing small entity impacts. The first was how to address defining the universe of facilities affected by today's rule. The second was how to approach assessing the incremental changes in CAMUs under the baseline and post-regulatory scenarios.

The universe of facilities which could potentially employ a CAMU in remediation, and thus could be affected by today's rule, includes facilities performing cleanups under RCRA corrective action, Superfund, and state cleanup authorities. There are over 6,000 facilities which can be potentially reached through corrective action authority; this figure does not include Superfund sites or other cleanup sites where CAMUs may be used in the future. Of these facilities, today's proposed rule would not impose costs on any existing CAMUs that continue to manage wastes in the general manner for which they were approved, or, of course, on any facilities which manage their wastes without the use of a CAMU (*e.g.,* they send their wastes off-site). Today's proposed standards would apply only to CAMUs which do not remain subject to the existing standards under the grandfathering provisions. However, to determine the number of facilities, out of this total number, which would in fact require cleanup at some point in the future, and would employ a CAMU in the remedy, would require significant effort and yield uncertain results.

Therefore, EPA considered the use of existing data on CAMU usage. The Agency first examined the 1993 CAMU RIA, which was performed in support of the existing CAMU rule. In this RIA, the Agency made a projection of the number of facilities which would employ CAMUs in the future. This projection was based on use of expert panels which reviewed, on a facility-by-facility basis, a randomly selected sample of 79 corrective action facilities and determined when CAMUs would be employed in remediation. The impacts estimated for these facilities were extrapolated to the corrective action universe to develop a national estimate of impacts for the CAMU rule. The Agency estimated that the existing rule would result in CAMUs being employed at approximately 1,500 facilities, or approximately 75 CAMUs per year over a 20 year period. The identities of these facilities, which would have been required for assessing the small entity impacts associated with the rule, were not determined; no impacts assessment was performed for the 1993 CAMU rule.

However, based on data depicting the actual CAMU usage rate over the past seven years at six CAMUs per year, the Agency believes the 1993 RIA projections do not represent an accurate forecast of the expected use of CAMUs in the future. (Some reasons for this disparity between the 1993 RIA projections and the actual usage are discussed above). Therefore, the Agency considered using the data on actual CAMU approval for this analysis. This report contains information on 39 CAMUs approved under the existing rule for which the Agency had good quality data. For each CAMU, the Agency obtained information on the use of the CAMU at the site, types of wastes managed, treatment required, and unit design; the data are contained in the CAMU Site Background Document, which is included in the docket for today's proposed rule.

Using these data, the Agency estimated an annual CAMU approval rate for the past seven years, and applied that rate to project CAMU usage in the future. In projecting future use based on historical data, the Agency assumes that the 39 CAMUs are reasonably representative of expected future CAMU use. This assumption rests on the completeness of the data in the CAMU Site Background Document; this document contains information from all the CAMUs to date for which the Agency had good data. Therefore, it provides a reasonable basis for understanding how the CAMU rule has been implemented to date. For purposes of this analysis, the Agency assumes there will be no new regulations or policy initiatives which affect CAMU usage in the future.

Use of these historical data also mitigated the problems associated with determining the differences in a CAMU under the existing rule (baseline case) as compared to a CAMU under the proposed provisions (post-regulatory case). As discussed in more detail above, the Agency used the information on the 39 existing CAMU remedies to assess consistency with the proposed provisions in today's rule. This assessment involved a facility-by-facility comparison of the existing remedy (baseline case) with the proposed provisions (post-regulatory case). In such an approach, the Agency again assumes that these historical data are reasonably representative of future CAMU remedies under baseline conditions. However, the Agency

believes this presupposition to be sound for the same reasons stated above regarding CAMU.

Therefore, the analysis of the small entity impacts anticipated to result from today's proposed rule rests on an assessment of facilities which have existing CAMUs, not an analysis of facilities which will actually be impacted in the future by this rule. As stated above, the Agency believes that this rule will not significantly affect the nature of CAMU usage related to the types of facilities employing CAMUs in the future. Thus, the Agency believes the analysis of future small entity impacts based on historical CAMU usage is reasonable. The Agency requests comment on the assumptions behind and accuracy of the results derived from employing the conceptual framework described above for this analysis.

b. *Methodological Approach for SBREFA Analysis:* This analysis employs the data on the existing CAMUs from the CAMU Site Background Document to assess the potential for impacts on small entities resulting from the proposed rule. The Agency performed two screening analyses using these data. Screening analyses are the tools the Agency uses to assess the potential for the rule to result in a significant impact on a substantial number of small entities, and thus the need for development of a Small Business Advocacy Review Panel. First, the Agency examined those facilities which employed CAMUs in the baseline to determine whether any of these facilities were small entities, and if so whether they incurred a significant impact as a result of the proposed rule. Second, for those facilities for which the size status could not be determined, the Agency assumed small entity status, and performed a significant impact screen using the Sales Test (i.e., assessing the ratio of incremental costs to net sales for a facility). As there are no small organizations or small governmental jurisdictions which currently have CAMUs, these entities are not anticipated to incur any impacts resulting from the rule. The results from each screening analysis are discussed below.

c. *Examination of Existing CAMUs for Small Entity Status:* EPA collected data on the employee size and net sales for the 39 facilities employing CAMU in the baseline (the sources from which these data were obtained are listed in the background document). Using these data, EPA determined, according to the SBA size standards (see www.sbaonline.sba.gov/size/section04b.htm), whether any of the 39 facilities were small entities. Of the facilities for which data existed to determine size status, only two were identified as small entities. The impact incurred by these two small entities was under 0.01 percent of net sales. This finding suggests that it is very unlikely that these two facilities would be significantly impacted by the rule. See the Economic Analysis of the Proposed Amendments to the CAMU Rule in the docket for today's proposed rule for greater detail on this analysis.

d. *Significant Impact Screen of Facilities for Which Size Was Undetermined:* The Agency examined the 11 facilities for which data concerning size status were not available. Using the Standard Industrial Classification (SIC) Code for a given facility, the Agency obtained data on the estimated receipts for small entities within the SIC code and the number of small entities within the SIC code (these data were obtained from *www.sba.gov/advo/stats/int_data.html).* The estimated receipts for these entities were employed as a surrogate for net sales. From these data, the average estimated receipts per small firm within the SIC code was determined. This figure, the average estimated receipts per small firm, was then assumed to be representative of the receipts for the facility in question. The Sales Test ratio (i.e., the ratio of the average estimated receipts per firm by SIC code to the annual incremental costs of the proposed rule incurred by the facility) was then calculated. For the nine facilities for which the data existed to calculate the Sales Test ratio, this ratio ranged between 0.002 percent and 0.48 percent. The Agency believes this range of percentages reasonably validates a conclusion of no significant impacts for these facilities. However, there were two facilities for which the data required to make this calculation were not available. Based on the annual incremental costs projected for these two facilities as a result of the proposed rule, it seems very unlikely that these facilities, if they were small entities, would incur significant impacts. See the Economic Analysis of the Proposed Amendments to the CAMU Rule in the docket for today's proposed rule for greater detail on this analysis.

2. The Impacts Estimated on Small Entities

Based on the two screening analyses described above, the Agency has concluded that today's proposed rule would not have a significant impact on a substantial number of small entities. EPA continues to be interested in the potential impacts of the proposed rule on small entities and welcomes comments on issues related to such impacts.

C. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1573.07) and a copy may be obtained from Sandy Farmer by mail at OP Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460, by email at farmer.sandy@epamail.epa.gov, or by calling (202) 260–2740. A copy may also be downloaded off the internet at *http://www.epa.gov/icr.*

The U.S. Environmental Protection Agency (EPA) is proposing to amend the regulations for CAMUs under the Resource Conservation and Recovery Act (RCRA). EPA originally established regulations applicable to CAMUs at 40 CFR part 264, Subpart S (58 FR 8658, Feb. 16, 1993). EPA is now proposing to amend these regulations to, among other things, more specifically define the eligibility of wastes to be managed in CAMUs, establish treatment requirements for wastes managed in CAMUs, and set technical standards for CAMUs. With regard to paperwork requirements, the proposed rule would add language identifying specific types of information that facilities must submit in order to gain CAMU approval at existing § 264.552(d)(1)–(3) and would require that CAMU-authorizing documents require notification for groundwater releases as necessary to protect human health and the environment at § 264.552(e)(5).

The current general requirement for information submission, at § 264.552(d), requires the owner or operator to submit sufficient information to enable the RA to designate a CAMU. EPA proposes modifying the existing information requirement under § 264.552(d) to include submission of the specific information listed under proposed § 264.552(d)(1)(3). The modifications in the proposal are additions to the existing general requirement, and add three specific information submission requirements to directly address the proposed amendments pertaining to CAMU eligibility. EPA is proposing that specific information must be submitted (unless not reasonably available): (1) On the origin of the waste and how it was subsequently managed (including a

description of the timing and circumstances surrounding the disposal and/or release to the environment) [provision § 264.552(d)(1)]; (2) whether the waste was listed or identified as hazardous at the time of disposal and/or release to the environment [provision § 264.552(d)(2)]; and (3) whether the waste was subject to the land disposal requirements of Part 268 at the time of disposal and/or release to the environment [provision § 264.552(d)(3)]. Additionally, EPA is proposing to require certain facilities to notify EPA of releases to groundwater. EPA will use this information to monitor releases and make determinations of when the releases might cause danger to human health or the environment. Facility owners or operators may use this data to keep track of releases and prevent them from reaching unacceptable levels.

EPA is proposing to amend the requirements for designating a CAMU under the authority of sections 1006, 2002(a), 3004, 3005(c), 3007 and 3008(h) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984. In particular, under Sections 2002 and 3007 of RCRA, EPA is proposing the information collection amendments to the CAMU rule described above because they are needed for the Agency to effectively designate and track the operation of CAMUs.

EPA estimates the total annual respondent burden and cost for the proposed new paperwork requirements to be approximately 844 hours and $42,572. The bottom line respondent burden over the three-year period covered by this ICR is 2,412 hours, at a total cost of approximately $127,716. The Agency burden or cost associated with this proposed rule is estimated to be approximately 129 hours and $5,016 per year. The bottom line Agency burden over the three-year period covered by this ICR is 387 hours, at a total cost of approximately $15,048. [17]

Section 3007(b) of RCRA and 40 CFR Part 2, Subpart B, which defines EPA's general policy on public disclosure of information, contain provisions for confidentiality. However, the Agency does not anticipate that businesses will assert a claim of confidentiality covering all or part of the information that will be requested pursuant to the proposed amended CAMU rule. If such a claim were asserted, EPA must and will treat the information in accordance with the regulations cited above. EPA also will assure that this information collection complies with the Privacy Act of 1974 and OMB Circular 108.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Comments are requested on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. Send comments on the ICR to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, DC 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR number in any correspondence. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after August 22, 2000, a comment to OMB is best assured of having its full effect if OMB receives it by September 21, 2000. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 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, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, 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, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. The amendments being proposed establish approval process changes and treatment/unit design requirements which are overall already in use in the baseline. Therefore, the incremental impacts, as discussed in this analysis, are not estimated to be significant. See the above analysis for an overview of the impacts estimated for the proposed amendments. Thus, the CAMU Proposed Amendments are not subject to the requirements of sections 202 and 205 of the UMRA.

Finally, EPA has determined that this proposed rule contains no regulatory requirements that might significantly or uniquely affect small governments. Under today's proposed rule, small

[17] Subsequent to conducting the Information Collection Request analysis, EPA updated the number of CAMUs used for ''permanent'' disposal and the number used for ''treatment and/or storage'' only. The ICR estimates that 31 of the 39 CAMUs in the CAMU Site Background Document were for permanent disposal; the correct number is 30 of 39. EPA will make the necessary recalculations to the ICR in the context of the final rule. EPA believes that the change in estimated burden as a result of such recalculations will be inconsequential.

governments will not implement the CAMU rule and are not generally expected to use CAMUs based on current patterns of CAMU usage seen in historical data. In addition, the CAMU rule makes no distinction between small governments and any potential regulated party.

E. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law No. 104–113, Section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

The proposed rulemaking involves technical standards (e.g., use of the TCLP test to assess compliance with treatment requirements). The Agency did not identify any potentially applicable voluntary consensus standards during its efforts to develop appropriate standards (e.g., during its discussions with Agency personnel and stakeholders who are experts in the areas addressed by this rulemaking).

EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially-applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

F. Consultation and Coordination With Indian Tribal Governments (Executive Order 13084)

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

The proposed rule would not impose substantial direct compliance costs on communities of Indian tribal governments because Indian tribal governments do not implement the CAMU rule. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

G. Protection of Children From Environmental Health Risks and Safety Risks (Executive Order 13045)

Executive Order 13045: ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This proposed rule is not subject to the Executive Order because it is not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe that this rule presents disproportionate or additional risks to children. The Agency does not believe that the risks addressed by today's amendments—i.e., the risks from on-site management of hazardous cleanup wastes—present a disproportionate risk to children. The proposed rule, among other things, sets minimum CAMU treatment and design standards designed to help ensure the protectiveness of CAMUs. EPA's analysis of these requirements shows that CAMUs are already meeting the minimum standards proposed in this rule. As amended by the proposed rule, the CAMU rule would continue to require that a decision concerning overall protectiveness of any specific CAMU be made by the Regional Administrator based on site-specific circumstances, including risks to children where appropriate. The Agency is committed to ensuring that these site-specific assessments include an assessment of risks to children where appropriate. Therefore, the Agency believes that these amendments do not present disproportionate or additional risks to children at facilities employing a CAMU.

The public is invited to submit comments on any potential children's risk implications believed to be associated with the CAMU proposed amendments.

H. Federalism (Executive Order 13132)

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

This proposed rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. First, any direct effects on the States will not be substantial, because, as described more fully above, the Agency expects the increased analytical costs for oversight agencies (i.e., EPA or authorized states) associated with the rule to be insignificant. In addition, although the proposed amendments would limit the discretion available to oversight agencies under the current CAMU rule, the Agency's record demonstrates that the CAMU decisions expected under the amendments are generally the same as those reached under the current regulatory framework. In addition, EPA does not believe the proposed rule would have a substantial direct effect on states as regulated parties, since based on past patterns of CAMU usage, state governments are not generally expected to use CAMUs.

As for the EPA-State relationship and distribution of power and responsibilities, today's proposal includes state authorization provisions that would allow the large majority of

states currently authorized for the CAMU provisions to become interim authorized for the amendments at the same time those amendments become effective. Thus, for those states, there will be no period in which the amendments are in effect federally, but not as a matter of state law. Even for those CAMU-authorized states that do not become interim authorized under this procedure, however, the Agency does not believe that any impact of the rule would be substantial. Although the Agency would implement the amendments in such states until they become authorized, EPA does not expect that this will generally result in changes to the state's individual CAMU decisions under state law, since, as described above, state CAMU decisions will likely be consistent with today's amendments. Thus, Executive Order 13132 does not apply to this rule.

The Agency notes, in addition, that prior to entering into the CAMU settlement agreement, EPA did discuss with the States potential impacts on States from amendments to the CAMU rule. During these discussions, individual States expressed concerns about potential disruption caused by the authorization process that would be required in States that are already authorized for the 1993 CAMU rule, the reduced discretion that would be available under any amendments to the CAMU rule, and the potentially more elaborate process that would be involved in making CAMU decisions.

EPA recognizes that these are valid concerns, and believes today's proposal addresses them. For example, EPA has proposed a grandfathering provision, to address the issue of disrupting existing CAMUs and those that are substantially in the approval process. The proposal will also include an approach to authorization that is intended to reduce disruption for States with authorized CAMU programs, and to expedite authorization for States that have corrective action programs but are not yet authorized for CAMU. In addition, EPA recognizes that increased process would be introduced by this proposal, but, as is described in the background section of today's preamble, has tried to find a reasonable balance by adding sufficient detail to achieve the proposal's goals while preserving site-specific flexibility that provides incentives to cleanup. Finally, the proposal is designed to incorporate the CAMU designation process into the existing decision-making process that is typically used by states and EPA for cleanups, including that used for making CAMU determinations. For example, EPA designed the principal hazardous constituent process, and certain proposed adjustment factors to reference the overall cleanup decision-making process within which the CAMU decision is made. EPA seeks comment on its approach to address these concerns.

I. Environmental Justice (Executive Order 12898)

On February 11, 1994, the President issued Executive Order 12898, entitled ''Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations,'' and an accompanying memorandum to federal department and agency heads. The Order establishes a policy to help ensure that all communities, including minority communities and low-income communities, live in a safe and healthful environment. As noted in the presidential memorandum, it is designed to focus federal attention on the human health and environmental conditions in minority communities and low-income communities to realize the goal of achieving environmental justice. The Order also is intended to foster nondiscrimination in federal programs that substantially affect human health or the environment, and to give minority communities and low-income communities greater opportunities for public participation in, and access to public information on, matters relating to human health and the environment. In general, to the greatest extent practicable and permitted by law, the Order directs federal agencies to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

Today's proposed rule is intended to amend the existing CAMU rule through, among other things, establishing a formalized process for approval of CAMUs, as well as setting national minimum treatment and unit design standards for CAMUs. The treatment and unit design standards formalize the existing expectations that site decisions be made within the overall decision making process in a manner protective of human health and the environment. The Agency's analysis shows that CAMUs are already meeting these minimum standards. Therefore, the Agency believes that these amendments, although formalizing such requirements, would not appreciably affect the risks at facilities where CAMUs are employed. This rule does not specifically address the overall remedial decision making process within which CAMUs are approved. Thus, EPA believes that this rule will not have any disproportionately high and adverse human health or environmental effects on minority populations or low-income populations. The Agency continues its commitment to ensuring that environmental justice concerns are addressed within remedial decisions in corrective action.

List of Subjects

40 CFR Part 260

Environmental protection, Administrative practice and procedures, Confidential business information, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 264

Air pollution control, Hazardous waste, Insurance, Hazardous materials transportation, Packaging and containers, Reporting and recordkeeping requirements, Security measure, Surety bonds.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indians-lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

Dated: August 7, 2000.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, 40 CFR Parts 260, 264 and 271 are proposed to be amended as follows.

PART 260—HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921–6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

2. Section 260.10 is amended by removing the definition of ''Corrective action management unit (CAMU).''

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

4. Section 264.550 is added to Subpart S as follows:

§ 264.550 Applicability of Corrective Action Management Unit (CAMU) Regulations.

(a) Except as provided in paragraph (b) of this section, CAMUs are subject to the requirements of § 264.552.

(b) CAMUs that were approved before the [effective date of final rule], or for which substantially complete applications (or equivalents) were submitted to the Agency on or before [Insert date 90 days after the publication date of this proposed rule], are subject to the requirements in § 264.551 for grandfathered CAMUs, so long as the waste, waste management activities, and design of the CAMU remain within the general scope of the CAMU as approved.

5. Section 264.552 is redesignated as § 264.551 and newly designated § 264.551 is amended by revising the title and paragraph (a) as follows:

§ 264.551 Grandfathered Corrective Action Management Units (CAMUs).

(a) To implement remedies under § 264.101 or RCRA 3008(h), or to implement remedies at a permitted facility that is not subject to § 264.101, the Regional Administrator may designate an area at the facility as a corrective action management unit under the requirements in this section. Corrective action management unit means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

(b) * * *

* * * * *

6. A new § 264.552 is added as follows:

§ 264.552 Corrective Action Management Units (CAMU).

(a) To implement remedies under § 264.101 or RCRA 3008(h), or to implement remedies at a permitted facility that is not subject to § 264.101, the Regional Administrator may designate an area at the facility as a corrective action management unit under the requirements in this section. Corrective action management unit means an area within a facility that is used only for managing CAMU-eligible wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

(1) *CAMU-eligible waste means:*

(i) All solid and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments) and debris that contain listed hazardous wastes or that themselves exhibit a hazardous characteristic and are managed for implementing cleanup. As-generated wastes (either hazardous or non-hazardous) from ongoing industrial operations at a site are not CAMU-eligible wastes.

(ii) Wastes that would otherwise meet the description in paragraph (a)(1)(i) of this section are not ''CAMU-Eligible Wastes'' where:

(A) The wastes are hazardous wastes found during cleanup in intact or substantially intact containers, tanks, or other non-land-based units, unless the wastes are first placed in the tanks, containers or non-land-based units as part of cleanup, or the containers are excavated during the course of cleanup; or

(B) The Regional Administrator exercises the discretion in paragraph (a)(2) of this section to prohibit the wastes from management in a CAMU.

(iii) Notwithstanding paragraph (a)(1)(i) of this section, where appropriate, as-generated non-hazardous waste may be placed in a CAMU where such waste is being used to facilitate treatment or the performance of the CAMU.

(2) The Regional Administrator may prohibit, where appropriate, the placement of waste in a CAMU where the Regional Administrator has or receives information that such wastes have not been managed in compliance with applicable land disposal treatment standards of part 268 of this chapter, or applicable unit design requirements of this part, or applicable unit design requirements of part 265 of this chapter, or that non-compliance with other applicable requirements of this chapter likely contributed to the release of the waste.

(3) Prohibition against placing liquids in CAMUs.

(i) The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU is prohibited except where placement of such wastes facilitates the remedy selected for the waste.

(ii) The requirements in § 264.314(d) for placement of containers holding free liquids in landfills apply to placement in a CAMU except where placement facilitates the remedy selected for the waste.

(iii) The placement of any liquid which is not a hazardous waste in a CAMU is prohibited unless such placement facilitates the remedy selected for the waste or a demonstration is made pursuant to § 264.314(f).

(iv) The absence or presence of free liquids in either a containerized or a bulk waste must be determined in accordance with § 264.314(c). Sorbents used to treat free liquids in CAMUs must meet the requirements of § 264.314(e).

(4) Placement of CAMU-eligible wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

(5) Consolidation or placement of CAMU-eligible wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

(b)(1) The Regional Administrator may designate a regulated unit (as defined in § 264.90(a)(2)) as a CAMU, or may incorporate a regulated unit into a CAMU, if:

(i) The regulated unit is closed or closing, meaning it has begun the closure process under § 264.113 or § 265.113; and

(ii) Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

(2) The subpart F, G, and H requirements and the unit-specific requirements of part 264 or 265 that applied to the regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

(c) The Regional Administrator shall designate a CAMU that will be used for storage and/or treatment only in accordance with paragraph (f) of this section. The Regional Administrator shall designate all other CAMUs in accordance with the following:

(1) The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

(2) Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

(3) The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing CAMU-eligible waste is more protective than management of such wastes at contaminated areas of the facility;

(4) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;

(5) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;

(6) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and

(7) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.

(d) The owner/operator shall provide sufficient information to enable the Regional Administrator to designate a CAMU in accordance with the criteria in § 264.552. This must include, unless not reasonably available, information on:

(1) The origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal and/or release);

(2) Whether the waste was listed or identified as hazardous at the time of disposal and/or release; and

(3) Whether the waste was subject to the land disposal requirements of part 268 of this chapter at the time of disposal and/or release.

(e) The Regional Administrator shall specify, in the permit or order, requirements for CAMUs to include the following:

(1) The areal configuration of the CAMU.

(2) Except as provided in paragraph (g) of this section, requirements for CAMU-eligible waste management to include the specification of applicable design, operation, treatment and closure requirements.

(3) Minimum Design Requirements: CAMUs, except as provided in paragraph (f) of this section, into which wastes are placed must be designed in accordance with the following:

(i) Unless the Regional Administrator approves alternate requirements under paragraph (e)(3)(ii) of this section, CAMUs that consist of new, replacement, or laterally expanded units must include a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner. For purposes of this section, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10–7 cm/sec. FML components consisting of high density polyethylene (HDPE) must be at least 60 mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component;

(ii) Alternate requirements. The Regional Administrator may approve alternate requirements if:

(A) The Regional Administrator finds that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as the liner and leachate collection systems in paragraph (e)(3)(i) of this section; or,

(B) The CAMU is to be established in an area with existing significant levels of contamination, and the Regional Administrator finds that an alternative design, including a design that does not include a liner, would prevent migration from the unit that would exceed long-term remedial goals.

(4) Minimum treatment requirements. Unless the wastes will be placed in a CAMU for storage and/or treatment only in accordance with paragraph (f) of this section, CAMU-eligible wastes that, absent this section, would be subject to the treatment requirements of part 268 of this chapter, and that the Regional Administrator determines contain principal hazardous constituents must be treated to the standards specified in paragraph (e)(4)(iii) of this chapter.

(i) Principal hazardous constituents are those constituents that the Regional Administrator determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

(A) In general, the Regional Administrator will designate as principal hazardous constituents:

(1) Carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above 10^{-3}; and,

(2) Non-carcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose.

(B) The Regional Administrator will also designate constituents as principal hazardous constituents, where appropriate, based on risks posed by the potential migration of constituents in wastes to groundwater, considering such factors as constituent concentrations, and fate and transport characteristics under site conditions.

(C) The Regional Administrator may also designate other constituents as principal hazardous constituents that the Regional Administrator determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

(ii) In determining which constituents are ''principal hazardous constituents,'' the Regional Administrator must consider all constituents which, absent this section, would be subject to the treatment requirements in part 268 of this chapter.

(iii) Waste that the Regional Administrator determines contains principal hazardous constituents must meet treatment standards determined in accordance with paragraph (e)(4)(iv) or (e)(4)(v) of this section:

(iv) Treatment standards for wastes placed in CAMUs.

(A) For non-metals, treatment must achieve 90 percent reduction in total principal hazardous constituent concentrations, except as provided by paragraph (e)(4)(iv)(C) of this section.

(B) For metals, treatment must achieve 90 percent reduction in principal hazardous constituent concentrations as measured in leachate from the treated waste or media (tested according to the TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by paragraph (e)(4)(iv)(C) of this section.

(C) When treatment of any principal hazardous constituent to a 90 percent reduction standard would result in a concentration less than 10 times the Universal Treatment Standard for that constituent, treatment to achieve constituent concentrations less than 10 times the Universal Treatment Standard is not required. Universal Treatment Standards are identified in § 268.48 Table UTS.

(D) For waste exhibiting the hazardous characteristic of ignitability, corrosivity or reactivity, the waste must also be treated to eliminate these characteristics.

(E) For debris, the debris must be treated in accordance with § 268.45, or by methods or to levels established under paragraph (e)(4)(iv)(A) through (D) or (e)(4)(v) of this section, whichever the Regional Administrator determines is appropriate.

(v) Adjusted standards. The Regional Administrator may adjust the treatment level or method in (e)(4)(iv) of this section to a higher or lower level, based on one or more of the following factors, as appropriate. The adjusted level or

method must be protective of human health and the environment:

(A) The technical impracticability of treatment to the levels or by the methods in (e)(4)(iv) of this section;

(B) The levels or methods in (e)(4)(iv) of this section would result in concentrations of hazardous constituents that are significantly above or below cleanup standards applicable to the site (established either site-specifically, or promulgated under state or federal law);

(C) The views of the affected local community on the treatment levels or methods in (e)(4)(iv) of this section as applied at the site, and, for treatment levels, the treatment methods necessary to achieve these levels;

(D) The short-term risks presented by the on-site treatment method necessary to achieve the levels or treatment methods in (e)(4)(iv) of this section;

(E) The long-term protection offered by the engineering design of the CAMU and related engineering controls:

(1) Where the treatment standards in paragraph (e)(4)(iv) of this section are substantially met and the principal hazardous constituents in the waste or residuals are of very low mobility; or

(2) Where cost-effective treatment has been used, or where, after review of appropriate treatment technologies, the Regional Administrator determines that such treatment is not reasonably available, and:

(i) The CAMU meets the Subtitle C liner and leachate collection requirements for new land disposal units at § 264.301(c) and (d), or

(ii) The principal hazardous constituents in the treated wastes are of very low mobility, or,

(iii) Where wastes have not been treated and the principal hazardous constituents in the wastes are of very low mobility, and either the CAMU meets or exceeds the liner standards for new, replacement, or laterally expanded CAMUs in paragraphs (e)(3)(i) and (ii) of this section, or the CAMU provides substantially equivalent or greater protection.

(vi) The treatment required by the treatment standards must be completed prior to, or within a reasonable time after, placement in the CAMU.

(vii) For the purpose of determining whether wastes placed in CAMUs have met site-specific treatment standards, the Regional Administrator may, as appropriate, specify a subset of the principal hazardous constituents in the waste as analytical surrogates for determining whether treatment standards have been met for other principal hazardous constituents. This specification will be based on the degree of difficulty of treatment and analysis of constituents with similar treatment properties.

(5) Except as provided in paragraph (f) of this section, requirements for ground water monitoring and corrective action that are sufficient to:

(i) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU; and

(ii) Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU; and

(iii) Require notification to the Regional Administrator and corrective action as necessary to protect human health and the environment for releases to groundwater from the CAMU.

(6) Except as provided in paragraph (f) of this section, closure and post-closure requirements:

(i) Closure of corrective action management units shall:

(A) Minimize the need for further maintenance; and

(B) Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

(ii) Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the Regional Administrator for a given CAMU:

(A) Requirements for excavation, removal, treatment or containment of wastes; and

(B) Requirements for removal and decontamination of equipment, devices, and structures used in CAMU-eligible waste management activities within the CAMU.

(iii) In establishing specific closure requirements for CAMUs under paragraph (e) of this section, the Regional Administrator shall consider the following factors:

(A) CAMU characteristics;

(B) Volume of wastes which remain in place after closure;

(C) Potential for releases from the CAMU;

(D) Physical and chemical characteristics of the waste;

(E) Hydrological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and

(F) Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.

(iv) Cap requirements.

(A) At final closure of the CAMU, for areas in which wastes will remain after closure of the CAMU, the owner or operator must cover the CAMU with a final cover designed and constructed to meet the following performance criteria, except as provided in paragraph (e)(6)(iv)(B) of this section:

(1) Provide long-term minimization of migration of liquids through the closed unit;

(2) Function with minimum maintenance;

(3) Promote drainage and minimize erosion or abrasion of the cover;

(4) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(B) The Regional Administrator may determine that modifications to paragraph (e)(6)(iv)(A) of this section are needed to facilitate treatment or the performance of the CAMU (e.g., to promote biodegradation).

(v) Post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.

(f) CAMUs used for storage and/or treatment only are CAMUs in which wastes will not remain after closure. Such CAMUs must be designated in accordance with all requirements of this section, except as follows. CAMUs used for storage/and or treatment only:

(1) Are not subject to the treatment requirements under paragraph (e)(4) of this section;

(2) Must have requirements specified in the permit or order in accordance with:

(i) The staging pile performance criteria at §§ 264.554(d)(1)(i) through (ii) and (d)(2) in lieu of the CAMU designation criteria at paragraph (c) of this section;

(ii) The staging pile standards for management of ignitable, reactive or incompatible wastes at § 264.554(e) through (f);

(iii) The staging pile standards for closure at § 264.554(j) through (k), in lieu of the CAMU closure standards at paragraph (e)(6) of this section;

(3) That will operate in accordance with the time limits established in the staging pile regulations at

§ 264.554(d)(1)(iii), (h), and (i), are not subject to the groundwater monitoring and corrective action requirements of paragraph (e)(5) of this section and the minimum design requirements for liners of paragraph (e)(3) of this section;

(4) That will operate beyond the period permitted in the staging pile regulations at § 264.554(d)(1)(iii), (h), and (i), must have a time limit established by the Regional Administrator that is no longer than necessary to achieve a timely remedy selected for the waste.

(g) CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the requirements for liners at paragraph (e)(3)(i) of this section, caps at paragraph (e)(6)(iv) of this section, groundwater monitoring requirements at paragraph (e)(5) of this section or the design standards at paragraph (f) of this section for treatment and/or storage-only CAMUs.

(h) The Regional Administrator shall provide public notice and a reasonable opportunity for public comment before designating a CAMU. Such notice shall include the rationale for any proposed adjustments under paragraph (e)(4)(iii)(B) of this section to the treatment standards in paragraph (e)(4)(iv) of this section.

(i) Notwithstanding any other provision of this section, the Regional Administrator may impose additional requirements as necessary to protect human health and the environment.

(j) Incorporation of a CAMU into an existing permit must be approved by the Regional Administrator according to the procedures for Agency-initiated permit modifications under § 270.41 of this chapter, or according to the permit modification procedures of § 270.42 of this chapter.

(k) The designation of a CAMU does not change EPA's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

7. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 9605, 6912(2), and 6926.

8. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by promulgation date in the **Federal Register**, to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
* * *	*	* *	*
[*date of publication of final rule in the Federal Register (FR)*]	Corrective Action Management Unit Standards Amendments.	[*FR page numbers*]	[*date of 90 days from date of publication of final rule*].

* * * * *

9. Section 271.24 is amended by revising paragraph (c) to read as follows:

§ 271.24 Interim authorization under section 3006(g) of RCRA.

* * * * *

(c) Interim authorization pursuant to this section expires on January 1, 2003, except that interim authorization for the revised Corrective Action Management Unit rule promulgated on [date of publication of final rule in the **Federal Register** (FR) and FR page numbers] expires on [date of 3 years from the effective date of the final rule].

10. A new § 271.27 is added at the end of subpart A to read as follows:

§ 271.27 Interim authorization-by-rule for the revised Corrective Action Management Unit rule.

(a) States shall have interim authorization pursuant to section 3006(g) of RCRA for the revised Corrective Action Management Unit rule if:

(1) The State has been granted final authorization pursuant to section 3006(b) of RCRA for the provisions for Corrective Action Management Units in § 264.552 of this chapter;

(2) The State does not have an audit privilege or immunity law that raises unresolved concerns about adequate enforcement under section 3006(b) of RCRA; and

(3) The State notifies the Administrator by [date of 60 days from date of publication of final rule] that the State intends to and is able to use the revised Corrective Action Management Unit Standards rule as guidance.

(b) Interim authorization pursuant to this section expires on [date of 3 years from the effective date of the final rule].

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