

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Parts 148, 268, and 271**

[EPA530-Z-95-011; FRL-5280-6]

RIN 2050 AE05

Land Disposal Restrictions—Phase IV: Issues Associated With Clean Water Act Treatment Equivalency, and Treatment Standards for Wood Preserving Wastes and Toxicity Characteristic Metal Wastes**AGENCY:** Environmental Protection Agency (EPA, the Agency).**ACTION:** Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is addressing issues arising from the September 25, 1992 decision of the U.S. Court of Appeals in *Chemical Waste Management v. EPA*, 976 F. 2d (D.C. Cir. 1992) on the equivalency of treatment in wastewater treatment systems regulated under the Clean Water Act (CWA) to treatment required by the Resource Conservation and Recovery Act (RCRA). Specifically, the Agency is considering whether to regulate potential releases, to air or ground water, of hazardous constituents from surface impoundments treating wastes that were hazardous when generated, but have been diluted to render them nonhazardous. Such wastes are prohibited from land disposal unless adequately pretreated.

In addition, EPA is proposing treatment standards under the land disposal restrictions (LDR) program for wastes from wood preserving operations and for Toxicity Characteristic (TC) metal wastes. These treatment standards, when finalized, must be met in order to land dispose these hazardous wastes.

These potential requirements and treatment standards must be proposed by August 11, 1995 to satisfy the terms of a proposed consent decree and a settlement agreement.

Today's proposal also includes simplified land disposal requirements, streamlined state authorization procedures, a proposal not to ban "nonamenable" wastes from treatment impoundments, and discussion of a possible exclusion from regulations for certain recycled wastes from wood preserving operations.

DATES: Comments on this proposed rule must be submitted by November 20, 1995.

ADDRESSES: The public must send an original and two copies of their comments to Docket Number F-95-PH4P-FFFFF, located in the EPA RCRA

Docket, U.S. Environmental Protection Agency, room 2616, 401 M Street, SW., Washington, DC 20460. (Also see the section under **SUPPLEMENTARY INFORMATION:** regarding the paperless office effort for submitting public comments.) The RCRA Docket is open from 9:00 am to 4:00 pm Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost \$0.15 per page. The mailing address is EPA RCRA Docket (5305), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424-9346 (toll-free) or (703) 412-9810. For specific information, contact the Waste Treatment Branch (5302W), Office of Solid Waste (OSW), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; phone (703) 308-8434. For technical information regarding standards for Clean Water Act (CWA) systems, ask for Mary Cunningham or Elaine Eby; for technical information on the treatment standards for wood preserving wastes, ask for Jose Labiosa; for TC metal wastes, ask for Anita Cummings. For policy questions, ask for Sue Slotnick. For questions on the clean-up of the Part 268 regulations, ask for Douglas Heimlich. For information on the capacity analyses, ask for Pan Lee of the Capacity Programs Branch (OSW), phone (703) 308-8440. For information on the regulatory impact analyses, contact Linda Martin of the Regulatory Analysis Branch (OSW), phone (202) 260-0062.

SUPPLEMENTARY INFORMATION:**Paperless Office Effort**

EPA is asking prospective commenters to voluntarily submit one additional copy of their comments on labeled personal computer diskettes in ASCII (TEXT) format or a word processing format that can be converted to ASCII (TEXT). It is essential to specify on the disk label the word processing software and version/edition as well as the commenter's name. This will allow EPA to convert the comments into one of the word processing formats utilized by the Agency. Please use mailing envelopes designed to physically protect the submitted diskettes. EPA emphasizes that submission of comments on diskettes is not mandatory, nor will it result in any advantage or disadvantage to any

commenter. Rather, EPA is experimenting with this procedure as an attempt to expedite our internal review and response to comments. This expedited procedure is in conjunction with the Agency "Paperless Office" campaign. For further information on the submission of diskettes, contact the Waste Treatment Branch at the phone number listed above.

Glossary of Acronyms and Terms

BDAT—Best Demonstrated Available Technology
 CAA—Clean Air Act
 CWA—Clean Water Act
 EP—Extraction Procedure
 HSWA—Hazardous and Solid Waste Amendments (to RCRA)
 ICR—ignitable, corrosive, and reactive wastes, *or*, Information Collection Request (*in section XI.D.*)
 ICRT—ignitable, corrosive, reactive, and toxic characteristic wastes
 ICT—ignitable, corrosive, and toxic characteristic wastes
 LDR—Land Disposal Restrictions
 MCL—Maximum Contaminant Level
 MSW—Municipal Solid Waste
 MSWLF—Municipal Solid Waste Landfill
 NESHAP—National Emission Standards for Hazardous Air Pollutants
 NPDES—National Pollutant Discharge Elimination System
 OCPSPF—Organic Chemicals, Plastics, and Synthetic Fibers industry
 ppmw—parts per million by weight
 RCRA—Resource Conservation and Recovery Act
 TC—Toxicity Characteristic
 TCLP—Toxicity Characteristic Leaching Procedure
 UHC—underlying hazardous constituent
 UTS—Universal Treatment Standards
 VOCs—volatile organic compounds

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I. Options to Ensure That Underlying Hazardous Constituents in Decharacterized Wastes are Substantially Treated Rather Than Released Via Leaks, Sludges, and Air Emissions from Surface Impoundments

A. Summary

EPA's recently proposed Phase III LDR rule (60 FR 11702, March 2, 1995), addressed wastewater discharges involving characteristic wastes that are deactivated through dilution and treated in surface impoundments. The Phase III rule proposed treatment standards that can be met at or prior to the point of discharge, (also referred to as "end-of-pipe"). Today's proposed rule addresses whether such treatment in surface impoundments results in cross-media releases, via leakage, air emissions, or disposal of untreated sludges, that can be so excessive that the impoundment effectively functions as a disposal unit.

The Agency is essentially examining standards for air emissions, leaks to ground water, sludges, and wastewater discharges (proposed in Phase III) at the same time. This provides an opportunity to comprehensively examine all the risks, applicable treatment technologies, benefits, costs, and existing regulatory controls associated with addressing decharacterized wastes that are treated in surface impoundments. EPA received public comments to the Phase III rule, but because of scheduling constraints, was not able to fully review them before issuing this notice. Decisions on controlling releases will be made after careful consideration of public comments on both proposals. The Agency may choose either to not promulgate LDR requirements for these releases, or to set management standards when warranted by excessive cross-media transfer of hazardous constituents. A third option is to require that decharacterized wastes be treated (not merely diluted) to meet Universal Treatment Standards (UTS) before entry into surface impoundments. EPA is not in favor of the third option, as it is likely to disrupt treatment needed for compliance with the Clean Water Act (CWA) limitations and standards, and impose high costs without targeting risks adequately.

B. Background

In the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), Congress prohibited land disposal of hazardous waste unless the waste meets treatment standards established by EPA. The statute requires that these treatment standards

substantially diminish the toxicity or mobility of hazardous waste such that short- and long-term threats to human health and the environment are minimized. RCRA section 3004(m). In response, EPA has developed a series of rulemakings under the Land Disposal Restrictions (LDR) Program setting forth standards for treatment of hazardous waste.

The Third Third rule (55 FR 22520, June 1, 1990) contained treatment standards and prohibitions for hazardous wastes that exhibited one or more of the following characteristics: Ignitability, corrosivity, reactivity, or Extraction Procedure (EP) toxicity (40 CFR 261.21-261.24). The Agency also established a "deactivation" treatment standard for ignitable, corrosive, and reactive (ICR) wastes. Under this standard, ICR wastes could be diluted until they no longer exhibited the hazardous characteristic (i.e., the waste was "deactivated"). Once deactivated, these wastes could be placed in land disposal units without further treatment, unless the Agency specifically required that hazardous constituents in the waste be treated. The Agency further established that prohibitions on dilution did not apply to most characteristic wastes that are decharacterized by dilution and then managed in disposal units subject to regulation under the CWA or the Safe Drinking Water Act.

These portions of the rule were partially vacated and remanded in *Chemical Waste Management v. EPA*, 976 F. 2d 2, cert. denied 113 S.Ct. 1961 (1992). In *CWM v. EPA*, the court held that wastes decharacterized by dilution may be placed in a nonhazardous surface impoundment or a nonhazardous injection well only if the toxic constituents in that waste are treated to the same extent as they would be under the treatment standards mandated by RCRA section 3004(m)(1). 976 F. 2d at 23. In other words, treatment standards must result in the treatment of all toxic constituents (i.e., the underlying hazardous constituents, or UHCs) to minimize threats to human health and the environment. Treatment that only removes the hazardous characteristic does not necessarily suffice.

The principal holdings of *CWM v. EPA* with respect to characteristic wastes were that: (1) EPA may require treatment under RCRA section 3004(m) to more stringent levels than those at which wastes are identified as hazardous, 976 F. 2d at 12-14; (2) Section 3004(m) requires that treatment standards address both short-term and long-term potential threats posed by

hazardous wastes, as well as removal of the characteristic property, *id.* at 16, 17, 23; as a result, dilution is permissible as an exclusive method of treatment only for those characteristic wastes that do not contain UHCs "in sufficient concentrations to pose a threat to human health or the environment" (i.e., the minimize threat level in section 3004(m)), *id.* at 16; and, (3) situations where characteristic hazardous wastes are diluted, no longer exhibit a characteristic(s), and are then managed in centralized wastewater management land disposal units (i.e., subtitle D surface impoundments or injection wells) are legal only if it can be demonstrated that hazardous constituents are reduced, destroyed, or immobilized to the same extent as they would be pursuant to otherwise-applicable RCRA treatment standards, *id.* at 7. EPA refers to this as the "equivalency determination" and it is at the heart of the discussion of potential cross-media transfers in today's rule. The court further held that the deactivation treatment standard for ignitable and corrosive wastes (which allowed the hazardous characteristic to be removed by any type of treatment, including dilution) did not fully comport with RCRA section 3004(m). This was because the deactivation treatment standard could be achieved by dilution, and section 3004(m) "requires that any hazardous waste be treated in such a way that hazardous constituents be removed from the waste before it enters the environment." 976 F. 2d at 24. The court thus remanded the rules dealing with centralized wastewater management involving land disposal.

EPA addressed one portion of the equivalence issue when it proposed the Phase III LDR rule (60 FR 11702, March 2, 1995). That rule proposes, among other things, treatment standards for the end-of-pipe discharges from surface impoundments to surface waters or POTWs. For further information on the court decision and the Agency's responses, see the January 19, 1993, Notice of Data Availability (58 FR 4972) and Supplementary Information Report; the LDR emergency Interim Final rule (58 FR 29860, May 24, 1993); the LDR Phase II rule (59 FR 47982, September 19, 1994); and the LDR Phase III proposed rule (60 FR 11702, March 2, 1995).

The Agency entered into a settlement agreement setting out a schedule for fulfilling the court's mandate. The settlement agreement reads:

EPA agrees to sign a proposed rulemaking on the issue of equivalency of treatment in a CWA system that uses surface impoundments. . . . EPA agrees to describe

in detail in that notice of proposed rulemaking (but not necessarily recommend or endorse) the following option: regulations limiting release from surface impoundments used in CWA treatment systems of hazardous constituents from ICT wastes managed in such impoundments, where the release is due to volatilization or leakage, and treatment standards under section 3004(m) for hazardous constituents from ICT wastes in impoundment sludges. After considering any public comments received, EPA agrees to sign a notice of final rulemaking taking final action on the issue and option * * *

Therefore, the Agency is required to address these issues at this time although there may have been higher environmental priorities if EPA had sole discretion to order its agenda.

The central legal and policy issue addressed in this proposal is if and when releases of hazardous constituents from surface impoundments which are part of a treatment train for decharacterized wastes are so extensive as to effectively invalidate the treatment process as a means of LDR compliance. Put another way, the D.C. Circuit intended to allow continued use of treatment surface impoundments to treat decharacterized wastes, provided the extent of treatment is equivalent to usual RCRA treatment. If there are releases of hazardous constituents to the environment before treatment concludes, in the form of air releases, leaks to ground water, or deposition in sludges, has permanent disposal occurred so as to invalidate the treatment process?

EPA's view is that, at the least, something more than the bare release of a hazardous constituent is needed to trigger this invalidation. The court did not explicitly state that its equivalence test, or any other part of the opinion, necessitated control of all hazardous constituent releases from surface impoundments. For example, one of the court's formulations of its holding is that "treatment of solid wastes in a CWA surface impoundment must meet RCRA requirements prior to ultimate discharge into waters of the United States or publicly owned treatment works. . . ." 976 F. 2d at 20. The focus here is on the wastewaters being treated, and the amount of hazardous constituents removed from those wastewaters, not other types of wastes (like sludges) or other types of releases. See also *id.* at 7, 20 (focus on treatment of waste "streams", i.e. liquids in an impoundment); 23 n. 8 (reduction of mass loadings of hazardous constituents of wastestream entering and exiting an impoundment); 24 (court indicates that decharacterized wastes are not held permanently in impoundments, which

is true of wastewaters but not for all wastewater treatment sludges).

The court likewise did not see that hazardous constituents in deposited sludges must be treated. The court in fact did not speak to the principle stated by EPA in the Third Third rule that generation of a new treatability group is considered to be a new point of generation and thus a new point for determining whether a waste is prohibited. 55 FR at 22661-662. Under this principle, unchallenged in the litigation, wastewater treatment sludges not exhibiting a characteristic are not prohibited wastes, notwithstanding that they may derive from prohibited wastewaters.

Perhaps more fundamentally, the court clearly did not intend to require that treatment standards be met invariably by treatment preceding impoundment-based management systems: "RCRA requires some accommodation with [the] Clean Water Act". 976 F. 2d at 20; see also *id.* at 23, indicating that to some degree RCRA need not mandate wholesale disruption of existing wastewater treatment impoundments, providing the CWA treatment system really achieves treatment equivalent to RCRA's: "In other words, what leaves a CWA treatment facility can be no more toxic than if the wastestreams were individually treated pursuant to the RCRA treatment standards." A draconian reading that any releases of hazardous constituents from a treatment impoundment effectively invalidate that impoundment's treatment operations could thwart the court's holding that such treatment is to be allowed provided equivalent treatment occurs.

There are suggestions in the opinion, however, that at some point the LDR standard is not satisfied if the magnitude of hazardous constituent releases is sufficiently great. The whole thrust of the opinion is to assure that RCRA treatment requirements are not thwarted by cross-media transfers of untreated hazardous constituents, whether by dilution or by escape from treatment units. *Id.* at 22, 24, 29-30; see also *id.* at 17, 18 vacating treatment standards for ignitable and reactive wastes because the Agency had done nothing to address the risk of excessive volatilization or reactivity during the treatment process. The court also distinguished a number of times between temporary placement of diluted wastes in impoundments for treatment and permanent disposal in land disposal units, stating that only the temporary placement represents a satisfactory accommodation between RCRA and the CWA. *Id.* at 24, 25. To the

extent hazardous constituents leak or volatilize from impoundments, or from inadequately treated sludges, it can be argued that permanent disposal of untreated hazardous constituents is occurring, although, since no treatment unit is absolutely release-free (there are certainly releases of hazardous constituents from combustion units, for example), the more fruitful inquiry is the extent of the release.

Putting this together, EPA initially believes the best reading of this part of the opinion to be to distinguish between impoundments performing essentially as treatment units from those that are also operating as permanent disposal units due to the extent of cross-media transfers of untreated hazardous constituents. The portion of the opinion vacating standards for ignitable and reactive wastes supports such a reading, since the court required the Agency to find "that the risk of * * * emissions * * * is minimal, or * * * require actions to minimize that risk." 976 F. 2d at 17, thus focusing on the extent of release from the treatment unit, not just the fact that a release occurred. Under this reading, the Agency could evaluate whether the risk from the various types of releases is great enough to warrant control. A finding that there is insufficient risk would mean that the impoundment is not engaging in a type of cross-media transfer of untreated hazardous constituents that invalidates its treatment function, and therefore that decharacterized wastes can be treated in the impoundment to effect the necessary accommodation between RCRA and the CWA.

A second pervasive distinction in the opinion is between treatment units (including treatment surface impoundments) and permanent disposal units, accommodation to allow centralized wastewater management being allowed for the former but not the latter. See, e.g., 976 F. 2d at 24, 25. There are some potential differentiations among types of surface impoundments along these lines. A common division of wastewater treatment is into primary, secondary, and tertiary treatment. Primary treatment involves removal of conventional pollutants (e.g., oil and grease, total suspended solids) or equalization. Secondary treatment involves aggressive treatment steps to remove or destroy hazardous constituents, examples being biological treatment for organics, or chemical precipitation for metals. Tertiary treatment involves polishing effluent before final discharge. Impoundments engaged in primary treatment most clearly resemble hazardous constituent

disposal units because such units treat hazardous constituents only incidentally. Secondary and tertiary impoundments, on the other hand, do engage in significant treatment of hazardous constituents. Thus, possible Phase IV controls would logically be directed at primary impoundments, the type of wastewater management impoundment most resembling permanent disposal due to the lesser degree of treatment occurring in the unit.

It is also possible to argue that any leak to ground water or deposition of hazardous constituents in sludge at levels exceeding the UTS (or some comparable release of hazardous constituents to air) renders treatment across a wastewater treatment system not equivalent. EPA does not view this reading as compelled. There is no such explicit language in the opinion. As already stated, such a reading also would likely destroy the very accommodation between RCRA and the CWA the court deemed necessary. Nor would such a reading make policy sense if releases from treatment surface impoundments remain insignificant, and the treatment system is in fact achieving the same mass reductions of hazardous constituents, through destruction and removal rather than through release, as conventional RCRA treatment (see 976 F. 2d at 23 n. 8).

EPA's present, preferred reading of the opinion is consequently to establish the parameters which distinguish permanent land disposal impoundments from those performing the type of treatment to be accommodated under the court's opinion. These parameters can be defined by limiting the extent of hazardous constituent releases to air, ground water and through sludges to levels that do not pose significant risk. In addition, primary treatment impoundments are the most natural target for these controls.

C. Applicability of Potential Approaches to "Industrial D" Management Units

Today's options to address surface impoundment releases specifically apply to Subtitle D (nonhazardous) surface impoundments that receive decharacterized wastes. Subtitle D surface impoundments that do not manage decharacterized wastes are not affected. The options in today's proposal do not necessarily set a precedent for any future regulations concerning non-hazardous industrial wastes. The Agency, in partnership with the States, is investigating the possibility of developing voluntary standards for the safe management of non-hazardous industrial wastes.

D. Potentially Affected Industries

Based on an analysis of available information, the Agency estimates that 300 facilities are managing, in CWA treatment systems, decharacterized wastes containing hazardous constituents above UTS. (Hereafter, the use of the term "CWA treatment systems" includes CWA-equivalent systems as defined by 40 CFR 268.37, and other nonhazardous waste surface impoundments.) Wastewater treatment in surface impoundments involves three basic functions:

- Equalization/settling (known as primary or prebiological treatment);
- Biological treatment (known as secondary treatment); and
- Postbiological settling/polishing (known as tertiary or postbiological treatment).

Equalization/settling ponds settle solids out of the wastewaters and equalize concentrations to subsequent treatment units. Being the first units in the system to receive the wastewaters, they receive the highest loadings of contaminants.

Biological treatment units function primarily to break down or remove organic compounds in the wastewater. At this point in the treatment process, the concentrations of organics in the surface impoundment are greatly reduced, and therefore, the risks from leaks and sludges are considerably lower in these units. Part of the concentration reduction, however, is due to volatilization, and air emissions can be significant from such units.

Postbiological treatment units will receive contaminants at significantly reduced concentrations. As a result, lower concentrations of hazardous constituents can be expected in the air emissions, leaks, and sludges, and therefore resultant risks are also lower.

E. Results of Sampling and Risk Assessment

1. Sampling Data

The Agency reviewed available information on air emissions, leaks, and sludges. These data were collected for the development of effluent guidelines under the CWA. They cover industries that typically treat wastewater in biological treatment systems that incorporate surface impoundments. During the last two years, the Agency was informed by representatives of the regulated industry that they would provide EPA with more current and complete data characterizing wastewaters in surface impoundments receiving decharacterized waste. At the time of publication of this proposal, EPA had not received any such data.

Information available to the Agency indicates that decharacterized wastestreams containing UHCs may leak out of surface impoundments at levels of concern. These data also indicate that there may be a significant number of wastestreams that could exceed the regulatory threshold for total volatile organics. In addition, the Agency conducted a review of the chemical concentrations of UHCs in decharacterized wastes (based on the effluent guidelines data) and the concentrations of constituents of concern in various RCRA F and K wastewaters. Based on this analysis, the Agency found that in many instances that decharacterized wastestreams have similar hazardous constituents present and at similar concentrations as listed hazardous wastestreams. Estimated sludge concentrations based on industrial wastewater treatment system data indicate that surface impoundments handling decharacterized wastes are likely to generate sludge that contain UTS constituents in excess of the treatment standards. EPA solicits additional data, particularly constituent concentrations from actual sampling of wastewaters in surface impoundments receiving decharacterized wastes. A detailed discussion of the data sources, analyses, and specific examples of releases above UTS levels supporting this proposal can be found in the document entitled, "Technical Support Document—Options for Management Standards for Leaks, Sludges, and Air Emissions From Surface Impoundments Accepting Decharacterized Wastes" which is located in the RCRA docket.

2. Risks

Although the wastes affected by the court opinion and the equivalence options in this section of the preamble are not hazardous wastes, they are likely to contain some of the same hazardous constituents, possibly even at the same levels, as are found in listed and characteristic wastes. The hazardous constituents in listed and characteristic wastes must be treated to meet UTS before land disposal.

EPA conducted a screening level risk assessment that did not take into account site-specific hydrogeologic conditions or relative proximity of drinking water wells to surface impoundments. Using the sampling data described above, EPA estimated baseline (current) risks from releases from leaks and air emissions, as well as ground water contamination from sludge disposal. Samples were taken at: raw wastewater, equalization ponds, influent to pre-bio ponds, pre-bio

ponds, effluent from pre-bio ponds, influent to biological ponds, effluent from biological ponds, effluent from post-bio ponds, influent to wastewater system, and effluent from wastewater system. (The terms "pond" and "surface impoundment" are used interchangeably in this preamble.) Using Office of Water Effluent Guidelines data, EPA calculated central tendency and high-end baseline risks from leaks and sludges for wastewater treatment systems in five industries: Pharmaceuticals; Pulp and Paper; Pesticides; Metal Products and Machinery; and Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF). Using Generator Survey point-of-generation data, EPA calculated central tendency and high-end baseline risks from leaks and sludges for wastewater treatment systems from Inorganic Chemicals; and, Electronic and Electrical Components. The Agency used standard exposure assumptions of 1.4 liters/day ingestion, and a 9-year exposure period for 350 days per year. Cancer risks are summed across constituents.

Following are the highest risks EPA estimated. These risks are from pre-biological surface impoundments unless otherwise noted. (The samples from influent to a biological pond are assumed to be measures of constituent concentrations of wastewaters in pre-bio ponds rather than bio ponds.) For the central tendency analysis of risks from leaks, EPA found potentially significant health risks in the Pharmaceuticals, OCPSF, Inorganic Chemicals, and Electronic and Electrical Components industries. In the Pharmaceuticals industry, one raw wastewater sample out of 11 and one biological pond influent sample out of 7 may pose potentially significant cancer health risk exceeding the 10^{-5} cancer risk threshold; methylene chloride and acrylonitrile, respectively, are the constituents of concern. In the OCPSF industry, EPA found three raw wastewater samples out of 51 indicate cancer risks in excess of a 10^{-5} individual lifetime cancer risk level. Acrylonitrile is the most prevalent carcinogenic constituent in amounts above levels of concern. Also in the OCPSF industry, nine samples at the biological pond influent out of 34 at the biological pond influent indicate cancer risks in excess of a 10^{-5} level, of which six samples indicate cancer risks in excess of 10^{-4} . In the Inorganic Chemical industry, one point of generation sample out of 51 may pose potentially significant cancer health risks in excess of the 10^{-5} cancer risk

threshold, and one point of generation sample exceeds the 10^{-4} cancer risk threshold. Methylene chloride and beryllium are the constituents of concern. In the Electric and Electrical Components industry, 32 point of generation samples contain potentially significant cancer health risks in excess of 10^{-5} , of which 13 samples present cancer risk between 10^{-4} to 10^{-5} ; 11 samples present cancer risk between 10^{-3} to 10^{-4} ; and, 8 present cancer risk in excess of 10^{-3} . Methylene chloride and beryllium are the constituents of concern. The Agency continues to evaluate additional industries based on available data. The risk analyses for these data will be placed in the RCRA docket for this proposal.

In its analysis of leaks using high-end assumptions, EPA found potentially significant health risks (above 10^{-5}) at sampling points in the Pharmaceuticals, Pesticides, Pulp & Paper, OCPSF, Inorganic Chemicals, and Electronics and Electrical Components industries. In the Pharmaceuticals industry, 14 samples out of 38 at the raw wastewater, equalization pond, biological pond influent, and effluent from post-biological ponds (a measure of risk from a post-bio pond) present potentially significant cancer health risks in the range of 10^{-3} to 10^{-5} ; constituents of concern include methylene chloride, acrylonitrile, chloroform, 1,2-dichloroethane and alpha-bhc. In the Pesticides industry, three samples out of 11 at the influent to a pre-bio pond exceed the 10^{-5} cancer risk threshold; the constituent of concern for all three samples is methylene chloride. In the Pulp & Paper industry, three samples of 12 at the influent to the wastewater treatment system and one sample of 15 at the effluent from the wastewater treatment system (sample from a bio or post-bio pond) may pose potentially significant sources of cancer risk (estimates in the range of 10^{-4} to 10^{-5}); constituents of concern are chloroform, 1,2-dichloroethane, 1,1,2,2-tetrachloroethane and bis (2-ethylhexyl) phthalate at the influent and methylene chloride and chloroform at the effluent. In the OCPSF industry, about one-third (20 of 51) samples of the raw wastewater samples present cancer risks in excess of 10^{-5} . One half (9 samples) present cancer risks in excess of 10^{-4} . About one-third (13 of 34) of the biological pond influent samples indicated cancer risks in excess of 10^{-5} ; all samples but one indicated cancer risks in excess of 10^{-4} . In the Inorganic Chemicals industry, two point of generation samples present potentially significant cancer health risk in excess of 10^{-3} ;

methylene chloride and beryllium are the constituents of concern. Finally, in the Electronics and Electrical Components industry, 11 point of generation samples (out of 295) present potentially significant cancer health risk in excess of 10^{-4} ; 21 samples present cancer health risk in excess of 10^{-3} ; methylene chloride and beryllium are the constituents of concern.

For sludges, EPA estimated the risks from disposal in an unlined, nonhazardous landfill after the sludges are dredged from a surface impoundment. Using estimated sludge concentrations in the OCPSF industry, EPA conducted both a central tendency and high-end analysis. In the central tendency analysis, one pre-bio sample (of 87) presents cancer risk in excess of 10^{-4} and one bio sample (of 74) presents risk in excess of 10^{-5} ; acrylonitrile is the constituent causing both exceedances. In the high-end analysis, two pre-bio samples (of 87) present cancer risk in excess of 10^{-5} ; and one bio sample (of 74) presents cancer risks in excess of 10^{-4} ; acrylonitrile and 1,4-dichlorobenzene are the causes.

To assess the potential risk posed by air emissions, EPA examined samples at the point of generation of the wastewater. Across all industries, one-fifth of samples (290 to 363 of 1562 samples) exceed 100 parts per million (ppmw) by weight of volatile organic compounds (VOCs). Under the recent RCRA Subpart CC final standards, air emission control requirements of the rule apply to affected units if hazardous waste placed in the unit is determined to have an annual average volatile organic concentration equal to or greater than 100 ppmw based on the organic composition of the hazardous waste at the point of waste origination. See § 264.1083 (promulgated at 59 FR 62928 (December 6, 1994)). Preliminary results show that 15 percent of samples (87 to 117 of 690 samples) from the Pharmaceutical, Pulp and Paper, Pesticide, and Metal Product and Machinery industries exceed 100 ppmw. In the OCPSF industry, 48 to 59 percent of the sample facilities (75 to 92 of 157 facilities) assessed had at least one sample of wastewater that exceeded the 100 ppmw limit. For a detailed discussion of risks and regulatory impacts, see the background document "Regulatory Impact Analysis of the Proposed Phase IV Land Disposal Restrictions Rule," which was placed in the docket for today's proposed rule.

F. Overview of Options

In general terms, the risks due to cross-media releases have the potential

to vary from insignificant to significant. EPA is considering three types of options for addressing this issue. The first option is not to issue LDR requirements, but rather to rely on other Agency programs to address these releases under current rules or future efforts (i.e., Clean Air Act (CAA) standards, RCRA Corrective Action, State programs, and others). The second option is to develop controls that focus on the subset of situations that pose excessive risk and are not addressed by existing requirements or those under development. Finally, the third option is to require that decharacterized wastes be treated (not merely diluted) to meet Universal Treatment Standards (UTS) before entry into surface impoundments. This forces modification at facilities that do, as well as those that do not, pose risks from leaks, air emissions, and sludges. None of the options would apply to units which satisfy the Minimum Technology Requirements or the statutory non-migration standard.

The Agency is neutral between the first and second options. The second option is necessarily more complicated than the other two, and so is discussed here at greater length; it should not thereby be inferred that this is EPA's preferred approach. The third option was also considered, but EPA is not recommending it because of potential disruption to needed wastewater treatment, high costs to affected industries, and lack of targeted risk reduction.

G. Option 1

Option 1 relies on the Phase III rule to satisfy the equivalence standard enunciated by the D.C. Circuit. As noted, that rule would link LDR and CWA end-of-pipe standards to assure that mass removal of UHCs occurs to the same extent in CWA impoundment-based treatment systems as it does in conventional RCRA treatment systems. As discussed above, the court's opinion does not explicitly require more.

If ostensible treatment impoundments generally acted as conduits for extensive cross-media transfers of untreated hazardous constituents, it is not clear that the standard enunciated by the court would be satisfied. However, there are existing or forthcoming regulatory mechanisms which tend to protect against such wholesale releases.

Following is a brief description of what coverage federal and State regulations may provide to control excessive releases from surface impoundments receiving decharacterized wastes. For more information, see the following in the

RCRA Docket: "Technical Support Document—Options for Management Standards for Leaks, Sludges, and Air Emissions From Surface Impoundments Accepting Decharacterized Wastes," and the Executive Summary of the "Regulatory Impact Analysis of the Proposed Phase IV Land Disposal Restrictions Rule."

The Toxicity Characteristic (TC), which exists for 39 of the 212 UHCs, cannot be exceeded in the wastewater or sludges contained in the surface impoundments, and therefore, provides some control. See, e.g. 976 F.2d at 24 fn. 10. Also, approximately 42% of the facilities with impoundments which receive decharacterized wastes are RCRA Treatment, Storage, or Disposal Facilities (TSDFs). RCRA TSDFs have at least one unit at the facility which requires a RCRA Subtitle C permit. Under RCRA § 3004(u), the primary cleanup authority for permitted TSDFs, releases of hazardous constituents from solid waste management units at such facilities are subject to corrective action. TSDFs that have not yet received permits, and are operating under interim status, are subject to cleanup under § 3008(h), which provides EPA with similar authority to compel corrective action. Surface impoundments affected by today's proposed rule are solid waste management units; releases from these impoundments are subject to corrective action on a site-specific basis. While the State or EPA has the authority to control emissions from Subtitle D surface impoundments at Subtitle C TSDFs not only during corrective action, but also during normal operations, they may choose not to do so, primarily because of priorities, resources, and perceived risk.

EPA also is presently implementing Section 112 of the CAA to impose technology-based standards for hazardous air pollutants at enumerated major sources, requiring control by means of Maximum Available Control Technology (MACT). These rules are subject to explicit deadlines, and already address wastewater treatment impoundments in certain industries potentially affected by the Phase IV rule (e.g. the Hazardous Organics National Emission Standards for Hazardous Air Pollutants (NESHAP) at 59 FR 19402, April 22, 1994), or will address such impoundments. Several rules have been promulgated addressing air emissions from portions of the hazardous of the organic, benzene, chromium electroplating, ethylene oxide, halogenated solvent, polymers and resins, petroleum, and ferroalloy industries. Examples of forthcoming

standards are the MACT for the pharmaceutical industry and the pulp and paper industry. In addition, NESHAPs that may affect portions of the petroleum, metal plating, organic chemical and inorganic chemical industries are scheduled for promulgation in 1995 and 1996. EPA believes, however, that some surface impoundments in the potentially affected universe of industries will not be covered by these CAA regulations. For a detailed description of coverage by CAA rules, see the Table entitled "NESHAP Programs Identified in Semiannual Regulatory Agenda" in the "Technical Support Document—Options for Management Standards for Leaks, Sludges, and Air Emissions From Surface Impoundments Accepting Decharacterized Wastes," and see also the background document entitled "Description of Process to Determine the Potentially Affected Universe for the Phase IV LDR Rule."

With regard to other on-going efforts, EPA is actively investigating whether to list additional wastes as hazardous, and is investigating the possibility of developing voluntary guidelines for Subtitle D facility standards that would more broadly address non-hazardous industrial wastes.

In addition to federal controls, some States have environmental controls on surface impoundments that receive nonhazardous industrial waste, such as ground water monitoring for hazardous constituents, leachate collection systems, sludge management programs, and cleanup authorities. Thirty-six States have at least some regulations that may be relevant to the cross-media concerns in this rule. Among those States, requirements to prevent ground water contamination from surface impoundments vary considerably. States with the most requirements include such controls as specific liner requirements, leachate collection and removal systems, ground water monitoring, closure and post-closure plans, corrective action, and permits. In contrast, States with less comprehensive programs may require only two or three of these requirements, or may apply them only to dischargers, only to non-dischargers, or in other ways limit the applicability of their programs. However, EPA does not have information on key factors to help it assess the degree to which State programs can be relied upon to prevent excessive releases from surface impoundments via leakage. For example, it is not known which constituents are monitored, what concentrations are considered acceptable levels, or whether the State

requirements mentioned above apply to existing units, or only to new ones. For a more detailed assessment of how State programs protect ground water from contamination from the type of surface impoundments at issue in this rule, see "Technical Support Document—Options for Management Standards for Leaks, Sludges, and Air Emissions From Surface Impoundments Accepting Decharacterized Wastes," in the RCRA Docket.

State controls on sludge from nonhazardous surface impoundments are generally far less than the controls for preventing leaks. EPA's information is that thirty-seven states have no sludge requirements. Other states, such as Alabama, Florida, and Missouri, have minimal requirements under their National Pollutant Discharge Elimination System (NPDES) permits for sludge management. Pennsylvania requires sludge to be removed annually from storage surface impoundments. In California, sludge must be disposed in a landfill or monofill. One of the states with more controls is Michigan, which requires a plan for sludge monitoring, treatment, transportation, storage, and disposal, along with a hydrogeological study if there is a threat to ground water.

With respect to air emissions, the Agency recognizes that State Implementation Plans, or SIPS, which are mandated under the Clean Air Act, may provide some control. EPA solicits information on the extent to which State and Tribal programs control leaks, sludge, and air emissions from surface impoundments receiving decharacterized wastes.

H. Option 2

1. Introduction

Option 2 is an intermediate approach between saying the LDRs do not apply and saying they do apply in the traditional manner. In defining this regulatory option for consideration, EPA tried to accomplish seven basic objectives: (1) Focus controls on those situations that present risks that amount to significant permanent disposal; (2) avoid duplication with other Agency requirements; (3) provide flexibility in dealing with site-specific factors and cost-effective control alternatives; (4) recognize the effective treatment function performed by wastewater treatment impoundments, and avoid needlessly invalidating such function; (5) identify controls that protect human health and the environment; (6) minimize implementation burden; and (7) create incentives for alternative controls (state, tribal or federal) to

address significant releases from such units and so render LDR controls unnecessary.

2. Applicability

To focus on risks, Option 2 excludes from control those situations which are expected to pose little risk. First it excludes wastewaters that do not have, at the point of generation, hazardous constituents present above the UTS. Such wastes obviously are not prohibited from land disposal. Second, wastewaters with *de minimis* amounts of hazardous constituents are excluded—i.e., not prohibited. (Criteria for determining *de minimis* situations would be identical to those proposed in the Phase III rule for discharges to UIC wells.) Third, sludges and leaks from biotreatment and post-biotreatment units would not be covered due to the lower risks posed by these units. Fourth, characteristic wastes which at the point of generation do not exceed 100 ppmw of total volatile organics on an annual average would not be subject to air emission controls. Fifth, surface impoundments containing underlying hazardous constituents at concentrations below a trigger level (e.g., 10 times the Maximum Contaminant Level, or MCL) would not be addressed for leaks. Finally, none of the Option 2 standards would apply if the impoundment satisfies Minimum Technology Requirements or the statutory no migration standard. These applicability principles are explained in more detail below.

To avoid duplication with other requirements, EPA would defer to other federal rules which establish controls addressing the same situations. Deferral would occur where the existing program addressed the specific UHCs of concern. In the case of air emissions, EPA would defer to standards regulating total volatile organics, as adequately covering air emissions of UHCs from this type of treatment. In addition to existing regulations, there are some CAA air emission limits under development. Inefficiencies and confusion could occur if Option 2 controls were applied and soon superseded by upcoming CAA standards. Facilities subject to CAA standards for hazardous air pollutants (in particular, those promulgated pursuant to CAA § 112) in the near future thus would not be covered by Option 2 air emission controls. In the case of releases to ground water, EPA would defer to certain existing programs, as is explained in more detail below.

This option also would recognize the existence of the types of controls mentioned above in connection with

Option 1. Thus, if an impoundment is located at a permitted TSDF, no further control would be adopted under Phase IV. EPA Regional, State, or Tribal limits which control releases of specific UHCs from impoundments also would be considered controlling and so make Phase IV controls unnecessary.

Option 2 provides flexibility in dealing with site-specific factors and cost-effective control alternatives.

Facilities have the choice of treating the characteristic wastestream to meet UTS before entering a surface impoundment, thus avoiding any management standards enumerated in the option. This option also incorporates alternative means of compliance proposed in the Phase III rule, namely an exception for *de minimis* decharacterized wastestreams (i.e., prohibited wastewaters containing *de minimis*

amounts of UHCs) and an option allowing the requisite mass reduction of hazardous constituents to be achieved by means of pollution prevention rather than wastewater treatment. For a simplified guide to which facilities would be affected by option 2, see the following flow chart entitled Figure 1.

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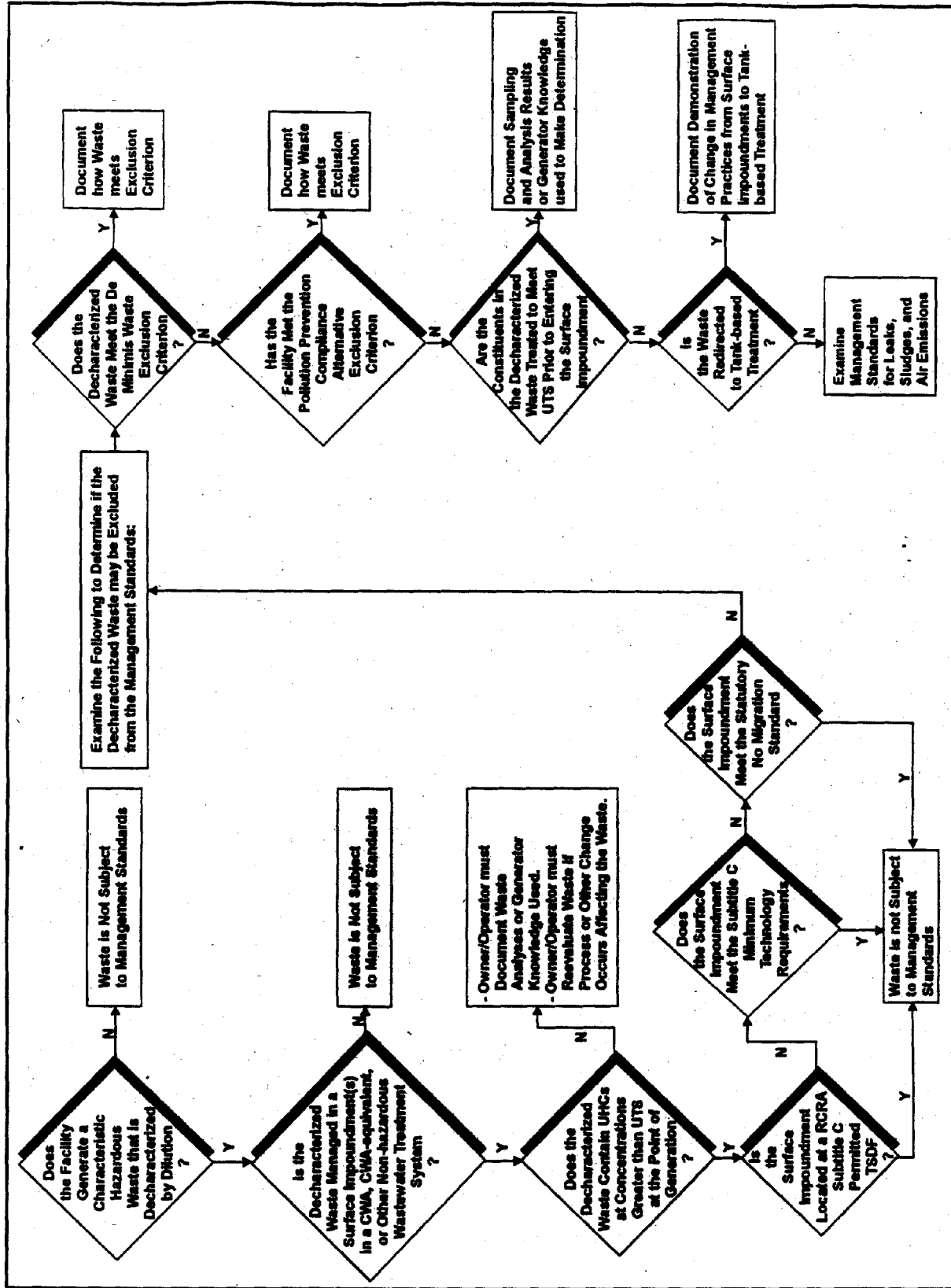


Figure 1: Option 2 - General Applicability Criteria and Compliance Alternatives for Surface Impoundments Accepting Decharacterized Wastes

For those facilities which do not meet the criteria to screen out the low risk situations, and are not subject to other federal, State, or Tribal limits to address the UHCs of concern, Option 2 would provide controls similar to those currently applied to other industrial wastes. Air emissions would be subject to the substantive requirements for surface impoundments of RCRA Subpart CC. (59 FR 62896; December 6, 1994.) Leaks would necessitate ground water monitoring for UHCs, and corrective action would be triggered if ground water exceeds levels of concern. Sludges would be subject to UTS when removed from the surface impoundment. The following sections provide a more detailed description of these potential requirements.

To minimize implementation burdens make many of the requirements self-implementing, and set minimal reporting/recordkeeping requirements. All of the requirements would be effective two years after promulgation, due to a proposed national capacity variance (see Section VIII of this rule). Under circumstances when the air emission, leaks, or sludge control equipment required to comply with the standard cannot be operational at an existing facility by the two-year deadline, an implementation schedule for installation of the equipment would have to be developed and placed in the facility operating records. In such cases, the facility owner or operator would have to have all controls in operation no later than 48 months after the effective date. Furthermore, surface impoundments that have stopped receiving decharacterized wastewaters on or before the date of promulgation would not be subject to any of the requirements proposed today. Surface impoundments that stop receiving decharacterized wastewaters after the date of promulgation and on or before the date two years after promulgation would be subject only to the recordkeeping requirements. Where

alternative non-RCRA standards are set by EPA, States, or Tribes (e.g., CAA standards for air emissions), deferral to standards means there is no RCRA requirement.

The following sections describe management standards the Agency is considering for leaks, sludges, and air emissions from surface impoundments accepting decharacterized wastes. EPA seeks comment on these standards, including the possibility of adopting standards for certain of the potential problems and not others, e.g., finalizing standards for leaks and air emission control, but not for sludge control.

Additionally, Option 2 would apply controls on air emissions for all three types of surface impoundments (pre-biological, biological, and post-biological), while limiting sludge and leak controls to pre-biological units only, based on the risk findings. The statute already specifies more lenient regulatory controls for biological and post-biological treatment impoundments. Section 3005(j)(3) exempts from minimum technology requirements hazardous waste biological and post-biological surface impoundments. Such impoundments must in general be performing aggressive biological treatment (or performing post-biological treatment), be in compliance with CWA permits and with generally-applicable ground water monitoring requirements, and be achieving significant degradation of toxic pollutants. This provision recognizes that such treatment impoundments both perform an important treatment function and pose less risk than other impoundment types. Today's proposal is premised on similar findings. EPA seeks comment on all combinations of applying the three types of controls (leaks, sludges, and air emissions) to all three types of impoundments.

3. Proposed Management Standards for Air Emissions

a. Scope. Option 2 would extend requirements of Subpart CC regulations to surface impoundments in CWA, CWA-equivalent, or nonhazardous wastewater treatment systems that accept wastes decharacterized by dilution. Subpart CC rules would not apply directly under this option, since that rule applies only to units managing hazardous waste. § 264.1080(a). However, substantive requirements, borrowed from that rule, could apply to surface impoundments receiving prohibited, decharacterized wastes. The specific standards in this option would be: general standards (264.1082), waste determination procedures (§ 264.1083), surface impoundment unit standards (§ 264.1085), closed-vent and control device standards (§ 264.1087), inspection and monitoring procedures (§ 264.1088), recordkeeping requirements (§ 264.1089), and reporting requirements (§ 264.1090). The provisions would only apply to affected surface impoundments used to manage decharacterized wastes if the decharacterized waste (containing UHCs above UTS at the point of generation) placed in the unit is determined to have an average volatile organic concentration greater than or equal to 100 ppmw based on the organic composition of the waste at the point of generation. Averaging periods of up to 1 year in duration would be utilized for each individual wastestream. The types of requirements EPA is considering are quite similar to those required generally under the CAA for control of volatile organic hazardous air pollutants (e.g., see the Hazardous Organic NESHAP (59 FR 19402, April 22, 1994) and the Benzene Waste Operations NESHAP (58 FR 3072, January 7, 1993)). For a simplified guide to the management standards for air emissions, see the following flow chart entitled Figure 2.

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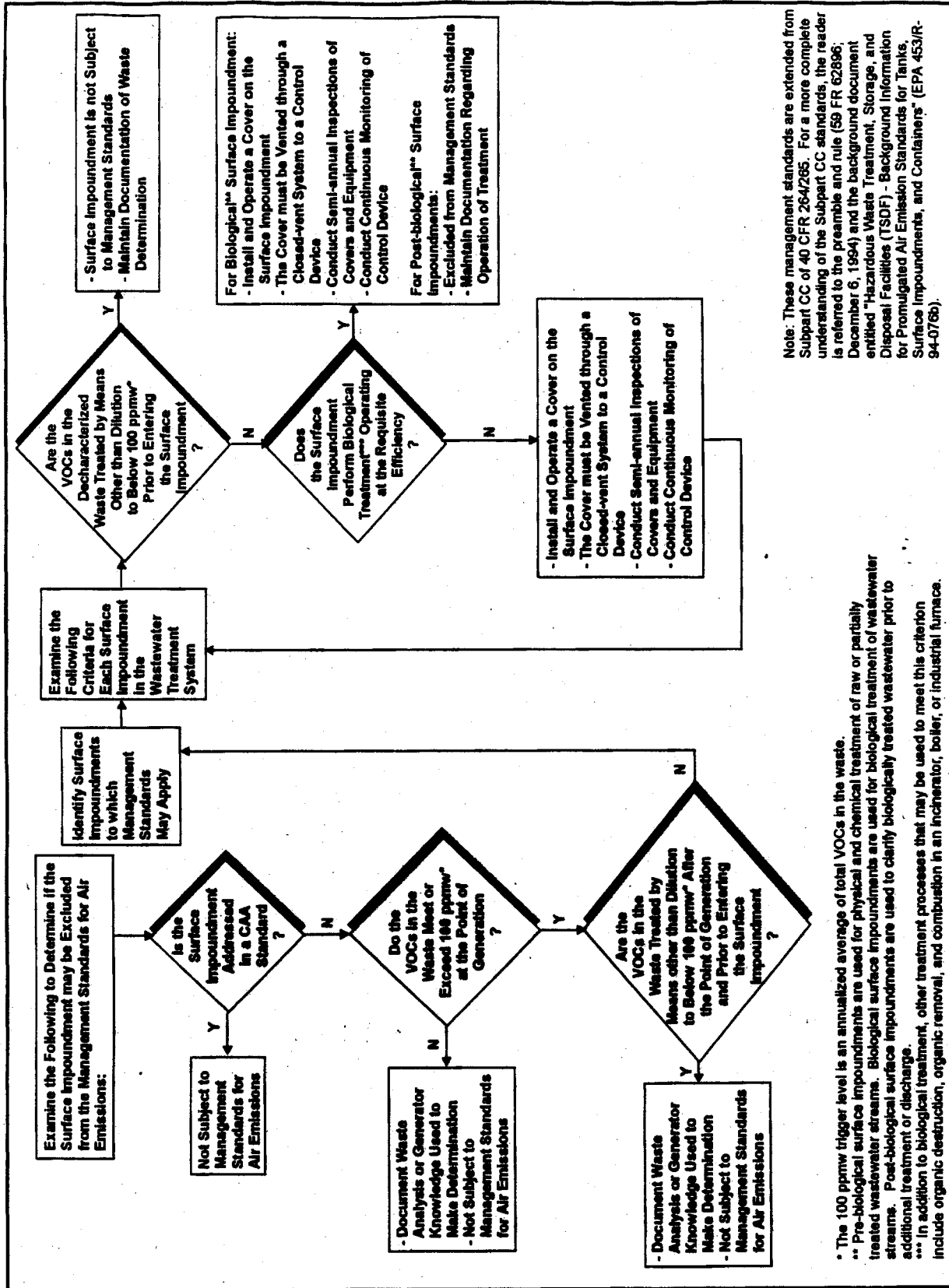


Figure 2: Option 2 - Applicability Criteria and Management Standards for Air Emissions

b. Applicability. For each surface impoundment identified in today's rule to which the extended subpart CC requirements apply, the owner or operator would be required to use the air emission controls specified herein except when the decharacterized waste placed in the surface impoundment meets certain conditions.

(i.) Volatile organic concentration exemption. Under this option, a surface impoundment accepting decharacterized waste would not be considered to engage in impermissible transfer of untreated hazardous constituents to the ambient air if all the prohibited waste (i.e., the decharacterized waste) placed in the impoundment is determined to have an average volatile organic concentration less than 100 ppmw based on the organic composition of the waste at the point of generation. Establishing the trigger concentration of point of generation, rather than point of placement in an impoundment, is designed to prevent dilution and volatilization of organics in the waste. 59 FR at 62915. This feature of the option thus dovetails with the central concern of the D.C. Circuit in allowing dilution rather than destruction/removal via treatment for hazardous constituents.

(ii.) Treated hazardous waste exemption. Under this option, each affected surface impoundment that manages a characteristic waste that has been decharacterized by dilution but contains UHCs above UTS and has an average volatile organic concentration equal to or greater than 100 ppmw, as determined by the procedures found in § 264.1083, is required to be managed in accordance with the applicable Subpart CC requirements. See § 264.1085. Realizing that many organic UHCs likely to be present in characteristic waste being treated in a surface impoundment are also VOCs, and because the Agency wishes to be consistent with other air regulations and therefore necessitate control, the Agency believes that total VOCs is an appropriate measure for determining when potential releases through air emissions would be excessive. 976 F.2d at 17. The owner or operator would install and operate the specified air emission controls on every affected unit used in the waste management sequence from the point of generation (as it applies to the specific prohibited wastestream) through the point where the organics in the waste are removed or destroyed in accordance with § 264.1082. If the decharacterized wastestream is not treated to meet these requirements, then all surface impoundments at the facility used in

the waste management sequence for this decharacterized waste would be required to use the air emissions controls specified in the extended subpart CC surface impoundment standards.

The extended subpart CC standard would thus provide owners or operators of surface impoundments accepting decharacterized wastes with several alternatives for determining when wastes have already been treated sufficiently so that surface impoundments would not have to meet the air emission control requirements. Put another way, the organic component of the prohibited wastes would be fully treated before land disposal and so the impoundment would not be subject to control. Types of treatment processes that would obviate the need for further control are an organic destruction, biological degradation, or organic removal process that reduces the organic content of the decharacterized waste and is designed and operated in accordance with certain conditions specified in the rule, or combustion in an incinerator, boiler or industrial furnace.

The requirements for a destruction, biological degradation, or removal process that reduces the organic content of the waste are specified in the extended Subpart CC rule as follows:

- (1) It must reduce the volatile organic concentration of the waste to meet a site-specific treatment process exit concentration limit determined by an equation (specified in the rule) that accounts for the portion of the reduction due to dilution; or
- (2) It must be a single process that achieves an organic reduction efficiency of 95 percent or greater on a mass basis, and reduces the average volatile organic concentration of the wastestream exiting the process to a level less than 50 ppmw; or
- (3) It must be a biological process that either (a) achieves an organic reduction efficiency equal to or greater than 95 percent, and achieves an organic biodegradation efficiency for the process equal to or greater than 95 percent, or (b) achieves a total actual organic mass biodegradation rate for all decharacterized wastes treated by the process equal to or greater than the required organic mass removal rate for the process.

c. Surface impoundment management standards. If the prohibited, decharacterized wastes are not pretreated, the requirements under the subpart CC standards for surface impoundment air emission control equipment specify that the owner or operator install and operate on each affected surface impoundment a cover (an air supported structure or cover) that is vented through a closed-vent system to a control device meeting the requirements specified in 264.1085(d).

As an alternative, an owner or operator may place the waste in a surface impoundment equipped with a floating membrane cover meeting the requirements specified in 264.1085(e).

d. Closed-vent system and control device requirements. Since emissions from impoundments would be captured and vented, this option contains provisions to assure that the vented emissions are treated properly before release. See 976 F.2d at 17. The subpart CC standards, which would be utilized under this option, require that each control device achieve at least a 95 percent reduction in the total organic content of the vapor stream vented to the device or, in the case of an enclosed combustion device, a reduction of the total organic content of the vapor stream to a level less than or equal to 20 ppmw on a dry basis corrected to 3 percent oxygen. These requirements are generally the same as those used in EPA air rules. See 59 FR 19402 and 59 FR 62896.

e. Inspection and monitoring. To ensure that emission control equipment is properly operated and maintained, the extended subpart CC standards would require the owner and operator to visually inspect certain emission control equipment items semiannually. For example, emission control equipment covers on surface impoundments would be checked semiannually by facility employees to ensure that (1) equipment is being used properly (e.g., covers are closed and latched except when an opening must be used to add, remove, inspect, or sample the waste in the surface impoundment or to inspect, maintain, replace, or repair equipment located inside the surface impoundment or to vent gases or vapors from the surface impoundment) and (2) equipment is being maintained in good condition (e.g., no visible holes, gaps, tears, or splits have developed in covers).

Continuous monitoring of control device operation is required under the subpart CC standards. This involves the use of automated instrumentation to measure critical operating parameters that indicate whether the control device is operating correctly or is malfunctioning. Semiannual leak detection monitoring using Method 21 under 40 CFR part 60, appendix A, is required for certain cover components to ensure gaskets and seals are in good condition and for closed-vent systems to ensure all fittings remain leak-tight. In addition, each closed-vent system must be monitored for leaks using Method 21 at least once per year.

The extended subpart CC standards would require that the owner or

operator repair a cover fitting found to be leaking within 15 days of detection. Repair of control equipment on a surface impoundment may be delayed beyond 15 calendar days under certain circumstances. To delay repair, the owner or operator would have to document that the repair cannot be completed without emptying the contents of the unit and also that removing the unit from service would result in the unscheduled cessation of production from the process unit or operation of the waste management unit that is generating the decharacterized waste. Repair of this control equipment would have to be completed the next time the process unit or waste management unit is generating the decharacterized waste managed in the surface impoundment is shut down.

f. Recordkeeping requirements. The extended requirements of the subpart CC standards would require the owner or operator to record certain information in the on-site facility operating logs or files. This information is to be readily available for review by authorized representatives of the EPA. Consistent with 40 CFR 264.73 and 40 CFR 265.73, the rule requires that air emission control equipment design records and certain other records be maintained in the facility operating record until facility closure. Records and results of waste determinations, inspections, and monitoring are required to be kept for at least three years from the date of entry.

The information to be collected and recorded includes: the results of all waste determinations such as of volatile organic concentrations at the point of waste generation and organic vapor pressure; design specifications for closed-vent systems and control devices and certain control equipment; emission control equipment inspection and monitoring results; Methods 27 test results; control device exceedances and actions taken to remedy them; leak repairs; management of carbon removed from carbon adsorption systems; identification of incinerators, boilers, or industrial furnaces used to treat decharacterized waste in accordance with the general requirements of the rule; documentation for biological wastewater treatment units using air emission controls in accordance with the rule requirements; and identification of equipment fittings designated as unsafe or difficult to monitor or inspect.

g. Reporting requirements. The extended requirements of subpart CC standards would require an owner or operator to submit reports to the EPA only when circumstances occur at the facility resulting in noncompliance with certain provisions of the rule. Each

report required under the extended subpart CC standards would be submitted to the EPA Regional office having jurisdiction for that particular location. The report would be signed and dated by an authorized representative of the facility owner or operator.

An owner or operator subject to the extended requirements of 40 CFR 264 subpart CC would have to report to the EPA all circumstances resulting in placement of a decharacterized waste in a surface impoundment subject to the proposed rule and not using air emission controls required by the rule when either of the following conditions occur: (1) The characteristic waste has a volatile organic concentration equal to or greater than 100 ppmw as determined on a mass-weighted average basis at the point of waste origination, or (2) the process used to treat the characteristic waste fails to meet the applicable conditions specified in the rule. The owner or operator would have to submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the circumstance.

An owner or operator subject to the extended requirements of 40 CFR part 264, subpart CC and using a control device in accordance with the requirements of the rule would be required to submit a semiannual written report to the EPA. This report would describe each occurrence during the previous 6-month period when a control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in 40 CFR 264.1035(c)(4) or when a flare is operated with visible emissions as defined in 40 CFR 264.1033(d). An owner or operator would not be required to submit this report for a 6-month period during which all control devices at a facility subject to the extended subpart CC standards are operated by the owner or operator so that during no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in the rule.

4. Proposed Management Standards for Leaks

a. Scope. If surface impoundments receiving decharacterized wastes (i.e., prohibited wastes) are leaking excessively, arguably disposal of untreated UHCs is occurring at a level which invalidates the treatment function of the impoundment (i.e., which constitutes an impermissible cross-media transfer of hazardous constituents. 976 F.2d at 17.). In addressing this possibility, this option

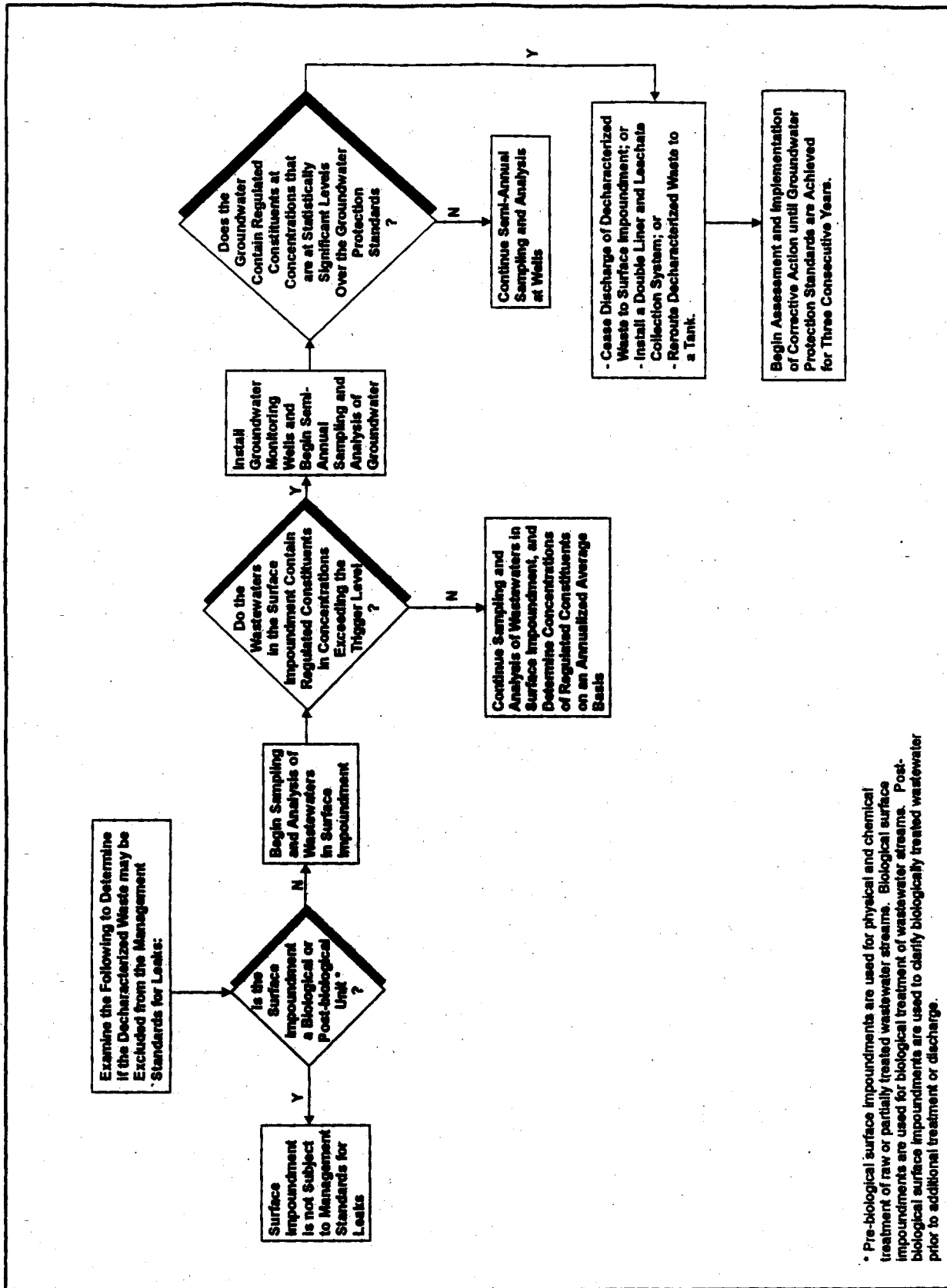
presents facilities with a sequence of monitoring, detection, and correction mechanisms to assure that impoundments do not leak UHCs at these levels, and thus allows continued use of the impoundment as part of a system achieving RCRA-equivalent treatment. Thus, facilities choosing to adopt the ground water protection approach set out below could continue to use impoundments to treat decharacterized wastewaters.

An alternative to adopting a ground water protection program is to treat decharacterized wastes before they reach the impoundment, to segregate them altogether, or to retrofit the impoundment so that it meets section 3005(j)(11) minimum technology requirements. These options remain available at any time to a facility, so that a facility would not be locked in to the ground water protection alternative if it wishes to pursue alternative means of compliance. There is a caveat, however. If a facility chooses to comply with the ground water protection alternative and later detects impermissible levels of contamination in the ground water at the well sites, the contamination would still have to be remediated as set out in this proposed rule, even if the facility begins to divert or pretreat the prohibited characteristic wastestream at that time. The logic for this is that there would have been documented disposal of prohibited wastes not treated to meet LDR standards. In such circumstances, the Agency has available to it the remedy that the illegally disposed waste must be retrieved and properly managed. (See *U.S. v. Structural Metals, Inc.* Civil Action No. SA—91—CA—201 (W.D. TX May 27, 1992)—a consent decree requiring that 3600 tons of illegally disposed hazardous waste be removed from a landfill and properly treated before being disposed.)

Option 2 would adopt, with modifications, certain sections of the Municipal Solid Waste Landfill rule (referred to herein as the MSWLF rule) at 40 CFR Part 258 Subpart E, for the control of leaks and the application of corrective action to the following affected units: surface impoundments in CWA, CWA-equivalent, or nonhazardous wastewater treatment systems that accept wastes decharacterized by dilution. The specific standards in this option include portions of ground water monitoring systems (§ 258.51); ground water sampling and analysis requirements (§ 258.53); assessment monitoring program (§ 258.55); assessment of corrective action measures (§ 258.56); selection of remedy (§ 258.57); implementation of the corrective action

program (§ 258.58). For a simplified guide to applicability criteria and management standards for leaks, see Figure 3.

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* Pre-biological surface impoundments are used for physical and chemical treatment of raw or partially treated wastewater streams. Biological surface impoundments are used for biological treatment of wastewater streams. Post-biological surface impoundments are used to clarify biologically treated wastewater prior to additional treatment or discharge.

Figure 3: Option 2 - Applicability Criteria and Management Standards for Leaks

b. Applicability. The proposed management standards for leaks would only apply to owners and operators of facilities that generate characteristic wastes that at the point of generation (and prior to decharacterization) contain UHCs at concentrations that are greater than UTS levels. The UHCs that are present at greater than UTS are known as "regulated constituents." Only these regulated constituents must be considered in complying with the management standards for leaks. UHCs present in a characteristic waste at levels less than or equal to UTS are not subject to the proposed management standards for leaks. If these decharacterized wastes are discharged to a surface impoundment that meets the substantive minimum technology requirements of 40 CFR 268.4, the Phase IV leak requirements would not apply.

The Agency's primary concern with regard to leaks from these surface impoundments is the potential for regulated constituents to migrate to the ground water in significant concentrations. The most direct method available for assessing the presence of regulated constituents in the ground water is groundwater monitoring. However, the Agency believes it would be overly burdensome and unnecessary to achieve the rule's intended purposes to require every surface impoundment that manages decharacterized wastes to install ground water monitoring wells. As a result, the Agency is proposing that regulated constituents for which an MCL has been promulgated under section 1412 of the Safe Drinking Water Act (SDWA), codified under 40 CFR part 141, must be present at concentrations in the surface impoundment wastewaters that meet or exceed 10 times the MCL before ground water monitoring is warranted. Thus, if the MCL for a hazardous constituent is 1 mg/l and the hazardous constituent is present in surface impoundment wastewaters at less than 10 mg/l, no groundwater monitoring would be required. The Agency believes that the use of MCLs as a trigger level for ground water monitoring is appropriate because MCLs are a reasonable benchmark of risk posed to human health from a drinking water source. By using a trigger of 10 times the MCL, the Agency is taking into account the reasonable dilution and attenuation that would occur as constituents migrate in the substrate. This trigger level corresponds to the dilution and attenuation factor (DAF) of 10 (at the point of release to the aquifer) currently under consideration for the Hazardous Waste Identification Rule (HWIR) proposal.

For UHCs that do not have MCLs, the Agency is proposing the following approach. In the absence of an MCL, the state or tribal risk-based number (i.e., 10 times the state or tribal ground water protection number) would be used for the regulated constituent (see 40 CFR 258.55(i)). In the absence of both an MCL and state or tribal risk-based number, the UTS level—the directly RCRA-equivalent level—would be used for the regulated constituent.

c. Surface impoundment management standards. The Agency is proposing to use annual sampling of the wastewaters in the surface impoundment to determine if regulated constituents are present at concentrations that exceed the trigger level. Sampling and analysis need only be conducted for those regulated constituents identified in the characteristic waste at the point of generation. If a new decharacterized wastewater is accepted by the surface impoundment, then the owner or operator would be required to characterize the new decharacterized wastewater at point of generation to identify additional regulated constituents prior to the next annual sampling date. Annual sampling must be continued for as long as the unit is receiving decharacterized wastes. Sampling and analysis is discussed in further detail in the technical support document entitled, "Technical Support Document for Leaks, Sludges, and Air Emissions—Phase IV."

To determine if a trigger level has been exceeded, the owner or operator would calculate an annualized average concentration for each regulated constituent identified. This annualized average will account for process fluctuations and process upsets and would appropriately represent the wastewaters in the surface impoundment. At a minimum, the owner or operator would be required to include at least four sampling events (i.e. quarterly), and a minimum of four independent samples from each sampling event. (See "Technical Support Document—Options for Management Standards for Leaks, Sludges, and Air Emissions From Surface Impoundments Accepting Decharacterized Wastes" in the RCRA docket for more information on sampling.)

d. Ground water and corrective action management standards. EPA is proposing that the ground water monitoring and corrective action regulations for municipal solid waste landfills (MSWLFs) under the Subtitle D program (Solid Waste Disposal Facility Criteria, 56 FR 50978, October 9, 1991) be adopted with minor modifications for

the monitoring and remediation of surface impoundments subject to today's proposed rulemaking. EPA believes that the ground water monitoring and corrective action standards in the MSWLF rule, as modified in today's rule, are appropriate and protective for the surface impoundments subject to today's rulemaking. Thus, under this option, an impoundment choosing to operate with these measures would be considered a treatment impoundment not engaging in permanent disposal of waste. Put another way, the impoundment could be part of a treatment process that can perform LDR-equivalent treatment. EPA is not, however, intending that the approach outlined in today's proposed rule is necessarily appropriate for other industrial solid waste management units.

Many states have ground water protection programs that include ground water monitoring and corrective action that may apply to the types of units that EPA is covering in today's proposal. To the extent that state programs require ground water monitoring and corrective action that include the UTS constituents of concern (or can be modified to cover those constituents) and are substantially similar to today's proposal (i.e., frequency of monitoring, requirements regarding ground water monitoring wells), EPA would defer to those State and Tribal Programs. The owner/operator would have to demonstrate that there exists a State or Tribe numerical limit for each regulated constituent and document that in their operating records. For those constituents not covered by State or Tribal limits, today's rule would apply. Further, facilities affected by today's rulemaking that have existing ground water monitoring and corrective action programs that are not required by State or federal government may be able to continue those programs in lieu of the regulations proposed here.

(i) MSWLF rule. Under this option, EPA is proposing to adopt some, but not all provisions of the MSWLF regulations, which are promulgated under 40 CFR Parts 257 and 258. The sections of Part 258 that EPA would adopt with minor modifications are in Subpart E: Ground Water Monitoring and Corrective Action. These are: Ground Water Monitoring Systems (§ 258.51); Ground Water Sampling and Analysis Requirements (§ 258.53); Assessment Monitoring Program (§ 258.55); Assessment of Corrective Measures (§ 258.56); Selection of Remedy (§ 258.57); and Implementation of the Corrective Action Program (§ 258.58). The section in Subpart E not being considered in today's rule is

section § 258.54, which requires a ground water monitoring detection program. General descriptions of the sections and changes that EPA is proposing for adoption in today's rule are provided below and under the following section titled "Specific Requirements".

Self-Implementing Provisions

The MSWLF regulations are structured to be either self-implemented by an owner or operator or implemented in "approved states" through approval and interaction with state regulatory agencies. The MSWLF rule was designed so that states with federally approved programs could define ground water protection and corrective action programs for individual MSWLFs that accounted for site-specific factors.

In referencing the MSWLF rule for ground water monitoring and corrective action activities for surface impoundments under today's rule, the Agency is proposing to adopt only those provisions that are self-implementing. EPA would modify the applicability of the MSWLF rule such that any provisions that require state approval would not apply. EPA is aware, however, that some of the site-specific provisions in the MSWLF rule that would not be available under today's proposed rule might be reasonable approaches for monitoring surface impoundments. For example, § 258.51(b) allows the director of an approved state to approve a multi-unit ground-water monitoring system, rather than require separate ground water monitoring systems for each unit.¹ At some facilities subject to today's rule with closely spaced surface impoundments, multi-unit monitoring may be protective and less expensive to install and monitor. EPA seeks comment on whether the multi-unit provision and any other site-specific provisions in the MSWLF rule that would not be available should be allowed to be self-implemented by facilities subject to

¹ The multi-unit system must be as protective of human health and the environment as individual monitoring systems, based on factors including the number, spacing, and orientation of the units, the hydrogeologic setting, site history, engineering design of the units, and type of waste accepted in the units. In addition to approval of the multi-unit system, § 258.51(d) requires that the number, spacing, and depths of monitoring systems must be certified by a "qualified ground water scientist" or by the director of an approved state. In today's rulemaking, certification by the qualified ground water scientist would be required, rather than approval by the state. In the absence of state approval, this certification would help ensure that a protective multi-unit monitoring system was installed (independent certification of certain ground water monitoring and corrective provisions is discussed further below).

ground-water monitoring and corrective action under the Phase IV rulemaking.

Certification of a Self-Implementing Program

In the MSWLF rule, the Agency stated that independent party review and certification of certain self-implemented programs or demonstrations required by the rule is necessary to ensure technical adequacy of critical ground water monitoring and corrective action milestones. Four provisions adopted from the MSWLF rule require certification by an independent "qualified ground water scientist": (1) Number, spacing and depths of monitoring systems (§ 258.51(d)); (2) determination that contamination was caused by another source or that a statistically significant increase resulted from an error in sampling analysis or evaluation (§ 258.55(h)(2)); (3) determination that compliance with a remedy requirement is not technically practicable (§ 258.58(c)(1)); and (4) completion of remedy (§ 258.58(f)).

The Agency defined a "qualified ground water scientist" at § 258.50 and discussed the relevant background and experience needed for these professionals to certify ground water monitoring and corrective action requirements in the MSWLF rule. This definition is also promulgated under § 260.10 for certain ground water monitoring, but not corrective action, certifications under the hazardous waste program. Individuals who qualify to certify ground water regulatory milestones under either the Subtitle D or C programs would also qualify to certify the ground water requirements adopted under today's rulemaking. Owners or operators of surface impoundments that undergo corrective action under today's rulemaking should ensure that any "qualified ground-water scientists" working in the Subtitle C program are qualified to certify corrective action requirements in addition to ground water monitoring requirements.

(ii) *Ground water monitoring. Installing a ground water monitoring system.* For today's proposed rule, EPA would require within one year of triggering ground water monitoring (that is, when a regulated constituent is detected at levels above regulatory concern in the surface impoundment), the owner/operator must install a ground water monitoring system and begin monitoring those wells for all regulated constituents. The Agency believes that it is appropriate to monitor for all the regulated constituents in the wells for the following reasons: (1) There will no longer be any type of

monitoring conducted in the surface impoundment (as long as the chemical composition of the waste remains the same at the point of generation); (2) monitoring of all regulated constituents is similar to the requirements established under the MSWLF rule where analysis of a number of constituents is required to determine the severity of a leak; and (3) it is essential to accurately characterize the chemical composition of a ground water release in order to aid in the corrective action plan, if necessary. EPA believes that allowing one year will enable owner/operators sufficient time to properly characterize their site and install ground water monitoring wells that will meet the performance standards of 258 Subpart E. EPA is aware that many sites with less complex hydrogeology and few units may not need the entire year to install their systems and commence monitoring. Facilities with existing monitoring systems that meet the applicable performance standards of Subpart E, Part 258 ground water monitoring systems will be required to begin monitoring for the UTS constituents regulated under today's rule at the next planned monitoring period under existing monitoring programs, or within one year.

Establishing a Ground Water Monitoring Program

The ground water monitoring program in today's proposed rule focuses on a different set of constituents than those in the MSWLF rule. Owners or operators subject to today's rule are required to sample waste water in the affected surface impoundments to determine if they have to install ground water monitoring systems. If ground water monitoring is triggered, owners or operators are required to undertake a monitoring program under § 258.55 of the MSWLF rule to monitor for only those UHCs that are present in the decharacterized waste prior to its dilution and disposal in the surface impoundment treatment system.

The ground water monitoring system must include a sufficient number of wells at the appropriate location and depth to determine background level and the quality of the ground water at the relative point of compliance. The relative point of compliance is required to be less than or equal to 150 m from the waste management unit boundary located on land owned by the facility. The MSWLF rule allowed for the director of an approved state to determine an alternative boundary. Today's rule is not allowing an alternative boundary, but rather requires the owner/operator to select the relative

point of compliance as stated above, and document this in the facility's records.

If statistically significant levels of these constituents are detected above the constituent-specific ground water protection standards as determined by § 258.55(h) of the MSWLF rule, the owner or operator is required to undertake corrective action to bring levels of the regulated constituents in the ground water to below the ground water protection standards. In contrast, under the MSWLF detection monitoring regulations, which are not being considered under this option, owners or operators are required to monitor for a list of constituents from specified lists (see Appendix I to Part 258). Constituents on this list are generally thought to be present at MSWLFs, have physical and chemical properties that cause them to be early indicators of a release from a unit and are easy and inexpensive to analyze. The MSWLF rule has provisions to modify the detection monitoring list via the overseeing regulatory authority if parameters are not reasonably expected to be found in ground water at the site. In contrast, the UHCs that the owner or operator is monitoring for under proposed Option 2 may not have fate and transport characteristics that would provide earliest indication of a release. However, EPA does not at this time have information to indicate whether the list of indicator parameters monitored for under the MSWLF detection monitoring program are present at the surface impoundments subject to today's proposed rule. Monitoring for constituents that are not present obviously would not provide protection from releases of site-specific UHCs. For these reasons, EPA is not proposing to adopt the requirement for facilities to monitor the ground water under the detection ground water monitoring program specified in 258.54. EPA is, however, proposing to require facilities to directly implement a program to monitor the regulated constituents in the ground water.

Detecting Releases

Today's proposed rule also would have a different approach when releases have been detected. When constituents are found under MSWLF rule detection monitoring at levels that trigger the next phase of monitoring (assessment), the owner/operators are required to analyze the ground water for a broad list of constituents (Appendix II to Part 258 of the MSWLF rule) that may be present to better characterize the nature of the release. Facilities that move to corrective action generally are required to address all ground water

contamination, rather than a subset of facility-specific UHCs. Today's proposed rule does not require facilities to scan for the § 258 Appendix II constituents because EPA's authority is limited to the UHCs in the prohibited wastes that are required to receive RCRA-equivalent treatment. Rather, owner/operators under today's rule would be required to move directly to assessment of corrective measures upon detecting that releases are statistically significant.

Corrective Action

If corrective action is required, this means that untreated UHCs are being released to the environment at an excessive level. The impoundment thus is not performing equivalent treatment. An operator can, however, capture and treat the constituents via corrective action, which would have the effect of re-validating the surface impoundments treatment function.

EPA is aware that owners or operators undertaking corrective action under today's proposed approach might de facto remediate constituents other than the regulated constituents in the ground water. For example, a ground water extraction system with an air stripping treatment unit designed to remove site-specific regulated constituents could also strip and collect other VOCs present in the ground water. Facilities may also be required to remediate all ground water contamination under other state or federal actions or may remediate additional contamination voluntarily because of concern over liability associated with leaving ground water partially contaminated.

Alternatives to Ground Water Monitoring

EPA is aware that the MSWLF rule does not adequately allow for alternatives to ground water monitoring when ground water monitoring is not practicable or would not detect early releases. For example, some landfills are located in arid regions where depth to ground water may exceed many hundreds of feet. In such a situation, ground water monitoring wells located at the margin of a unit might not intercept a release, as it might move laterally as well as vertically prior to intercepting the ground water at great depth. In addition, such wells would not detect a release until considerable contamination has entered the subsurface. EPA is currently developing a proposed rule to allow for alternative monitoring systems for remote, small arid landfills where monitoring of the unsaturated zone would afford early detection of releases before the release

migrates to the ground water. EPA has not included a related provision in today's proposed rule, because existing information indicates that the affected facilities are located adjacent to bodies of water, where ground water under the facility would be close to the surface. As with other ground water monitoring programs, EPA encourages owners or operators to install innovative monitoring systems, such as vadose zone monitoring, in addition to ground water monitoring, if those systems would aid in the early detection of releases.

(iii) Integration of option 2 with existing programs.—EPA is aware that many of the facilities that would be subject to the requirements of Option 2 will be undergoing ground water monitoring and corrective action under existing state or federal authorities. Approximately one half of the universe of affected facilities will be RCRA hazardous waste treatment, storage, or disposal facilities (TSDFs) that are permitted or operating under interim status. As noted above, at these facilities, the surface impoundments subject to the Phase IV rule will be "solid waste management units" (SWMUs) that are eligible for corrective action under § 3004(u) and (v), § 3008(h), § 7003, and other authorities, such as CERCLA § 106. These surface impoundments, as SWMUs, may or may not be undertaking ground water monitoring or corrective action when the Phase IV rule becomes effective. Similarly, certain states already require ground water monitoring or corrective action of surface impoundments, regardless of their status under RCRA Subtitles C or D. Further, some facilities affected by today's rulemaking may be conducting ground water monitoring and corrective action activities that are not required by a State or federal government.

As stated above, to the extent that state programs require ground water monitoring and corrective action that include the UTS constituents of concern (or are modified to cover those constituents) and are substantially similar to today's proposal (i.e., frequency of monitoring, requirements regarding ground water monitoring wells), EPA is deferring to those State and Tribal programs. However, EPA anticipates that many of these state or federal corrective action ground water monitoring programs will not require monitoring of all of the regulated constituents identified by facilities subject to today's rule. Owners or operators could need to modify existing ground water monitoring programs to add any UHCs (and their associated

ground water protection standards under 258.55(h)) that are not currently being monitored to avoid any of the potential Phase IV controls.

EPA also seeks comment on a ground-water monitoring approach not proposed in today's rule. As an alternative, facilities that are triggered into ground water monitoring under today's rule would be required to undertake a detection monitoring program under 258.54, rather than commence directly with an assessment program. The purpose of a detection monitoring program in the MSWLF rule is to detect releases by monitoring a set of constituents or parameters that provide a reliable indication of ground water contamination. In the MSWLF rule, Appendix I to Part 258 was developed as a list of organic and inorganic constituents that are likely to be found in the ground water if releases occur from a MSWLF. As stated earlier, EPA does not believe that this list is appropriate for the facilities that are subject to today's rulemaking, as they do not have the type and variety of wastes that are typically found in landfills. Under this alternate option, EPA would not require facilities under today's rulemaking to monitor for Appendix I Part 258 parameters under their detection monitoring programs. Instead, facilities would be required to monitor for indicator parameters (such as specific conductance, total organic carbon, or total organic halogen), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in ground water. If statistically significant levels were detected above background conditions of these indicator parameters, the facility would be required to undertake assessment monitoring, wherein the facility would analyze for the presence of UTS constituents, assess the potential for offsite releases, and initiate an assessment of corrective measures. This approach would shift the focus of the initial ground water monitoring program to the detection of releases, rather than the detection of site-specific UHCs that are regulated in today's rule. The MSWLF rule, under 258.54(1) and (2), lists several factors to allow an owner or operator to deviate from the Appendix I list under the approval of a state director. Under this alternative approach, facilities would establish an alternate list through self-implementation, rather than by state approval.

(iv) *Summary of specific requirements for ground water monitoring and corrective action from the MSWLF rule § 258.51 ground water monitoring*

systems.—This section requires ground water monitoring systems (if constituent levels in impoundments exceed certain levels) to meet certain requirements and design specifications. Systems are required to monitor both background water quality and ground water at the point of compliance.

§ 258.53 *Ground Water Sampling and Analysis.* This section requires that the owner/operator follow certain sampling and analysis procedures, including quality assurance and quality control, and specifies the number of samples taken and the statistical procedures to be followed.

§ 258.55 *Assessment Monitoring Program.* As discussed above, EPA is proposing to require that owners or operators that would be compelled to undergo ground water monitoring under today's rule bypass the MSWLF rule detection monitoring program and undertake assessment monitoring directly. The purpose of the assessment monitoring program in today's proposed rule would be to monitor ground water for the presence of site-specific regulated constituents determined to be present in the decharacterized wastestream at the point of generation, and to assess whether any statistically significant releases need to undergo corrective action. The assessment monitoring program contains requirements for sample number and determination of background for constituents, criteria for moving into corrective action and additional monitoring requirements under corrective action. This section also requires the owner/operator to establish ground water protection standards for each of the regulated constituents as follows: (1) If an MCL is available, the MCL is the ground water protection standard; (2) if there is no MCL, the background concentration is used as the ground water protection standard; and (3) if the background concentration is greater than the MCL, the background level is the ground water protection standard. The Agency believes that it may not be reasonable to require the owner or operator to reduce the concentrations of hazardous constituents below background. (See 56 FR 51087, October 9, 1991). Although background levels are not health-based standards, they are a practical measurement of what can be achieved by remediation and today's proposal would not preclude a State or other entity from requiring an owner or operator to clean up contamination below background levels where it is warranted. As noted earlier, specific federal (e.g., 3004(u) corrective action),

state, local, or tribal levels also could be used in lieu of these levels.

Furthermore, in light of the self-implementing nature of these specific standards for leaks for surface impoundments, the Agency is not adopting the provisions of 268.55(i) which address the site specific protection standards.

As discussed above, EPA will not require owner/operators under assessment monitoring to scan the ground water for constituents listed in Appendix II to Part 258. Instead, facilities will move directly to assessment of regulated constituents as required in § 258.56 if statistically significant levels of contaminants are found to exceed the ground water protection standard. More information on the required monitoring program can be found in "Technical Support Document—Options for Management Standards for Leaks, Sludges, and Air Emissions From Surface Impoundments Accepting Decharacterized Wastes" in the RCRA Docket.

§ 258.56 *Assessment of corrective measures.*—Within 90 days of finding that any of the regulated constituents have been detected at a statistically significant level exceeding the ground water protection standards, the owner/operator must undertake an assessment of corrective measures that addresses specified criteria.

As discussed above, today's rule would also introduce the new requirement into § 258.57 that once it is determined that corrective measures are necessary, the facility would be required to implement one of the following: (1) cease discharge of the decharacterized wastestream into the surface impoundment as soon as is practical (i.e., reroute decharacterized wastestream to a tank) or (2) installation of a double liner and leachate collection system.

§ 258.57 *Selection of remedy.* Based on the results of the assessment required by § 258.56, the owner/operator must select a remedy that meets several protectiveness standards. This section also requires that the owner/operator consider several evaluation factors when selecting a remedy and establish a schedule for initiating and completing the remedial activities. This section also allows for no remediation under enumerated circumstances, e.g., ground water is already contaminated by multiple sources and clean up of release would provide no significant reduction of risk. The Agency has determined that since these remediation waivers are not self-implementing, they will not be adopted as part of this proposal.

§ 258.58 *Implementation of the corrective action program.* This section requires that once a remedy is selected, the owner/operator must implement a corrective action program that demonstrates compliance with the ground water protection standards established under § 258.55. If necessary, the owner/operator must also take interim measures to protect human health and the environment. Other requirements in this section include implementing alternative methods or techniques for remediation if the selected remedy is not effective, and criteria for establishing when meeting the ground water protection standard cannot practicably be achieved.

5. Proposed Management Standards for Sludges

a. Scope. Under Option 2, the Agency would require management standards for sludges from prebiological surface impoundments in CWA, CWA-equivalent, or nonhazardous wastewater treatment systems that accept decharacterized wastes, when the sludges are removed from the impoundments for land disposal elsewhere. Data available to the Agency indicate that UHCs may be present in the decharacterized wastewaters and may be transferred to sludges in these impoundments at concentrations that pose a threat to human health and the environment. The Agency has limited data indicating biological or post-biological surface impoundment sludges do not pose significant risks when

disposed. Nor would the Agency expect significant concentrations of hazardous constituents to be present. A more detailed discussion of today's proposed rule can be found in the technical support document entitled, "Technical Support Document for Leaks, Sludges, and Air Emissions—Phase IV."

b. Rationale. The approach for sludges under this option is conceptually similar to that proposed for the ground water and air exposure scenarios. If sludges contain hazardous constituents in excess of levels that pose a risk to human health or the environment (see 976 F. 2d at 17), this form of cross-media transfer of hazardous constituents could be considered too excessive to allow the impoundment to be considered an equivalent form of treatment, unless the sludges were to be treated to remove that risk. Under this option, the evaluation would be made at the time sludges are removed from the impoundment, not while the sludges remain within an impoundment. This is because EPA does not believe in-place sludges would be a release pathway separate from the leaks pathway. Put another way, by controlling leaks (as explained in the previous section), any risks posed by sludges while in the impoundment should be accounted for. Consequently, any potential incremental risk would arise when the sludges are disposed elsewhere. (Cf. RCRA section 3005 (j) (11) indicating that treatment standards for hazardous sludges do not apply while sludges are in the impoundment, and thus apply only

when the sludges are removed and land disposed).

EPA is proposing the technology-based UTS as the benchmark for evaluating whether sludges are capable of posing significant risk. This approach could be replaced when the Agency develops risk-based levels through the Hazardous Waste Identification Rule process. In the interim, the UTS standards serve as the best available measure of when threats are minimized, and treatment to those levels certainly satisfies any requirement of equivalent treatment.

EPA also reiterates that, as a legal matter, it can be argued that even no treatment of sludges is equivalent to subtitle C LDR controls. This is because generation of sludges is usually a new point of generation at which the newly-generated waste is reevaluated to determine if it is subject to the LDR standards. If non-hazardous, the sludges would not be so subject (i.e., would not be prohibited wastes). See 55 FR 22661-62. Thus, literal application of an equivalence test would result in no treatment of these sludges, since the sludges will be non-hazardous wastes by definition (they cannot be hazardous wastes because they are being generated in subtitle D impoundments), and so would not require further treatment under the standard subtitle C approach.

c. Applicability. For a simplified guide to applicability criteria and management standards for sludges, see Figure 4.

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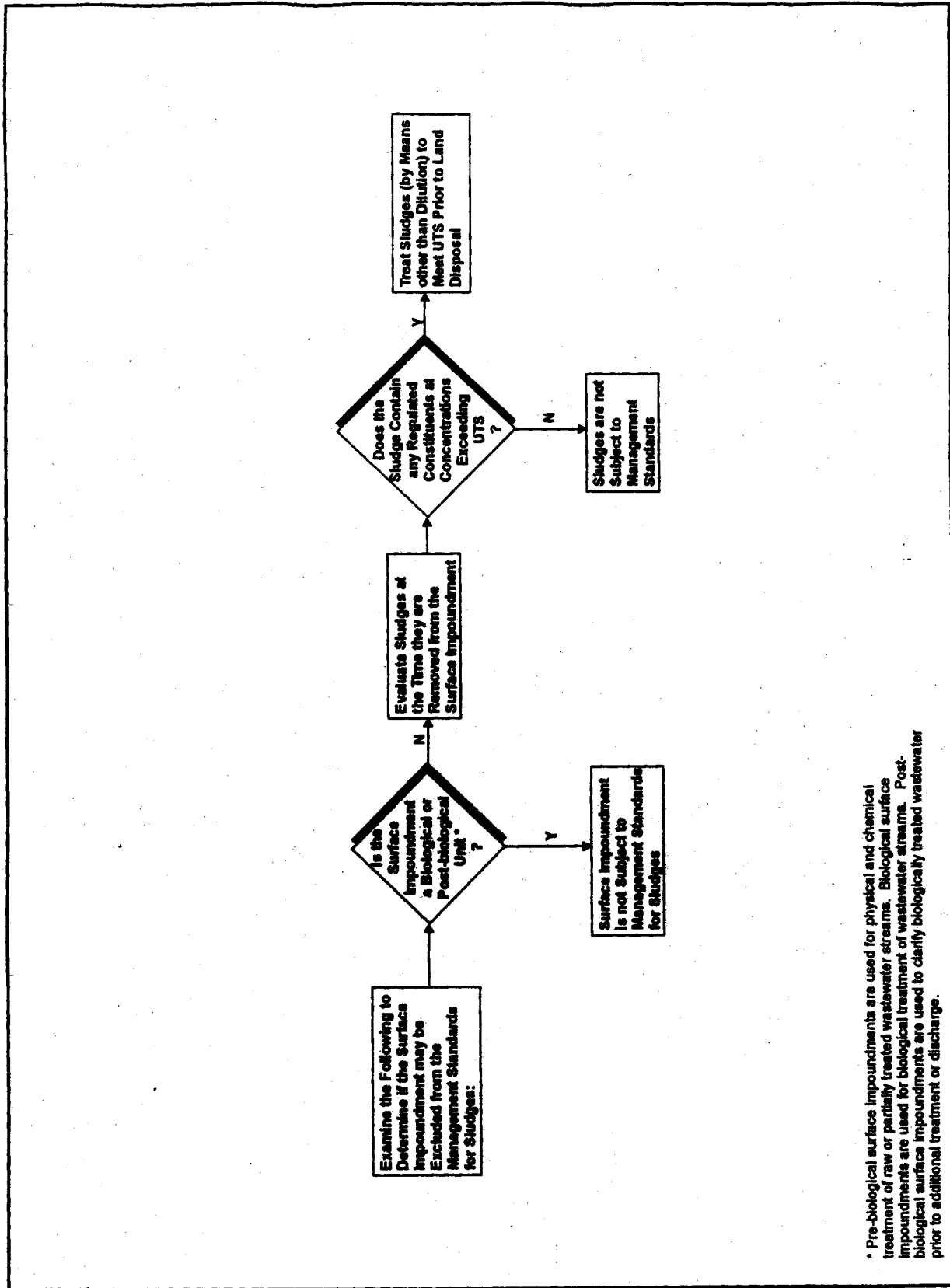


Figure 4: Option 2 - Applicability Criteria and Management Standards for Sludges

d. Determining UHC concentrations in surface impoundment sludges. The Agency would require sampling of the sludges removed from prebiological surface impoundments at the time the sludges are removed to determine if the concentrations of UHCs in the removed sludge exceed UTS. Representative sampling and analysis of the sludge need only be conducted for those UHCs identified in the characteristic wastewater at the point of generation. A more detailed discussion of representative sampling and analyses is provided in the technical support document entitled, "Technical Support Document for Leaks, Sludges, and Air Emissions—Phase IV."

e. Management standards. If the concentration level of one or more of the UHCs exceeds UTS, then the sludge must be treated by means other than dilution to meet UTS. If the surface impoundment will no longer be receiving decharacterized wastewaters, then the owner or operator would be required to conduct representative sampling of the sludges when sludges

are next removed from the impoundment. No further sampling of removed sludges would be required after decharacterized wastes are no longer received by the unit.

6. Recordkeeping Requirements for Leaks and Sludges

Under Option 2, the Agency would establish recordkeeping requirements for leaks and sludges. An owner or operator that utilizes surface impoundments in CWA, CWA-equivalent, or non-hazardous wastewater treatment systems to manage decharacterized wastes would have to maintain records of any test results, waste analyses, or other determinations for at least three years.

7. Sampling and Analysis

The Agency would like to point out that the sampling and analysis requirements are not overly burdensome. Owners and operators that would be affected by today's proposed Phase IV rules would only be required to perform a minimum number of

analyses. Generator knowledge could be used in lieu of sampling and analysis. See section I.D.3.c. for a discussion of what constitutes acceptable generator knowledge.

I. Option 3

A final option to address the potential problem of releases of hazardous constituents from decharacterized wastes in surface impoundments is to require that such wastes meet UTS for the UHCs before entering the impoundment (unless the impoundment satisfies Minimum Technology Requirements or the statutory no migration standard). A waste could be aggregated and diluted, but achievement of UTS for the hazardous constituents would have to be accomplished by mass removal/destruction before entering a surface impoundment. The pollution prevention compliance alternative and the *de minimis* exemption would be allowed for Option 3. For a simplified guide to Option 3, see Figure 5.

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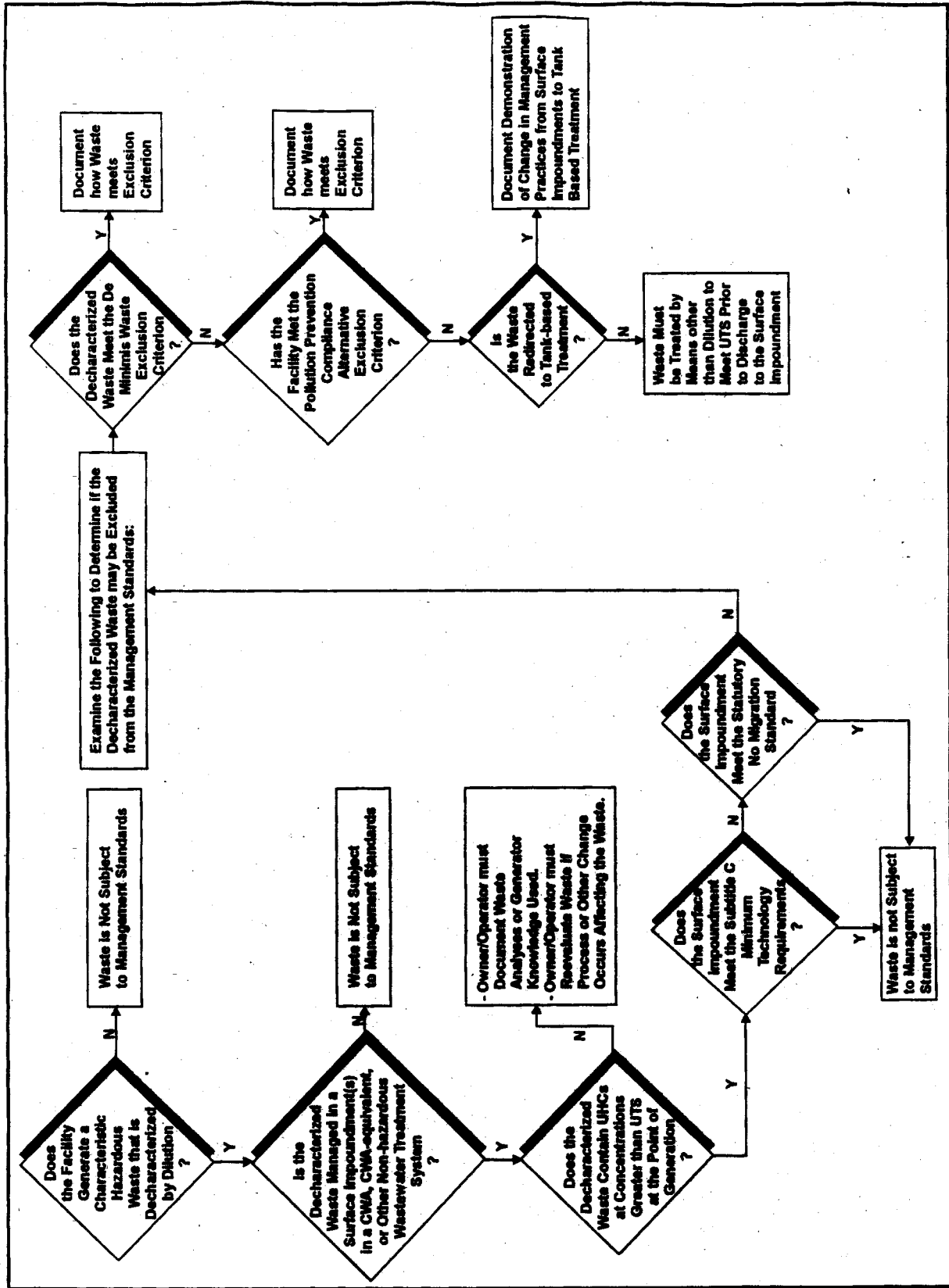


Figure 5: Option 3 - Applicability Criteria and Compliance Alternatives for Surface Impoundments Accepting Decharacterized Wastes

It should be noted that this option is already available as a means of complying with any of the requirements in Option 2. The question here is whether this should be the only alternative allowed. EPA's view is that it should not be the exclusive approach, for reasons of law and policy. This approach destroys the very accommodation between the CWA and RCRA upheld by the D.C. Circuit. It would invalidate impoundment-based treatment systems, even if such treatment systems can be shown to be equivalent to RCRA treatment within the meaning of the opinion. Since the court hinted that RCRA "requires" some accommodation with the CWA on this issue (976 F. 2d at 20), there is some question whether EPA even has the authority to mandate the approach. The Agency believes the approach unwise in any case, and has so stated in the Third rule itself as well as later discussions. Very simply, impoundment-based wastewater treatment systems can be effective means of treating decharacterized wastewaters, and can do so without undermining core values of RCRA and the LDR program. Consequently, such treatment should not be effectively invalidated by requiring all treatment of characteristic wastes to occur upstream of impoundments.

II. Proposal Not to Ban Nonamenable Wastes From Land-Based Biological Treatment Systems

Summary: EPA believes that prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are "amenable" to biological treatment is unnecessary at this time. Instead, EPA is proposing to prevent excessive environmental contamination of hazardous constituents that leave surface impoundments. Technical obstacles present another reason not to ban nonamenable wastes.

A. Background

The Environmental Technology Council (ETC) has suggested that EPA develop regulations restricting Subtitle D surface impoundment disposal of organic compounds and metals resistant to biological degradation in these units. The Chemical Manufacturer's Association (CMA) provided EPA with comments on ETC's suggested approach. These strategies focused on identifying those constituents which are relatively resistant to biological degradation in order to develop regulations setting maximum acceptable concentrations for these constituents in surface

impoundment influent. The Phase III proposed LDR rule summarizes the ETC and CMA positions, and discusses several technical issues (41 FR 11717). ETC's comment is included in the rulemaking docket for the Phase III proposal.

B. Rationale for Proposing Not to Ban Nonamenable Wastes From Biological Treatment Systems

EPA has carefully considered the policy and technical issues raised by the suggestion to ban nonamenable wastes from biological treatment impoundments. The Agency believes that the key issue of whether such impoundments serve as transfers of nonamenable constituents to air, leaks, sludges, or discharges to surface waters is best addressed by the Phase III end-of-pipe limits on constituents, coupled with the options in Section I of this preamble. The provisions in Phase III and Phase IV are designed to protect human health and the environment from hazardous constituents in surface impoundments, therefore, there is no need to regulate nonamenable wastes. Additionally, if constituents are not excessively migrating to ground water through leaks, to air through emissions, adsorbing onto sludge sediments, or being discharged at the end of pipe, then EPA can be reasonably certain that treatment in the impoundment is adequate.

Furthermore, EPA believes that the technical impediments to banning nonamenable wastes from biological treatment impoundments are significant. First, the design and operating conditions of biological treatment can vary widely. Second, the "amenability" of constituents at the point of generation may not reflect the ultimate amenability in the biological treatment system. Finally, variations in the influent stream composition, acclimation of the biomass, and the effect of other constituents add another level of uncertainty to the process of determining the amenability of a particular waste stream. These multiple uncertainties make an accurate assessment of amenability on the level of the stream or of the constituent extremely difficult.

III. Improvements to Land Disposal Restrictions Program

A. Clean Up of Part 268 Regulations

In today's rule, EPA is proposing to "clean up" existing regulatory language that is outdated, confusing, or unnecessary. Some sections are clarified, some have been condensed, while others are altogether removed.

Comments are solicited on the proposed changes that follow.

1. Section 268.4

Section 268.4(a)(2)(iv) would be changed to read, "*Recordkeeping*. The sampling, analysis, and recordkeeping provisions of §§ 264.13 and 265.13 apply." The existing language in § 268.4 duplicates the substantive requirements of §§ 264.13 and 265.13. Referencing the §§ 264.13 and 265.13 requirements in § 268.4 clarifies that there are no additional recordkeeping requirements at § 268.4; the general facility recordkeeping requirements apply, thus the LDR program does not add additional burden.

2. Section 268.5

Section 268.5(e) would be amended to clarify that an applicant could be granted additional time (up to one year) beyond the one-year case-by-case extension; when first applying for the case-by-case extension, the applicant would be required to show that the additional time (beyond the extension in the first year) would be necessary to provide capacity to treat the applicant's waste. Comments are requested on this issue.

3. Section 268.7

Much of the language specifying what must be included on LDR notifications at § 268.7 needs revision; therefore, this section is proposed to be rewritten to reflect changes, clarify the existing notification requirements, and generally simplify the requirements for generators of hazardous waste. The proposed changes in § 268.7(a) would result in renumbering of the paragraphs. The new numbering scheme for this section is used in this discussion. Also, the generator paperwork requirements are proposed to be consolidated into a table at § 268.7(a)(4), and the treatment facility requirements into a table at § 268.7(b)(4).

References in Part 268 to LDR treatment standards that have previously been found in tables in §§ 268.41, 268.42, and 268.43, are proposed to be changed to refer to the consolidated table in § 268.40—Treatment Standards for Hazardous Wastes.

References to § 268.32 and RCRA 3004(d), California List wastes, are removed, because the treatment standards for these wastes have been superseded by subsequent treatment standards.

In § 268.7(a)(3), the rule requires that to each receiving land disposal facility, a notification must go with each shipment of restricted waste that meets

the LDR treatment standards as generated. The notice must identify the waste and applicable subcategories, the manifest number, and other information, along with a certification statement saying that the waste meets the treatment standards. As a streamlining measure in today's rule, the Agency is proposing that when a generator whose waste meets the appropriate treatment standards, and the composition of these wastes or the process generating the waste does not change, then they are only required to submit a one-time notification and certification to the receiving facility. A copy of the notification and certification must be kept in the generator's file. If the waste changes, then the generator must send a new notice and certification to the receiving facility, and place a copy in their files.

In § 268.7(a)(5), if generators are managing prohibited wastes in tanks, containers, or containment buildings, they are required to submit a waste analysis plan to the EPA Regional Administrator or authorized State for their review of the testing plan. As a streamlining measure, EPA is proposing to delete the requirement that generators submit the waste analysis plans to States and Regions. Comments are requested on this issue.

The record retention time period in § 268.7(a)(8) is proposed to be changed from five to three years, in order to make LDR requirements consistent with other RCRA record retention periods.

The lab pack notification requirements of § 268.7(a)(8) are proposed to be streamlined to include only the requirements of §§ 268.7(a)(2), 268.7(a)(6), and 268.7(a)(7). This is possible because the alternative treatment standard for lab packs specifies a method of treatment rather than concentration levels that would have to be monitored after treatment. There is, therefore, no need to know whether the wastes in the lab packs are wastewaters or nonwastewaters or are hazardous debris (these are data items proposed to be deleted from the lab pack notification). The Agency solicits comments on this assumption.

In § 268.7(b), the first sentence—Treatment facilities must test * * * as required by § 264.13 or § 265.13—is proposed to be clarified so that it is more obvious that § 264.13 contains the requirements for permitted treatment, storage and disposal facilities and § 265.13 contain the requirements that apply to interim status facilities.

In addition, the sentence, “* * * test method described in appendix I of this part or using any methods required by generators under § 268.32 of this part

* * *” is changed to read, “* * * test method described in ‘Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,’ EPA Publication SW-846.” Specific reference to EPA Publication SW-846 for the Toxicity Characteristic Leaching Procedure gives the regulated community a more direct reference for details of the test method. Furthermore, the Agency is proposing to add a table that more clearly indicates the items to be included on notifications under this section, and is changing all references to §§ 268.41, 268.42, and 268.43 to refer to the Table of Treatment Standards in § 268.40.

In section 268.7(c)(2), the sentence, “* * * test method described in appendix I of this part or using any methods required by generators under § 268.32 of this part * * *” is changed to read, “* * * test method described in ‘Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,’ EPA Publication SW-846.” Specific reference to EPA Publication SW-846 for the Toxicity Characteristic Leaching Procedure gives the regulated community a more direct reference for details of the test method.

6. Section 268.9

In section 268.9, paragraphs (a), and (b) are proposed to be revised to clarify how wastes should be identified when they are both listed and characteristic wastes. The revisions do not propose any substantive changes to these paragraphs. The existing regulations require that for the LDR notification, a waste must be identified as a listed waste and also as a characteristic waste unless the listed waste has a treatment standard for the constituent or addresses the hazardous characteristic that causes the waste to also be characteristically hazardous. If the listed waste has treatment standards that address all characteristics, then the characteristic waste codes do not attach.

In paragraph (d)(1)(ii), the language has been edited to clarify that if all underlying hazardous constituents reasonably expected to be present in a characteristic waste will be monitored, then the generator need not list any of them on the LDR notification. If, however, a subset of underlying hazardous constituents will be monitored, they must be included on the LDR notification. This is not a substantive change, because such language was already placed in 40 CFR 268.7(a) in the technical correction to the Phase II final rule (60 FR 245, January 3, 1995).

5. Sections 268.30–268.37

Sections 268.31–268.37 are proposed to be removed because the treatment standards for wastes in these sections are now in effect, thus all these wastes are now prohibited from land disposal. The sections are, thus, no longer needed and are proposed to be removed. Old § 268.30 is proposed to be replaced by a new section that provides the prohibition dates of the wastes included in this proposed rule.

6. Appendices

Appendix I is proposed to be removed and reserved because the TCLP test method reference to SW-846 will be incorporated into the text of the regulatory language.

Appendix II to Part 268 is also proposed to be removed and reserved because it incorrectly refers to treatment standards in §§ 268.41, 268.42, and 268.43 (they are now in § 268.40); furthermore, there is no longer a need for a reference to the solvent treatment standards.

Appendix III is proposed to be removed and reserved because the California List treatment standards have been superseded by Universal Treatment Standards, thus there is no need for a listing of halogenated organic compounds because they are California List wastes.

Appendix VI is proposed to be amended to clarify that characteristic wastes that also contain UHCs must be treated not only by a “deactivating” technology to remove the characteristic, but also treated to achieve the UTS for UHCs.

Appendix VII is proposed to be removed and reserved because all the wastes in the table have treatment standards now in effect, thus there is no need to know the effective dates, waste by waste. Likewise, Appendix VIII is proposed to be removed and reserved because the effective dates for these wastes when injected into deep injection wells are past, thus are no longer needed.

Appendix IX is proposed to be removed because as of the Phase IV rule, all characteristic metal treatment standards are based on toxicity using the TCLP rather than the Extraction Procedure (EP). There is no longer any need for a reference to the EP.

Appendix X is proposed to be removed and reserved because it summarizes paperwork requirements that are proposed to be changed in the Phase III proposal and this proposal. Furthermore, if the Agency finalizes the paperwork tables discussed in this section of the preamble in §§ 268.7(a)

and 268.7(b), there is no need for summary tables in the appendix.

The Agency is committed to identifying new ways the LDR program can be simplified, and will continue to seek additional opportunities for such streamlining efforts in the future.

B. Simplification of Treatment Standard for Waste Code F039

Summary: Today's proposal simplifies the presentation of the treatment standard for multisource leachate, which is waste code F039.

Discussion: With the promulgation of the Universal Treatment Standards (UTS) in the Phase II rule (59 FR 47982), there is no longer a need for the separate list of constituents for F039 which currently appears in the table titled "Treatment Standards for Hazardous Wastes" at 40 CFR 268.40. EPA proposes that F039 meet all the UTS for the constituents at § 268.48, with the exceptions of fluoride, vanadium, and zinc. In other words, while F039 remains the waste code for leachate from hazardous waste disposal facilities, the treatment standards for wastewater and nonwastewater forms of individual constituents now reference the UTS (§ 268.48), with the exceptions of fluoride, vanadium, and zinc.

C. POLYM Method of Treatment for High-TOC Ignitable D001 Wastes

Summary: EPA proposes to add polymerization (POLYM) to the set of required methods of treatment designated Best Demonstrated Available Technology (BDAT) for high-TOC ignitable (D001) wastes resulting from commercial polymerization processes.

Discussion: Polymerization (POLYM) processes convert deactivated waste into a chemically stable plastic in the same manner that commercial plastics were formed with the reagent which is being disposed of as a high-TOC D001 waste.

The National Marine Manufacturer's Association contacted EPA with concerns that the May 1993 Interim Final Rule (58 FR 29860) prohibited the practice of polymerizing excess polyester/styrene waste left over from the manufacture of modular shower stalls and recreational boats. The prohibition was actually established in the 1990 Third Third (55 FR 22520). In these manufacturing processes polyester/styrene reacts with methyl ethyl ketone peroxide in a mold to form fiberglass. The ignitable waste polyester/styrene and MEK peroxide are the wastes of concern.

Waste polyester/styrene monomers and MEK peroxide are commonly disposed of by reacting small quantities together to create fiberglass scraps. The

waste polyester/styrene monomers and MEK peroxide are currently regulated as high-TOC ignitable wastes for which the current standard is treatment by CMBST (combustion) or by RORGS (recovery of organics) before land disposal. Neither CMBST nor RORGS allows for polymerization of high-TOC ignitable wastes into inert materials which do not exhibit any characteristics of toxicity, ignitability, corrosivity or reactivity. The Agency believes that the ongoing practice of polymerizing characteristic wastes to a noncharacteristic inert mass adequately protects human health and the environment.

Today's rule proposes POLYM as an alternative to CMBST or RORGS for those high-TOC D001 wastes which are chemical components in the manufacture of plastics. POLYM requires the addition of a polymerizing component or catalyst to the discarded high-TOC D001 monomer stream intended for land disposal. POLYM is defined as "Formation of complex high-molecular weight solids through polymerization of monomers in high-TOC D001 nonwastewaters." The Agency notes that the accumulation time provisions for on-site storage of hazardous waste in tanks (40 CFR 262.34) allow facilities to store waste monomers and catalysts up to 90 days after the ignitable components are discarded provided that these wastes are kept in adequate tanks. (40 CFR 262.34(a)(1)(ii)).

IV. Exclusion for Recycled Wood Preserving Process Wastewaters

Summary: In response to wood preserving industry concerns that production wastewaters being reclaimed are improperly classified as solid waste under RCRA Subtitle C, EPA is providing an opportunity for the industry to supply information that could potentially form the basis for an industry-wide variance.

Discussion: EPA has recognized that certain wastes from wood preserving and surface protection, most notably drippage, are reclaimed and then returned to the wood preserving process for reuse (see 53 FR 53311). The Agency received numerous comments to its proposed wood preserving rule claiming that waste recycling and reuse practices at wood preserving and surface protection plants should be excluded from the definition of solid waste.

In its December 6, 1990 wood preserving listing, EPA rejected that claim. The Agency stated that the current regulations correctly classify drippage and wastewaters from the wood processing industry destined for reclamation as solid waste since the

capture and conveyance mechanisms used in the operation do not meet the terms of the § 261.4(a)(8) closed-loop exclusion (see 53 FR 50460). While rejecting any broad attempt to exclude these wastes from the definition of solid waste, the Agency did point out a variance provision in the regulations, § 260.30 and § 260.31(b), that could apply to the wood preserving industry. The provision allows for variances to be granted on a case-by-case basis to individual facilities, provided that an EPA Regional Administrator or authorized State Director makes a determination that a particular reclamation operation is an essential part of the production process, taking into account a number of criteria, including how carefully the material is handled before it is reclaimed (see 53 FR 50460).

The Agency's rationale for creating the § 260.30 and § 260.31(b) variance was that it may be inappropriate to regulate a reclamation process under RCRA when the process is an essential part of production, assuming the secondary materials being reclaimed are not part of the waste disposal problem. Section 260.31(b) lists a number of criteria to be considered by a regulator when determining whether a reclamation operation meets the terms of this provision. Although this variance was originally intended to be granted on a case-by-case basis, if these criteria can be demonstrated on an industry-wide basis, EPA will consider a conditional exclusion. Comments are requested on the extent to which the reclamation of production wastewaters from the wood preserving industry meet the criteria found in § 260.31(b).

Section 260.31(b)(3), which requires the regulator to take into account "the extent to which the material is handled before reclamation to minimize loss," is of particular interest in evaluating this reclamation operation. In the wood preserving industry, this would certainly apply to releases from a drip pad, clearly a waste and clearly a potential part of the waste management problem (damage cases described in 53 FR 53323), and the extent to which such releases could be prevented. It appears that prevention of drip pad releases could be adequately achieved through compliance with 40 CFR 264, Subpart W (drip pads). EPA is interested in receiving comments on any alternative and perhaps better ways that the industry might meet the § 260.31(b)(3) standard.

As part of an ongoing effort to revise the current definition of solid waste, EPA is taking a close look at the regulations for on-site recycling. In the

meantime, we are willing to consider quicker action on wood processing production wastewaters, provided we receive adequate information to make an industry-wide determination that the reclamation operation is an essential part of production and that the secondary materials being reclaimed are not likely to be a part of the waste disposal problem.

V. Treatment Standards for Newly Listed and Identified Wastes

A. Background

The Hazardous and Solid Waste Amendments (HSWA) to RCRA, which were enacted on November 8, 1984, largely prohibit the land disposal of untreated hazardous wastes. RCRA requires EPA to promulgate treatment standards for a waste within six months after determining it is hazardous (RCRA section 3004(g)(4)).

The Agency did not meet this latter statutory deadline for all of the wastes identified or listed after the 1984 amendments. As a result, a suit was filed by the Environmental Defense Fund (EDF). EPA and EDF signed a consent decree that establishes a schedule for adopting prohibitions and treatment standards for newly identified and listed wastes. (*EDF v. Reilly*, Cir. No. 89-0598, D.D.C.). Today's notice proposes treatment standards for two of those waste groups: wood preserving wastes and metal wastes that are considered hazardous under the revised Toxicity Characteristic (TC).

B. Treatment Standards for Soil Contaminated With Newly Listed Wastes

The Agency has stated a presumption that the treatment standards for as-generated wastes are generally inappropriate or unachievable for soils contaminated with hazardous wastes, within the meaning of 40 CFR 268.44(a) (see 55 FR 8759-60, March 8, 1990). It has been the Agency's experience that contaminated soils are significantly different in their treatability characteristics from the wastes that have been evaluated in establishing the BDAT standards, and thus, will generally qualify for a treatability variance under 40 CFR 268.44. For guidance on treatability variances for soils, see the EPA Fact Sheet entitled "Regional Guide: Issuing Site-Specific Treatability Variances for Contaminated Soils and Debris from Land Disposal Restrictions" (OSWER Publication 9839.3-08FS). For RCRA actions, the Regional Administrator was delegated the authority to deny or grant these variances in a non-rulemaking

procedure under 40 CFR 268.44(h) on April 22, 1991. These variances may be granted by State agencies in States authorized for § 268.44. Variance authority for CERCLA actions is discussed in LDR Guides 6A (revised Sept. 1990) and 6B (OSWER 9347.3-06FS and 9347.3-06BFS).

EPA is proposing a national capacity variance for soil and debris contaminated with Phase IV newly listed wastes. If the capacity variance is made final, any site-specific treatability variance would not be necessary during the period the capacity variance is in effect.

C. Treatment Standards for Wood Preserving Wastes²

Summary: NEPA is proposing to apply Universal Treatment Standards (UTS) to wood preserving wastes (F032, F034, and F035).

1. Identification of Wastes

F032—Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations.³

F034—Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations.

F035—Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium.

Wastes from the wood preserving industry, F032, F034, and F035, were listed as hazardous on December 6, 1990, (see 55 FR 50450). EPA is proposing to regulate specific constituents from each of these hazardous wastes groups. (A list of the hazardous constituents proposed for regulation are found within the Table at the end of this preamble discussion.) These wastes are generated during the treatment or preservation of wood products such as poles, crossarms, timbers, rail road ties, and fence posts. Pentachlorophenol, creosote, and inorganic arsenical and/or chromated salts are the primary active ingredients that are used to preserve wood products.

²These listings do not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.

³This treatment standard would apply except where potentially cross-contaminated wastes have had the F032 waste code deleted in accordance with section 40 CFR 261.35 and where the generator does not resume or initiate use of chlorophenolic formulations.

The application of these chemicals generate wastewaters, process solid residuals, preservative drippages, and spent formulations. The listing document for F032, F034, and F035 provides additional information on the processes generating each of these wastes.

2. Proposed Treatment Standards

After reviewing the available characterization data on untreated and treated wastes that are believed to be at least as difficult to treat as F032, F034, and F035, EPA has determined that UTS are technically achievable for the constituents proposed for regulation in F032, F034, and F035. (The BDAT background document provides information on EPA's rationale for developing and applying UTS to these wastes. Also see LDR Phase II final rule, 59 FR 47982, September 19, 1994, for further discussion of UTS.) EPA is thus proposing that each constituent proposed for regulation in F032, F034, and F035 comply with its applicable UTS in the treatment standard table at 40 CFR 268.40, as a prerequisite for land disposal.

EPA believes that this proposal is consistent with EPA's efforts to ease compliance burdens by setting one treatment standard for the same regulated constituent in various wastes. Wood preserving facilities currently manage these hazardous wastes at commercial hazardous waste management facilities that manage wood preserving wastes as well as other hazardous wastes prohibited from land disposal. These commercial treatment facilities will likely commingle wood preserving wastes with other similar wastes in treatment trains that achieve UTS. Furthermore, the data available on the treatment of wastes believed to be as difficult, or more difficult, to treat as F032, F034, and F035 support the achievability of UTS.

3. Review of Available Characterization Data

EPA has reviewed available characterization data on F032, F034, and F035 from documents supporting the listing of these wastes as hazardous. EPA has also used additional data gathered by EPA on F035 during 1991 (EPA's 1991 study), which include data on untreated and treated F035 wastes (with the exception of one study that describes the bench scale treatment of a CCA formulation believed to simulate the treatment of F035 wastewaters) from three wood preserving facilities; from untreated and treated F035 wastes commingled at a hazardous waste treatment facility prior to their

stabilization with lime and cementitious agents; from an EPA in-house treatability study of F035 via stabilization with lime, fly ash, and cementitious agents; and, from an EPA in-house feasibility study to selectively remove arsenic, chromium, and copper from a synthetic simulated F035 wastewater.

Other literature consulted includes EPA's *Preliminary Data Summary for the Wood Preserving Segment of the Timber Products Processing Point Source Category*, September 1991 (EPA 440/1-91/023) (referred to here as the 1991 Preliminary Data Summary of the Wood Preserving Industry (1991 PDSWPI)). Other documents reviewed include 1986-1990 summary abstracts on the treatment of F032, F034, and F035 contaminated soils at Superfund sites, other literature published on the treatment of wood preserving and petroleum refining contaminated soils, and data submitted by commenters on the Advanced Notice of Proposed Rulemaking of October 21, 1990 (ANPRM) (see 56 FR 55160) and the LDR Phase II rule of September 19, 1994 (59 FR 47980).

4. Determination of Best Demonstrated Available Technology (BDAT)

a. Nonwastewaters. For nonwastewater forms of F032 and F034, the proposed treatment standards of each of the organic constituents are based on the combustion of wastes believed to be as difficult, or more difficult, to treat as F032 and F034. For metals in nonwastewater forms of F032, F034, and F035, EPA has determined that stabilization is BDAT for chromium (total), and that vitrification is BDAT for arsenic.

b. Wastewaters. For wastewater forms of F032 and F034, the proposed UTS for each organic constituent are based on treatment technologies such as biological treatment, steam stripping, carbon absorption, or by a train of two or more wastewater treatment technologies. The proposed treatment standards for metals in wastewater forms of F032, F034, and F035 are based on lime addition followed by sedimentation, and filtration for arsenic and in chemical precipitation followed by sedimentation for chromium. Like chromium, copper, lead, and zinc are also amenable to chemical precipitation followed by filtration.

EPA believes that the treatment technologies supporting the proposed UTS are also BDAT for F032, F034, and F035. This is because they are demonstrated for wastes as difficult or more difficult, to treat. EPA also believes that none of the hazardous

constituents in F032, F034, and F035 are likely to interfere with the treatment of the constituents proposed for regulation. In addition, EPA reviewed the performance of other thermal and non-thermal treatment or recovery technologies demonstrated on wastes similar to F032, F034, and F035. EPA believes that these other technologies can reach or can be optimized to meet the proposed UTS limits. Therefore, the Agency is not prohibiting the use of other technologies capable of achieving the proposed treatment standards except for those constituting land disposal or impermissible dilution.

5. Proposed Regulation of Dioxin and Furan Constituents in F032

EPA has found in F032 homologues of polychlorinated di-benzo-p-dioxins (PCDDs) and polychlorinated di-benzofurans (PCDFs). These homologue-isomers are a result of impurities from formulations that employ chlorophenolic chemicals such as pentachlorophenol (PCP) and other chlorinated aromatic hydrocarbons. EPA is proposing treatment standards that would require meeting a concentration that does not exceed 1 ppb (also expressed as ug/kg) for all the PCDD and PCDF homologue and isomer constituents proposed for regulation. EPA also requests data on the treatment of these constituents.

Commenters to the ANPRM of April 1991, were concerned that the selection of PCDD and PCDF as hazardous constituents in nonwastewater forms of F032 could result in commercial treatment facilities refusing to manage F032 wastes due to public sensitivities about these chemicals. Some commenters urged EPA not to regulate PCDD and PCDF but rather, to regulate surrogate constituents such as pentachlorophenols, gross parameters such as total suspended solids and oil and grease levels, or precursor constituents of PCDD and PCDF such as "hexachlorobenzene, 1,2,4-trichlorobenzene, and 1,2,4,5-tetrachlorobenzene". Only one commenter, however, submitted data on the use of alternate constituents. The data consisted of the influent characterization data for wastewaters treated via biological treatment and the end-of-pipe treated effluents. The data did not include the concentrations of PCDD and PCDF that were achieved in the biosludges and end-of-pipe treated wastewater effluents; thus EPA is unable to determine how the monitoring of alternative constituents or gross parameters can ensure the destruction of PCDD and PCDF constituents.

Other commenters requested that EPA defer or forgo the regulation of PCDD and PCDF in F032. They believe that regulation of other hazardous constituents in F032 will provide PCDD and PCDF with adequate treatment. No data were provided to support these statements.

EPA believes that the regulation of PCDD and PCDF is necessary to ensure their destruction. PCDD and PCDF are relatively insoluble in wastewaters. Because they tend to adhere to suspended particles, they may go untreated through wastewater treatment systems. Also, PCDD and PCDF can be solubilized in oils, and thus may go untreated through biological treatment systems. In contrast, EPA has data from the combustion of hazardous wastes and soils which shows that the combustion of PCDD- and PCDF-constituents wastes in two stage combustion devices leaves behind incineration ash and other residues with PCDD and PCDF levels below 1 ppb. Other performance data include residues from other thermal destruction devices such as supercritical oxidation (Hubber Process) and infrared incineration (Shirco reactor).

Another consideration in proposing regulation of PCDD and PCDF is that F032 can potentially contain concentrations of up to 300 ppb in wastewaters and between 1 ppb to 140,000 ppb in nonwastewaters. These concentrations become more significant if they are allowed to go untreated in non-thermal treatment technologies such as separation and filtration. EPA has identified one commercial facility currently permitted to combust wastes that may have PCDD and PCDF constituents with concentrations one to two orders of magnitude higher than those levels found in F032.

For nonwastewater forms, the proposed treatment standards are based on the performance of combustion. For wastewater forms, the proposed treatment standards are based on the performance of biological treatment. As mentioned earlier, other aggressive oxidation technologies such as infrared incineration (Shirco process), supercritical oxidation (Hubber process), and pyrolytical destruction devices can also achieve the proposed treatment standards. EPA requests comments on the use of non-thermal treatment technologies that have been optimized to treat PCDD and PCDF in wastes as difficult to treat as F032. In particular, EPA requests comments on whether non-thermal technologies such as chemical dechlorination via the use of the Alkaline Polyethylene Glycolate (APEG or KPEG) process or the Based Catalyzed Decomposition process and

ultraviolet (uv) photolysis are also capable of achieving limits at or below the proposed UTS limits for dioxins and furans in wastewater and

nonwastewater forms of F032. EPA has been testing the applicability of the BCD Process and APEG on various chlorinated wastes and contaminated

soil, and wood preserving wastes. EPA expects to make the results of the BCD treatability studies available to the public in the fall of 1995.

PROPOSED BDAT STANDARDS FOR F032, F034, F035
[Wastewaters and nonwastewaters]

Constituent	Wastewaters maximum for any 24 Hr. composite	Nonwastewaters maximum for any grab sample	Constituents proposed for regulation		
			F032	F034	F035
	Total composition (mg/l)	Total composition (mg/kg)			
Phenols:					
Phenol	0.039	6.2	x		
2,4-Dimethylphenol	0.035	14.0	x		
2,4,6-Trichlorophenol	0.035	7.4	x		
2,3,4,6-Tetrachlorophenol	0.035	7.4	x		
Pentachlorophenol	0.089	7.4	x		
PAHs:					
Acenaphthene	0.059	3.4	x	x	
Anthracene	0.059	3.4	x	x	
Benz(a)anthracene	0.059	3.4	x	x	
Benzo(a)pyrene	0.061	3.4	x	x	
Benzo(k)fluoranthene	*0.11	*6.8	x	x	
Chrysene	0.059	3.4	x	x	
Dibenz (a,h) anthracene	0.055	8.2	x	x	
Fluorene	0.059	3.4	x	x	
Indeno(1,2,3-c,d)pyrene	0.0055	3.4	x	x	
Naphthalene	0.059	5.6	x	x	
Phenanthrene	0.059	5.6	x	x	
Pyrene	0.067	8.2	x	x	
Dioxins and Furans:					
Tetrachlorodibenzo-p-dioxins	0.000063	0.001	x		
Pentachlorodibenzo-p-dioxins	0.000063	0.001	x		
Hexachlorodibenzo-p-dioxins	0.000063	0.001	x		
Tetrachlorodibenzofurans	0.000063	0.001	x		
Pentachlorodibenzofurans	0.000035	0.001	x		
Hexachlorodibenzofurans	0.000063	0.001	x		
Inorganics:					
Arsenic	1.4	5.0	x	x	x
Chromium (total)	2.77	0.86	x	x	x

* Because Benzo(b)fluoranthene and Benzo(k)fluoranthene coelute on gas chromatography columns, this constituent is regulated as a sum of the two compounds.

D. Treatment Standards for Toxic Characteristic Metal Wastes

1. Rationale for Applying Universal Treatment Standards (UTS) to Toxic Characteristic Metal Wastes (D004-D011)

In the Third Third LDR Rule (55 FR 22520), EPA established treatment standards for the metal wastes that were characteristic by the Extraction Procedure (EP) test. Since promulgation of the TC rule in September 1990, the Toxic Characteristic Leaching Procedure (TCLP) is used to determine whether a metal waste is characteristic. Wastes that are characteristic by the TCLP but not by the EP are considered newly identified wastes and are not currently subject to the land disposal restrictions. Today, EPA is proposing to apply treatment standards to all characteristic metal wastes. In addition, the Agency is

proposing to change the treatment standard levels for characteristic metal wastes from those established in the Third Third rule at the characteristic levels to previously promulgated UTS levels for metal constituents. Furthermore, when promulgated, the characteristic metal wastes must be treated not only to meet today's proposed treatment standards, but also to meet treatment standards for any UHCs reasonably expected to be present in those wastes at the point of the wastes' generation. This approach is consistent with the promulgated requirements for other characteristic wastes (D012-D043) (see 59 FR 47982 September 19, 1994).

EPA promulgated the UTS for organic, metal, and cyanide constituents on September 19, 1994 (see 59 FR 47982). The UTS eliminated differences in concentration limits for the same

constituent in order to provide a better assessment of treatability, to reduce confusion, and to ease compliance and enforcement. (The complete table of UTS is located at 40 CFR 268.48 and the levels have been incorporated in the treatment standard table at § 268.40.) The UTS replaced the existing metal constituent treatment standards for all listed wastes, and constituted applicable levels for underlying hazardous metal constituents (metal UHCs) in ignitable, corrosive and TC organic wastes. As explained above, they did not apply to TC waste codes D004-D011, nor did they replace the treatment standards promulgated in the Third Third rule for EP metals.

EPA performed a comprehensive reevaluation of the available treatment performance data from both listed and characteristic wastes for all metal constituents in the UTS table in order to

determine whether the metal UTS levels are appropriate to transfer to TC metals. The Agency has determined that a transfer of UTS is appropriate based on treatment levels achieved for the characteristic wastes and the metal concentrations in untreated wastes used for UTS being more highly contaminated than the characteristic wastes. Some of the historic data on treatment of characteristic wastes simply reflects a design to remove the characteristic, not a true measure of the treatability by stabilization and HTMR (see "BDAT Background Document for Toxicity Characteristics Metal Wastes D004-D011)" in the RCRA docket). EPA is proposing that the metal UTS are the LDR treatment standards for characteristic metal wastes. This means, in effect, that most of the metal treatment standards are proposed to be changed, however, a few treatment standards are not. Tables at the end of this section provide the old level, the new level, and whether or not the treatment standard is proposed to be changed.

The UTS for metal nonwastewaters can be achieved by high temperature metals recovery (HTMR) or stabilization. HTMR is a common technology for the extraction and recovery of metals from complex matrices. HTMR is based primarily on pyrometallurgical separation principles. HTMR has been demonstrated to be applicable to almost all metals in a relatively wide variety of matrices. This is primarily due to the thermodynamic and kinetic reactivity of these metals (and other inorganics present) at the high temperatures and oxidation states in the unit. Depending on the type of HTMR unit and the temperatures utilized, nonwastewater residues that would be classified as slags, are likely to be produced.

Conventional stabilization technologies include cementitious and pozzolanic stabilization with the potential addition of specialized reagents for the enhancement of structural stability, curing time, and/or reduced leachability. The reduction in leachability of the hazardous metal constituents of the wastes is accomplished by the formation of a lattice structure (i.e., chemical bonds) that binds or entraps the metals in a solid matrix. Before addition of the stabilizing agents, the forms of the metals in the wastes need to be identified. Often pretreatment involving chemical conversion of the metals in the wastes

to a more favorable oxidation state or to a different metallic salt must be performed or the stabilization could be relatively ineffective or incomplete.

2. Proposed Revision of UTS for Beryllium

In today's rule, EPA is proposing to change the UTS for beryllium to 0.04 mg/l TCLP. After UTS were promulgated, additional data on TC metals were submitted to the Agency. These grab sample data were from a HTMR facility and were comprised of 480 data points from their in-house metal treatment processes. These data were submitted as "Confidential Business Information." While UTS nonwastewater limits for metals specify a grab sample, the data used to develop the standards included both grab and composite samples. These data demonstrated HTMR could not necessarily achieve the limits using grab samples. Out of the 40 data points for beryllium, five exhibited levels exceeding the UTS level of 0.014 mg/l TCLP. A log-normal statistical analysis, based on QA/QC Methodology, was performed on these beryllium data points. Based on this analysis, the Agency is proposing to modify the beryllium UTS level to 0.04 mg/l TCLP. The Agency believes that this proposed level provides assurance that metal nonwastewater standards can comply with UTS using grab samples.

The Agency also reevaluated the new cadmium data submitted. Based on a log-normal statistical analysis the cadmium data, the UTS level of 0.19 mg/l TCLP is essentially at the 99th percentile. The Agency, therefore, does not see a need to modify this standard and is not proposing a change in the previously promulgated cadmium UTS level. However, due to the two data exceedances out of the 40 data point samples submitted, the Agency is soliciting further data.

The issue of grab versus composite sampling has been raised as needing clarification. As previously promulgated, these metal treatment standards specify grab samples. If grab sampling creates inconsistencies in achieving UTS levels for a treatment process, the facility should evaluate its process and submit data to EPA in support of their treatment process (40 CFR 268.41 and 55 FR 22539 June 1, 1990). The use of grab versus composite standards does not mean more frequent sampling is necessary. Grab samples

normally reflect maximum process variability, and thus will reasonably characterize the range of treatment system performance. The sampling analysis for both wastewater and nonwastewater is composite and grab respectively (40 CFR 268.41 and 268.43).

3. Treatment Standard for Previously Stabilized Mixed Radioactive and Characteristic Metal Wastes

Some radioactive wastes which exhibit a hazardous characteristic for a metal have been stabilized to meet the existing LDR standards, but may not be land disposed until after Phase IV is finalized. Such circumstances could result in treated wastes not meeting the revised standards. For example, as part of the West Valley Demonstration Project, approximately 21,000 drums of mixed radioactive/formerly metal characteristic wastes have been stabilized to meet the current LDR treatment standards for metals.) The wastes at the West Valley site are being stored awaiting development of disposal capacity. Because of siting difficulties for radioactive wastes, it is expected to take more than three years to develop disposal capacity. There is a good possibility that when these treated wastes are disposed, the Phase IV final rule will be in effect and the metal portion will be subject to the more stringent Universal Treatment Standard levels. If this were the case, the wastes would require re-treatment to achieve UTS prior to disposal. Such a practice would present significant risks. Opening the drums and grinding the already treated mass of stabilized waste to re-treat could expose workers, and possibly others, to unacceptable levels of metal containing dusts and radioactivity.

The Agency believes the prior stabilization of such wastes achieves the statutory minimized threat standard, and to require re-treatment would not only minimize threat, but could increase it. Therefore, the Agency is proposing to allow characteristic metal mixed wastes, that have undergone stabilization prior to the effective date of the Phase IV final rule, to comply with the LDR metal standards that were in effect at the time the waste was stabilized. Mixed radioactive/characteristic metal wastes that are stabilized after the effective date of Phase IV would be subject to the metal treatment standards in the Phase IV rule.

PROPOSED CHANGES FOR TC METALS (NONWASTEWATER) (D004–D011)

TC metal	Old TC level (mg/l TCLP)	New UTS level (mg/l TCLP)	N.C.=no change
Arsenic (D004)	5.0	5.0	N.C.
Barium (D005)	100	7.6	
Cadmium (D006)	1.0	.19	
Chromium (Total) (D007)	5.0	.86	
Lead (D008)	5.0	.37	
Mercury-retort residues (D009)	0.20	.20	
Mercury—all others (D009)	.20	.025	
Selenium (D010)	1.0	.16	
Silver (D011)	5.0	.30	

PROPOSED CHANGES FOR TC METALS (WASTEWATERS) (D004–D011)

TC metal	Old TC level (mg/l TCLP)	New UTS level (mg/l)	N.C.=no change
Arsenic (D004)	5.0	1.4	
Barium (D005)	100	1.2	
Cadmium (D006)	1.0	.69	
Chromium (Total) (D007)	5.0	2.77	
Lead (D008)	5.0	.69	
Mercury-retort residues (D009)	.20	NA	
Mercury—all others (D009)	.20	.15	
Selenium (D010)	1.0	.82	
Silver (D011)	5.0	.43	

VI. Mineral Processing Waste Issues

EPA is planning revisions to the regulations pertaining to mineral processing wastes, including the definition of solid waste, the rules applying to mixtures of Bevill-exempt wastes and those which are not Bevill-exempt, application of land disposal to characteristic mineral processing wastes, and responses to various court remands. The Agency plans to address these issues in a supplemental proposal to today's rule.

VII. Environmental Justice

A. Applicability of Executive Order 12898

EPA is committed to address environmental justice concerns and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities, and all people live in clean and sustainable communities. In response to the Executive Order and to concerns voiced by many groups outside the Agency, EPA's Office of Solid Waste

and Emergency Response formed an Environmental Justice Task Force to analyze the array of environmental justice issues specific to waste programs and to develop an overall strategy to identify and address these issues (OSWER Directive No. 9200.3-17).

B. Potential Effects

Today's proposed rule covers several wastes: wood preserving wastes, TC metals, and leaks/sludges/and emissions from surface impoundments. The rule involves not one site, but will possibly affect many facilities nationwide. Because of the locations of some of these facilities and surface impoundments, the potential exists for impacts to minority or low income communities.

Today's rule is intended to reduce risks of hazardous and characteristic wastes as proposed, and to benefit all populations. As such, this rule is not expected to cause any disproportionate impacts to minority or low income communities versus affluent or non-minority communities.

The Agency is soliciting comment and input from all stakeholders, including members of the environmental justice community and members of the regulated community. The Agency encourages all interested parties to provide comments or further information that might be necessary on

the data, analysis, and findings contained in this section. The Agency is interested in receiving additional information and/or comment on the following:

- Information on facilities with surface impoundments that have evaluated potential ecological, human health (taking into account subsistence patterns and sensitive populations) and socioeconomic impacts to minority or low-income communities.
- Information on facilities with surface impoundments that have conducted human health analyses identifying multiple and cumulative exposures (populations at risk) from leaks, emissions, sludges.
- Information on releases (leaks, emissions) that have occurred in the community and their health and environmental effects; and possible effects of exposure to the chemicals in the community.
- Information on hazardous materials stored, used, and transported in the community.

VIII. Capacity Determinations

A. Introduction

This section summarizes the results of the capacity analysis for the wastes covered by this proposal. For background information on data sources, methodology, and a summary of the capacity analyses for each group

of wastes covered in this rule, see "Background Document for Capacity Analysis for Land Disposal Restrictions, Phase IV—Issues Associated with Clean Water Act Treatment Equivalency, and Treatment Standards for Wood Preserving Wastes and Toxicity Characteristic Metal Wastes.

In general, EPA's capacity analysis focuses on the amount of waste to be restricted from land disposal that is currently managed in land-based units and that will require alternative treatment as a result of the LDRs. The quantity of wastes that are not managed in land-based units (e.g., wastewaters managed only in RCRA exempt tanks, with direct discharge to a Publicly Owned Treatment Works (POTW)) is not included in the quantities requiring alternative treatment as a result of the LDRs. Also, wastes that do not require alternative treatment (e.g., those that are currently treated using an appropriate treatment technology) are not included in these quantity estimates.

EPA's decisions on whether to grant a national capacity variance are based on the availability of alternative treatment or recovery technologies. Consequently, the methodology focuses on deriving estimates of the quantities of waste that will require either commercial treatment or the construction of new on-site treatment as a result of the LDRs. Quantities of waste that will be treated adequately either on site in existing systems or off site by facilities owned by the same company as the generator (i.e., captive facilities) are omitted from the required capacity estimates.⁴

B. Capacity Analysis Results Summary

1. Available Capacity

EPA estimates that there are 115,900 tons per year of commercial sludge/solid combustion capacity and 1,145,000 tons per year of commercial liquid combustion capacity available to meet the treatment requirements of Phase IV wastes. EPA estimates that there are over one million tons of available stabilization capacity. In addition, EPA estimates that there are approximately 47 million tons per year of available wastewater treatment capacity.

⁴ Traditionally, capacity analyses have focused on the demand for alternative capacity once existing on-site capacity and captive off-site capacity have been accounted for. However, for some of the wastes at issue in this rule it may not be feasible to ship wastes off site to a commercial facility. In particular, facilities with large volumes of wastewaters may not readily be able to transport their waste to treatment facilities. Alternative treatment for these wastes may need to be constructed on site.

EPA believes that some facilities may face logistical problems in complying with the sludges, leaks, and air emissions standards. For example, if the standards require alternative management of characteristic wastes, modifications (e.g., waste segregation, plant replumbing, the installation of a new waste treatment system or pollution prevention mechanisms) might require significant time. If EPA determines that on-site treatment capacity will not be available when the final rule is promulgated, and that there would be no feasible way for generators to transport their wastes to commercial treatment facilities, EPA may grant a capacity variance for up to two years. EPA requests comments on the types of modifications that might be necessary at facilities that need to manage their Phase IV wastes on-site, and the time required to make such modifications.

2. Surface Impoundment Sludges, Leaks, and Air Emissions

EPA is considering several regulatory options for surface impoundment sludges, leaks, and air emissions. Details of the methodology and estimates of affected facilities and waste quantities are provided in the capacity analysis technical background document.

EPA estimates that for the regulatory option that relies on Phase III rulemaking and other EPA regulatory activities (e.g., CAA) to achieve RCRA-equivalent levels of control (Option 1), no facilities or quantities will be affected by the Phase IV rule.

The other regulatory options apply some additional controls beyond treatment standards for surface impoundment wastewaters regulated under the Phase III rule. EPA analyzed these other regulatory options by focusing on the 15 industry sectors identified in the Phase III LDR capacity analysis as the industries most likely to be affected by the Phase IV LDR rule.

EPA estimates that for Option 2, the wastewater affected by the air emissions standard for surface impoundments in CWA or CWA-equivalent treatment systems will be about 0.4 billion to 5.8 billion tons of decharacterized wastewater per year. About 0.3 billion to 3.7 billion tons of decharacterized wastewater could be affected by the leak standard. The facilities generating affected wastewater may need to conduct ground water monitoring, install liners, or conduct ground water remediation. EPA estimates that 0.1 million to 3.5 million tons per year of sludges might be affected by the sludges component of the Phase IV LDR rule. For Option 3, EPA estimates that 2.4 billion to 16 billion tons of

decharacterized wastewater will be affected each year by the air emissions, leaks, and sludges standards.

For Options 2 and 3, EPA believes that some affected facilities need time to reconfigure their waste management systems or to build treatment capacity for these wastes, since the volumes of waste affected are large enough to make off-site treatment impractical for many facilities. EPA is proposing to grant a two-year national capacity variance for surface impoundment sludges, leaks, and air emissions under the regulatory options that require additional management of these wastes beyond the Phase III standards (i.e., Options 2 and 3). EPA requests comments on this proposal and data on the number of affected facilities and the quantities of affected wastes.

3. Newly Identified Characteristic Metal Wastes

EPA estimates 41,250 tons per year of newly identified D008 (lead) nonwastewaters will require stabilization as a result of the TCLP test. EPA believes that any additional quantities of other newly identified TC metal wastes are very small. Since there are over 1 million tons of stabilization capacity available to treat these wastes, EPA is proposing to not grant a variance to TC metal wastes.

4. Wood Preserving Wastes

EPA estimates that very small quantities of wood preserving wastewaters (approximately 340 tons of organic wastewater and 40 tons of inorganic wastewater per year) will require alternative treatment capacity in order to comply with the proposed LDRs. EPA estimates that approximately 28,000 per year tons of nonwastewaters (24,860 tons of organic nonwastewaters and 2,880 tons of inorganic nonwastewaters) will require alternative treatment as a result of the proposed LDRs.

EPA believes that incineration should be able to meet the proposed treatment standards for organic wastewaters and nonwastewaters, stabilization should be able to meet the proposed treatment standards for inorganic nonwastewaters, and chemical precipitation should be able to meet the treatment standards for the inorganic wastewaters. There is sufficient liquid and sludge/solid combustion capacity for both the organic wood preserving wastewaters and nonwastewaters. In addition, EPA believes that there is sufficient chemical precipitation capacity for the inorganic wastewaters. Finally, there are over 1 million tons of stabilization capacity for the inorganic nonwastewaters.

Therefore EPA is proposing not to grant a variance for the newly listed wood preserving wastes. Although many commenters to the ANPRM (56 FR 55160) expressed concern that treatment facilities would not accept F032 waste if the treatment standards include a dioxin concentration, EPA believes that its Combustion Strategy will alleviate this problem.

Given the potentially large quantity of soil and debris contaminated with newly listed wood preserving wastes and the lack of adequate treatment capacity to meet this demand, EPA is proposing to grant a two-year capacity variance to soil and debris contaminated with newly listed wood preserving wastes. The Agency requests comments on this proposal, including data on the quantities of soil and debris contaminated with wood preserving wastes that are generated.

5. Mixed Radioactive Wastes

Despite the uncertainty about quantities of mixed radioactive wastes containing wastes that will require treatment as a result of today's proposed rule, any new commercial capacity that becomes available will be needed for mixed radioactive wastes that were regulated in previous LDR rulemakings and whose variances have already expired. Thus, EPA has determined that sufficient alternative treatment capacity is not available, and is proposing to grant a two-year national capacity variance for mixed RCRA/radioactive wastewaters and nonwastewaters contaminated with wastes whose standards are being proposed today.

6. Phase IV Wastes Injected Into Class I Wells

EPA estimates that approximately 11 million tons of newly identified and listed wastes are being injected in Class I injection wells. These injected volumes vary in amount by facility and are all disposed on site. None of these facilities transport their waste off site or currently have the necessary capacity to treat their waste on site by acceptable means. Additionally, for those facilities affected by the proposed prohibitions which are unable to make a successful no migration demonstration and/or are unable to meet the requirements of other proposed options, constructing a treatment facility on site would require a significant amount of time. Therefore the Agency is proposing to grant a two-year national capacity variance for these wastes.

EPA requests comments on the above capacity determinations. In particular, EPA requests data on the generation, characteristics, and management of the

wastes discussed above. In addition, EPA requests data on the availability of treatment capacity for any of these wastes.

Table 1 lists each category of RCRA wastes for which EPA is today proposing LDR standards. For each category, this table indicates whether EPA is proposing to grant a national capacity variance for land-disposed wastes.⁵

TABLE 1.—VARIANCES FOR NEWLY LISTED AND IDENTIFIED WASTES
 ["Yes" indicates EPA is proposing to grant a variance]¹

Waste description	Surface-disposed wastes	Deep well-injected wastes
Phase IV Sludges ²	Yes	N/A.
Phase IV Leaks ²	Yes	N/A.
Phase IV Air Emissions ² .	Yes	N/A.
Newly Identified TC Metals (D004–D011).	No	Yes.
Newly Listed Wood Preserving Wastes (F032, F034, F035).	No	Yes.
Soil and Debris Contaminated with Newly Listed Wood Preserving Wastes.	Yes	N/A.
Phase IV Mixed Radioactive Wastes.	Yes	Yes.

¹ Treatment capacity variances are for two years.

² The variance determinations listed here apply only to wastes derived from surface impoundments in CWA or CWA-equivalent systems that manage decharacterized ICRT wastes.

IX. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR Part 271.

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no

⁵ The term "land-disposed wastes" denotes wastes that are managed in land-based units at any time during the waste's storage, treatment, or disposal.

longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Today's rule is being proposed pursuant to sections 3004(d) through (k), and 3004(m), of RCRA (42 U.S.C. 6924(d) through (k), and 6924(m)). The rule would be added to Table 1 in 40 CFR 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. Table 2 in 40 CFR 271.1(j) is also modified to indicate that this rule is a self-implementing provision of HSWA.

B. Abbreviated Authorization Procedures for Specified Portions of the Land Disposal Restrictions Phase II, III, and IV Rules

Under the current authorization structure, all revisions to authorized state hazardous waste programs, no matter how minor the change, are reviewed under the same procedures and standard of review. While these procedures may be appropriate for significant changes to the RCRA program, EPA believes they are too detailed for minor changes. EPA is aware that this situation may result in unnecessary costs and delays in authorizing States and add costs for the Agency to process these revisions. Because of these problems, EPA believes that the procedures for authorization should reflect the different scope of new rules. For example, a State should be able to gain authorization for minor revisions to a basic aspect of the program (i.e., the Land Disposal Restrictions) in an expedited fashion if that State is authorized for that major part of the program. Therefore, EPA is today proposing to create an expedited authorization procedure that would be applied to certain minor revisions to the

LDR program in the Phase II, III, and IV rules.

Under this proposed approach, EPA's review and approval of a State's authorization application would be expedited. A State would be required to certify that provisions it has adopted provide authority that is equivalent and no less stringent than the Federal provisions. Within 60 days of receiving a complete application, EPA would provide notice to the public approving a complete State application. Then, the public would have an opportunity for comment, as provided by the existing regulations governing authorization revisions. A detailed explanation of today's proposed procedures is provided below.

Today's Phase IV proposal contains two very distinct types of changes to the Land Disposal Restrictions program. The abbreviated authorization process that EPA is proposing today would apply to minor changes to the existing program. Specifically, the new process would apply to the regulation of newly identified wastes under BDAT, and to several clarifications and improvements to the existing LDR program. These provisions involve minor and routine changes to the Land Disposal Restrictions (LDR) regulations. The other part of today's Phase IV proposal would potentially expand the scope of EPA's program under RCRA in significant ways. Specifically, EPA is proposing options that would address the management of decharacterized wastes in surface impoundments that are not subject to RCRA Subtitle C. Depending on the option that the Agency chooses, the universe of facilities covered by Subtitle C could significantly increase. The regulatory approach that EPA may use for these surface impoundments may also differ from previous regulatory schemes. EPA would use the existing authorization procedures for this part of the Phase IV proposal, except for option one in the management of decharacterized wastes. This option would use existing non-RCRA regulatory authorities to address these units, and therefore RCRA regulatory amendments would not be required. Thus, a State's authorization would not need to be revised.

EPA is also proposing to apply the same abbreviated authorization procedures to the more minor changes in the March 2, 1995, proposed Phase III LDR rule (see 60 FR 11702) that are similar to those in today's Phase IV proposal, as they also are routine changes to the LDR program. EPA also believes that the revised numerical values represented by the Universal Treatment Standards (UTS) in §§ 268.40

and 268.48 that were promulgated in the Phase II LDR rule (see 59 FR 47982, September 1, 1994) are changes appropriate for the abbreviated process.

Basis/Rationale for Streamlined Authorization

EPA believes that an abbreviated procedure can and should be used to authorize States for sections of the Phase II, III, and Phase IV LDR rules (discussed below) for several reasons. First, the applicable portions of these rules are relatively minor in nature. Over time, changes such as these have become a routine part of the LDR program. Second, the States that would use this procedure would already be authorized for the Third Third LDR rule. During the authorization process for the LDR rules up to and including the Third Third rule, EPA would have already determined whether the State has an LDR program that is consistent with the Federal program, and also whether there is adequate enforcement. Third, since the State has been implementing the LDR program, EPA will be familiar with the State's implementation performance. Last, EPA believes that implementation of the LDR program will be enhanced by expedited authorization of these provisions, since authorization will remove any confusion about who is the implementing Agency for specific requirements.

Section 3006(b) of RCRA establishes the legal standard for State program approval. EPA believes that for the routine changes in the Phase II, III, and IV LDR rules, the certification submitted to EPA by the State provides an adequate basis for EPA to propose approval of the program revision, as this certification simply updates EPA's previous findings regarding the LDR program. EPA also believes that by virtue of a State having obtained authorization for the LDR program, the State has demonstrated its capability both in the administration and implementation of the program, and in its understanding of the requisite legal requirements. States that are authorized for significant portions of the LDR program are familiar with the type of rule changes needed, have adopted all or most of the underlying LDR program, and have experience in implementing and enforcing the rules. Thus, EPA will give great weight to the statements and legal certification submitted by the State. Accordingly, the Agency believes that a second detailed evaluation by EPA is not warranted under such circumstances.

Proposed Streamlined Authorization Procedures

Today's notice proposes to amend 40 CFR Part 271 to create a streamlined authorization procedure in new section 271.28. EPA is proposing today to apply this procedure only to the specific parts of the Phase II, III, and IV rules that are identified in paragraph (a) of section 271.28. EPA is also soliciting comment, however, on whether this approach should be applied to other aspects of the land disposal program.

The parts of the Phase III proposal to which today's streamlined authorization proposal would be applicable are: (1) Treatment standards for newly listed wastes, (2) improvements to the existing land disposal restrictions program, (3) revisions and corrections to the treatment standards in §§ 268.40 and 268.48, and (4) the prohibition of hazardous waste as fill material. The preamble discussion for these parts of the Phase III proposal is in Sections VI, VII, and VIII of the March 2, 1995, notice (see 60 FR 11702). The applicable parts of today's proposed Phase IV rule are: (1) Treatment standards for newly listed and identified wastes and (2) improvements to the land disposal restrictions program. In the final Phase II rule, the applicable parts are the treatment standards in §§ 268.40 and 268.48.

Note that EPA is not proposing the use of this streamlined procedure for the authorization of those sections of the Phase III rule that address end-of-pipe treatment standards for (1) Clean Water Act and equivalent wastewater treatment systems, and (2) Class I non-hazardous injection wells. The streamlined procedures would also not be used for the authorization of the option the Agency chooses in the Phase IV final rule to address the management of leaks, sludges, and air emissions of toxic constituents from decharacterized wastes. As explained earlier, EPA has tentatively concluded that these requirements would involve significant expansions of the program deserving more detailed review.

Paragraph (a) of proposed § 271.28 also specifies that the State must already be authorized for the Third Third LDR rule (see 55 FR 22520, June 1, 1990) to be able to use the proposed streamlined procedure to gain authorization for the Phase II, III, and IV rules. EPA is proposing this approach because the structure of the LDR program is essentially complete with the Third Third rule, and few changes have been made since this rule. EPA believes that it is appropriate to require LDR program authorization up to and including this

rule as a condition for using the proposed streamlined procedures. As of May 31, 1995, 19 States have been authorized to implement the Third LDR rule. At the same time, EPA recognizes that this proposed approach may unnecessarily limit the benefits of streamlined authorization procedures. Therefore, EPA solicits comment on (1) whether the use of the streamlined procedure should be expanded to other Land Disposal Restrictions rules, and (2) whether a State should only be required to be authorized for the Solvents and Dioxins rule (51 FR 40572, November 7, 1986) to use this procedure, since this rule put in place the basic structure of the LDR program.

Under proposed section 271.28(b), a State would submit an abbreviated application (primarily consisting of a certification from the State) that the laws of the State provide authorities that are equivalent to, and no less stringent than the Federal authorities. The certification would also include appropriate citations to the specific statutes, administrative regulations and where appropriate, judicial decisions. The cited State statutes and regulations would also have to be fully effective at the time the certification is signed. As discussed above, in the case of routine or minor program changes, EPA believes that this certification will provide an adequate basis for EPA's authorization of a program revision under RCRA section 3006 (absent contrary information in the possession of EPA, or supplied in comments during the public comment period).

Under proposed section 271.28(c), within 30 days of receipt of the application EPA would be required to notify the State if EPA determines that the application, including the certification, is not complete. Accordingly, when the application is received, EPA would conduct a completeness check to determine whether the application contains all the required components. EPA will address the extent of this completeness check in future authorization guidance. However, EPA does not intend that this completeness check involve a detailed and substantive review. EPA specifically requests comment on what activities this check should be limited to. The reasons why EPA could determine that an application is not complete are specified in section 271.28(d). To minimize any errors such as these, EPA continues to encourage States to submit draft rules to EPA for review. If EPA does find that an application is incomplete or contains errors, EPA will summarize the deficiencies in the completeness notice

sent to the State under § 271.28(c). After the deficiencies are corrected, the State would resubmit the application to EPA.

When EPA determines that a State's application is complete, EPA would issue an immediate final rule under section 271.28(e) within 60 days of receiving the application under paragraph (c). Thus, if a State's initial application is complete, this notice would be published no later than 30 days after EPA finishes its completeness check. This immediate final rule is similar to the notice used in § 271.21 for other revision authorization decisions. Thus, the public would have the same ability to comment as for other authorization decisions. The notice would provide for a 30-day public comment period, and would go into effect 60 days after publication unless a significant adverse comment is received by EPA. An example of a significant adverse comment would be that the State did not have the necessary authority to implement the new requirements.

EPA solicits comments on this proposed approach, as well as suggestions of possible modifications or alternative approaches. For example, is the step of a 30-day completeness review necessary? Are the criteria in § 271.28(d) for completeness appropriate? Are there further efficiencies that could be made, for example, in the approval process for program changes that are purely technical? Does the proposed process provide adequate assurance that the State program will be consistent with and no less stringent than the Federal program?

Although EPA has proposed to use this streamlined authorization procedure only for portions of the Phase II, III, and IV LDR rules, EPA is considering this procedure for other aspects of the Land Disposal Restrictions and other rules in the future. Future proposals will further discuss EPA's plans for improving and streamlining the state authorization program. EPA is planning to propose to use a similar authorization approach for the upcoming Hazardous Waste Identification Rule (HWIR) for contaminated media. This different procedure would provide for additional EPA review of the State's authorization application. EPA expects that the procedure proposed today would constitute the most expedited authorization procedure available to States.

C. Effect on State Authorization

Because today's proposed Phase IV LDR rule is being proposed under

HSWA authority, when finalized, those sections of today's proposal that expand the coverage of the LDR program (e.g., to newly identified wastes) would be implemented by EPA in authorized States until their programs are modified to adopt these rules and the modification is approved by EPA. However, some of the regulatory amendments proposed today are less stringent than, or reduce the scope of, the existing Federal requirements. Others are neither more or less stringent.

States that are authorized for provisions that would be amended in a less stringent manner by today's proposal would not be required to modify their program to adopt the revised provisions. Those provisions are described in Section VI of today's preamble, entitled Improvements to Land Disposal Restrictions Program. The regulatory provisions that are considered to be less stringent are in sections: 268.4, 268.5, 268.7, 268.30-37, waste code F039 in the table titled "Treatment Standards for Hazardous Wastes" in § 268.40, and the use of polymerization as a treatment method for certain D001 wastes in Table 1 of § 268.42.

Other provisions are neither more or less stringent. EPA clarified in a December 19, 1994, memorandum (which is in the docket for today's proposal) that EPA would not implement the Universal Treatment Standards (promulgated under HSWA authority in the Phase II LDR rule) separately for those States for which the State has received LDR authorization. EPA views any changes from the existing limits to be neither more or less stringent since the technology basis of the standards has not changed. Accordingly, EPA will not implement the amendments to the UTS that are proposed in the LDR Phase III and IV proposals.

States should note that EPA is also proposing to include newly identified wastes under the LDR program. Because these more stringent HSWA provisions expand the scope of LDR coverage, EPA would generally implement them in authorized States on the effective date of today's rule. EPA's authorization guidance for the final rule will identify in more detail which provisions in these sections will be implemented. However, EPA strongly encourages States that are authorized for the Land Disposal Restrictions program to make these proposed improvements to their regulations because of the clarity they will give to the regulated community and to the Agency.

Because today's rule is proposed pursuant to HSWA, a State submitting a program modification may apply to receive interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for final authorization are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations will expire January 1, 2003. (See § 271.24(c) and 57 FR 60132, December 18, 1992.)

Section 271.21(e)(2) requires that States with final authorization must modify their programs to reflect Federal program changes and to subsequently submit the modification to EPA for approval. The deadline by which the State would have to modify its program to adopt these regulations is specified in section 271.21(e). This deadline can be extended in certain cases (see section 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

States with authorized RCRA programs may already have requirements similar to those in today's proposed rule. These State regulations have not been assessed against the Federal regulations being proposed today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, states with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In most cases, EPA expects that it will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application. However, the State must modify its program by the deadline set forth in § 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

X. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is "significant." The Order defines a "significant" regulatory action as one that "is likely to result in a rule that may: (1) Have an annual effect on the economy of \$100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order."

The Agency estimated the costs of today's proposed rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considered compliance cost and economic impacts for ensuring adequate control of underlying hazardous constituents in air emissions, leaks, and sludges produced in surface impoundments used to treat decharacterized ICRT wastewaters. Also covered under this rule are three wood preserving wastes (F032, F034, and F035) and TC metals (D004–D011). The analysis considered compliance cost and economic impacts for both characteristic wastes and newly listed wastes affected by this rule. The Agency would like to have better information regarding how many facilities and waste management units are potentially affected, waste volumes, constituents, concentrations, how often and under what circumstances additional treatment is required, and treatment costs.

Detailed discussions of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's proposed rule, followed by a presentation of the cost, economic impact and benefit results may be found in the background document, "Regulatory Impact Analysis of the Proposed Phase IV Land Disposal Restrictions Rule," which is in the docket for today's proposed rule.

1. Methodology Section

Three regulatory options were considered to establish "RCRA

equivalency" for decharacterized ICRT wastes. In other words, wastes decharacterized by dilution may be placed in a nonhazardous surface impoundment only if the toxic constituents are treated to the same extent that they would be under the treatment standards mandated by RCRA section 3004(m)(1). The analysis of these regulatory options involved characterizing the affected universe of facilities in terms of current management practices, waste volumes, and constituent concentrations in wastewater (i.e., characterizing baseline conditions).

Agency estimated the volumes of waste affected by today's rule to determine the national level incremental costs (for both the baseline and post-regulatory scenarios), economic impacts (defined as the difference between the industrial activity under post-regulatory conditions and the industrial activity in the absence of regulation), and benefits (including estimation of pollutant loadings reductions, estimation of reductions in exceedances of health-based levels, and qualitative description of the potential benefits.) The procedure for estimating the volumes of decharacterized ICRT wastes and newly listed wood preserving wastes affected by today's proposed rule is detailed in the background document "Regulatory Impact Analysis of the Proposed Phase IV Land Disposal Restrictions Rule," which was placed in the docket for today's proposed rule.

2. Results

a. Volume results. The Agency has estimated the volumes of decharacterized ICRT wastes potentially affected by today's proposed rule in the background document "Regulatory Impact Analysis of the Proposed Phase IV Land Disposal Restrictions Rule," which was placed in the docket for today's proposed rule.

The Agency requests comment on waste volumes affected by the proposed Phase IV LDR rule.

b. Cost results. The Agency has prepared a cost and impacts analysis for the options previously described in this preamble. Under Option 1, the Agency proposes to defer to existing regulations, and as a result, expects minimal impacts to occur. The Agency has estimated that roughly 300 facilities (with approximately 800 surface impoundments) under Option 2 and roughly 850 facilities (with approximately 2,000 surface impoundments) under Option 3 may manage decharacterized wastewaters containing constituents exceeding UTS.

The Agency estimates that total annual compliance costs for facilities under Option 2 range from \$10 to \$65 million. Total annual compliance costs for facilities under Option 3 are estimated to be in the range of \$200 to \$300 million. The Agency requests comment and data regarding how often additional treatment may be required.

The Agency has estimated that minimal impacts will occur as the result of setting treatment standards for TC metals.

c. Economic impact results. The Agency has estimated the economic impacts of today's proposed rule to be small. Results of the analysis were included in the docket for today's proposed rule. The Agency requests comment on anticipated economic impacts resulting from the proposed Phase IV LDR rule.

d. Benefit estimate results. The Agency has estimated the benefits associated with today's proposed rule to be small. Screening risk results for air emissions suggest that 20 to 25 percent of samples (306 to 349 of 1,562 facilities for which data are available) exceed the 100 parts per million by weight (ppmw) control limit set by the Subpart CC rule.

Central tendency screening risk results for leaks to groundwater indicate that samples from the pharmaceutical and OCPSF industries have potential individual lifetime cancer risk exceedances of 10^{-5} at the raw wastewater and biological pond influent sampling points. In the pharmaceutical industry, methylene chloride and acrylonitrile are the constituents of concern; in the OCPSF industries, acrylonitrile is the constituent of concern. Point of generation data indicate the potential for risks from leaks, however, surface impoundment data are not available for all industries.

Central tendency screening risk results for sludges from the OCPSF industry indicate that two samples present individual lifetime cancer risk in excess of 10^{-5} , where acrylonitrile is the constituent of concern. The Agency requests comment on anticipated benefits resulting from the proposed Phase IV LDR rule.

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 et seq., when an agency publishes notice of rulemaking, for a rule that will have a significant effect on a substantial number of small entities, the agency must prepare and make available for public comment a regulatory flexibility analysis that considers the effect of the rule on small entities (i.e.: small businesses, small organizations, and

small governmental jurisdictions.) Under the Agency's *Revised Guidelines for Implementing the Regulatory Flexibility Act*, dated May 4, 1992, the Agency committed to considering regulatory alternatives in rulemakings when there were any economic impacts estimated on any small entities. See RCRA sections 3004 (d), (e), and (g)(5) which apply uniformly to all hazardous wastes. Previous guidance required regulatory alternatives to be examined only when significant economic effects were estimated on a substantial number of small entities.

In assessing the regulatory approach for dealing with small entities in today's proposed rule, for both surface disposal of wastes and underground injection control, the Agency considered two factors. First, EPA is not aware of any data on potentially affected small entities. Second, due to the statutory requirements of the RCRA LDR program, no legal avenues exist for the Agency to provide relief from the LDRs for small entities. The only relief available for small entities is the existing small quantity generator provisions and conditionally exempt small quantity generator exemptions found in 40 CFR 262.11-12, and 261.5, respectively. These exemptions basically prescribe 100 kilograms (kg) per calendar month generation of hazardous waste as the limit below which one is exempted from complying with the RCRA standards.

Given these two factors, the Agency was unable to frame a series of small entity options from which to select the lowest cost approach; rather, the Agency was legally bound to address the land disposal of the hazardous wastes covered in today's proposed rule without regard to the size of the entity being regulated.

C. Paperwork Reduction Act

The information collection requirements in today's proposed rule have been submitted for approval to the Office of Management and Budget under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. An Information Request (ICR) document was prepared by EPA and a copy may be obtained from Sandy Farmer (EPA ICR #1442.10), Environmental Protection Agency, Regulatory Information Division, 401 M. Street, S.W. (mail code 2136), Washington, D.C. 20460, or by calling (202) 260-2740. Only incremental burdens are discussed in the ICR. This burden will eventually be merged with the LDR program ICR.

The overall reporting and recordkeeping burden is estimated to be approximately 66,000 hours. The average recordkeeping burden per

respondent is approximately 3 hours. The public reporting burden for this collection is estimated to average 16 hours per respondent. This includes time for reviewing instructions, gathering and compiling data, maintaining the data, and preparing and submitting data.

The public should send comments regarding the burden estimate, or any other aspect of this collection of information (please refer to EPA ICR# 1442.10 and OMB# 2050-0085) including suggestions for reducing burden to: Sandy Farmer (EPA ICR 1442.10), Environmental Protection Agency, Regulatory Information Division, 401 M. Street, S.W. (mail code 2136), Washington, D.C. 20460; and to Jonathan Gledhill (OMB 2050-0085), Office of Management and Budget, Office of Information and Regulatory Affairs, Washington, D.C. 20460.

XI. Unfunded Mandates Reform Act

Under Section 202 of the Unfunded Mandates Reform Act of 1995, signed into law on March 22, 1995, EPA must prepare a statement to accompany any rule where the estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, will be \$100 million or more in any one year. Under Section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objective of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly impacted by the rule.

EPA has completed an analysis of the costs and benefits from the proposed Phase IV LDR rule and has determined that this rule does not include a Federal mandate that may result in estimated costs of \$100 million or more to either State, local or tribal governments in the aggregate. As stated above, the private sector may incur costs exceeding \$100 million per year depending upon the option chosen in the final rulemaking. EPA has fulfilled the requirement for analysis under the Unfunded Mandates Reform Act, and results of this analysis have been included in the background document "Regulatory Impact Analysis of the Proposed Phase IV Land Disposal Restrictions Rule," which was placed in the docket for today's proposed rule.

List of Subjects

40 CFR Part 148

Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: August 11, 1995.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations as proposed to be amended at 60 FR 11702 (March 2, 1995) is further proposed to be amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Section 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.

2. Section 148.18 is amended by redesignating paragraphs (a), (b), and (c), as paragraphs (b), (c), and (d), and by adding paragraph (a) to read as follows:

§ 148.18 Waste specific prohibitions— Newly Listed and Identified Wastes.

(a) Effective August 22, 1997, the wastes specified in 40 CFR 261 as EPA Hazardous waste numbers F032, F034, and F035, D004—D011 (as measured by the Toxicity Characteristic Leaching Procedure), and mixed D004—D011 TC/radioactive wastes, are prohibited from underground injection.

PART 268—LAND DISPOSAL RESTRICTIONS

3. The authority citation for Part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

4. Section 268.1 is amended by revising paragraph (e)(4)(ii) to read as follows:

§ 268.1 Purpose, scope and applicability.

* * * * *

(e) * * *

(4) * * *

(ii) Characteristic wastes which are injected into Class I nonhazardous waste wells or placed in a Clean Water Act (CWA) or CWA-equivalent wastewater treatment surface

impoundment, whose combined volume is less than one per cent of the total flow at the wellhead, or at the surface impoundment influent, on an annualized basis; and for which any underlying hazardous constituents in the characteristic wastes are present, at the point of generation, at levels less than ten times the treatment standards found at § 268.48.

* * * * *

5. Section 268.4 is amended by revising paragraphs (a)(2)(iv), and (a)(4) introductory text to read as follows:

* * * * *

§ 268.4 Treatment surface impoundment exemption.

(a) * * *

(2) * * *

(iv) *Recordkeeping:* Sampling and testing and recordkeeping provisions of §§ 264.13 and 265.13 of this chapter apply.

* * * * *

(4) The owner or operator submits to the Regional Administrator a written certification that the requirements of § 268.4(a)(3) have been met. The following certification is required:

* * * * *

6. Section 268.5 is amended by revising paragraph (e) to read as follows:

§ 268.5 Procedures for case-by-case extensions to an effective date.

* * * * *

(e) On the basis of the information referred to in paragraph (a) of this section, after notice and opportunity for comment, and after consultation with appropriate State agencies in all affected States, the Administrator may grant an extension of up to one year from the effective date. The Administrator may grant additional time, up to one additional year, if requested in the application for the original extension of the effective date, or if requested at a later date, so long as the demonstration can be made that additional time beyond one year is necessary. In no event will an extension extend beyond 24 months from the applicable effective date specified in Subpart C of Part 268. The length of any extension authorized will be determined by the Administrator based on the time required to construct or obtain the type of capacity needed by the applicant as described in the completion schedule discussed in paragraph (a)(5) of this section. The Administrator will give public notice of the intent to approve or deny a petition and provide an opportunity for public comment. The final decision will be published in the **Federal Register**.

* * * * *

7. Section 268.7 is amended by removing paragraph (b)(2) and redesignating paragraph (b)(3) as (b)(2), (b)(4) as (b)(3), (b)(5) as (b)(4), (b)(6) as (b)(5) and (b)(7) as (b)(6); by revising the heading, paragraph (a), the introductory text of paragraph (b), (b)(1), (b)(2), (b)(3), (b)(4) introductory text, (b)(4)(i) introductory text, (b)(4)(ii) introductory text, (b)(4)(iii) introductory text, (c)(1), and (c)(2) to read as follows:

§ 268.7 Testing, tracking, and recordkeeping requirements for generators, treaters, and disposal facilities.

(a) Requirements for generators:

(1) Determine if the waste has to be treated before being land disposed, as follows: A generator of a hazardous waste must determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in § 268.40 or § 268.45. This determination can be made in either of two ways: testing the waste or using knowledge of the waste. If the generator tests the waste, testing would normally determine the total concentration of hazardous constituents, or the concentration of hazardous constituents in an extract of the waste obtained using test method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as referenced in § 260.11 of this chapter, depending on whether the treatment standard for the waste is expressed as a total concentration or concentration of hazardous constituent in the waste's extract. In addition, some hazardous wastes must be treated by particular treatment methods before they can be land disposed. These treatment standards are also found in § 268.40, and are described in detail in § 268.42, Table 1. These wastes do not need to be tested. If a generator determines they are managing a waste that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of § 268.9 of this part in addition to any applicable requirements in this section.

(2) If the waste does not meet the treatment standard: With each shipment of waste, the generator must notify the treatment or storage facility in writing. The notice must include the information in column "268.7(a)(2)" of the Notification Requirements Table in § 268.7(a)(4).

(3) If the waste meets the treatment standard: The generator must send a one-time notice and certification to each treatment or storage facility receiving the waste. The notice must state that the

waste meets the applicable treatment standards set forth in § 268.40 or § 268.45. The notice must also include the information indicated in column "268.7(a)(3)" of the Notification Requirements Table in § 268.7(a)(4). However, generators of hazardous debris excluded from the definition of hazardous waste under § 261.3(e)(2) of this chapter are not subject to these requirements. If the waste changes, the generator must send a new notice and

certification to the receiving facility, and place a copy in their files.
 (4) For reporting, tracking and recordkeeping when exceptions allow certain wastes that do not meet the treatment standards to be land disposed: There are certain exemptions from the requirement that hazardous wastes meet treatment standards before they can be land disposed. These include, but are not limited to case-by-case extensions under § 268.5, disposal in a no-migration unit under § 268.6, or a

national capacity variance under subpart C of this part. If a generator's waste is so exempt, then the generator must submit a one-time notice and certification to each land disposal facility receiving the waste. The notice must include the information marked off in column "268.7(a)(4)" of the Notification Requirements Table below. If the waste changes, the generator must send a new notice and certification to the receiving facility, and place a copy in their files.

PAPERWORK REQUIREMENTS TABLE

Required Information	§ 268.7(a)(2)	§ 268.7(a)(3)	§ 268.7(a)(4)
1. EPA Hazardous Waste and Manifest Numbers	√	√	√
2. The constituents for F001–F005, F039, and underlying hazardous constituents, unless the waste will be treated and monitored for all constituents (in which case none are required to be listed). The notice must include the applicable wastewater/ nonwastewater category (see §§ 268.2(d) and (f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)	√		
3. Waste analysis data (when available)	√		
4. Date the waste is subject to the prohibition			√
5. Certification statement: I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards, or is subject to an exemption from the treatment standards, specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment		√	√
6. For hazardous debris, when treating with the alternative treatment technologies provided by § 268.45: the contaminants subject to treatment, as described in § 268.45(b); and an indication that these contaminants are being treated to comply with § 268.45	√		

(5) If a generator is managing prohibited waste in tanks, containers, or containment buildings regulated under 40 CFR 262.34, and is treating such waste in such tanks, containers, or containment buildings to meet applicable treatment standards under subpart D of this part, the generator must develop and follow a written waste analysis plan which describes the procedures the generator will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of Table 1, § 268.45, however, are not subject to these waste analysis requirements.) The plan must be kept on site in the generator's records, and the following requirements must be met:

(i) The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and contain all information necessary to treat the waste(s) in accordance with the requirements of this Part, including the selected testing frequency.

(ii) Such plan must be kept in the facility's on-site files and made available to inspectors.

(iii) Wastes shipped off-site pursuant to this paragraph must comply with the notification requirements of § 268.7(a)(4).

(6) If a generator determines that the waste is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be retained on-site in the generator's files. If a generator determines that the waste is restricted based on testing this waste or an extract developed using the test method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as referenced in § 260.11 of this chapter, and all waste analysis data must be retained on-site in the generator's files.

(7) If a generator determines that he is managing a restricted waste that is excluded from the definition of hazardous or solid waste or exempt from Subtitle C regulation, under 40 CFR 261.2 through 261.6 subsequent to the point of generation, he must place

a one-time notice stating such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from RCRA Subtitle C regulation, and the disposition of the waste, in the facility's file.

(8) Generators must retain on-site a copy of all notices, certifications, waste analysis data, and other documentation produced pursuant to this section for at least three years from the date that the waste that is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal. The three year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator. The requirements of this paragraph apply to solid wastes even when the hazardous characteristic is removed prior to disposal, or when the waste is excluded from the definition of hazardous or solid waste under 40 CFR 261.2–261.6, or exempted from Subtitle C regulation, subsequent to the point of generation.

(9) If a generator is managing a lab pack waste and wishes to use the alternative treatment standard for lab packs found at § 268.42(c), with each shipment of waste the generator must submit a notice to the treatment facility in accordance with paragraph (a)(2) of this section. If the lab pack contains characteristic hazardous wastes (D001–D043), underlying hazardous constituents (as defined in § 268.2(i)) need not be determined. The generator must also comply with the requirements in paragraphs (a)(6) and (a)(7) of this section and must submit the following certification, which must be signed by an authorized representative:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under appendix IV to 40 CFR part 268. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

(10) Small quantity generators with tolling agreements pursuant to 40 CFR 262.20(e) must comply with the applicable notification and certification requirements of paragraph (a) of this

section for the initial shipment of the waste subject to the agreement. Such generators must retain on-site a copy of the notification and certification, together with the tolling agreement, for at least three years after termination or expiration of the agreement. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

(b) Treatment facilities must test their wastes according to the frequency specified in their waste analysis plans as required by 40 CFR 264.13 (for permitted TSDs) or 40 CFR 265.13 (for interim status facilities). Such testing must be performed as provided in paragraphs (b)(1), (b)(2) and (b)(3) of this section.

(1) For wastes with treatment standards expressed as concentrations in the waste extract (TCLP) the owner or operator of the treatment facility must test the treatment residues, or an extract of such residues developed using test method 1311 (the Toxicity Characteristic Leaching Procedure, described in "Test Methods for

Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 as incorporated by reference in § 260.11 of this chapter), to assure that the treatment residues or extract meet the applicable treatment standards.

(2) For wastes with treatment standards expressed as concentrations in the waste, the owner or operator of the treatment facility must test the treatment residues (not an extract of such residues) to assure that the treatment residues meet the applicable treatment standards.

(3) A notice must be sent with each waste shipment to the land disposal facility except that debris excluded from the definition of hazardous waste under § 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, § 268.45, and debris that the Director has determined does not contain hazardous waste) is subject to the notification and certification requirements of paragraph (d) of this section rather than these notification requirements. The notice must include the information in the Notification Requirements Table in this section.

PAPERWORK REQUIREMENTS TABLE

Required information	§ 268.7(b)
1. EPA Hazardous Waste and Manifest numbers	√
2. The constituents for F001–F005, F039, and underlying hazardous constituents, unless the waste will be treated and monitored for all constituents (in which case none are required to be listed). The notice must include the applicable wastewater/nonwastewater category (see §§ 268.2 (d) and (f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)	√
3. Waste analysis data (when available)	√

(4) The treatment facility must submit a certification with each shipment of waste or treatment residue of a restricted waste to the land disposal facility stating that the waste or treatment residue has been treated in compliance with the applicable performance standards specified in subpart D of this part. Debris excluded from the definition of hazardous waste under § 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, § 268.45, and debris that the Director has determined does not contain hazardous waste), however, is subject to the notification and certification requirements of paragraph (d) of this section rather than the certification requirements of this paragraph.

(i) For wastes with treatment standards expressed as concentrations in the waste extract or in the waste under § 268.40 of this part, the certification must be signed by an

authorized representative and must state the following:

* * * * *

(ii) For wastes with treatment standards expressed as technologies in § 268.40 (described in § 268.42) of this part, the certification must be signed by an authorized representative and must state the following:

* * * * *

(iii) For wastes with treatment standards expressed as concentrations in the waste pursuant to § 268.40, if compliance with the treatment standards in subpart D of this part is based in part or in whole on the analytical detection limit alternative specified in § 268.43(c), the certification also must state the following:

* * * * *

(c) * * *

(1) Have copies of the notice and certifications specified in paragraph (a) of this section.

(2) Test the waste, or an extract of the waste or treatment residue developed

using test method 1311 (the Toxicity Characteristic Leaching Procedure), described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 as incorporated by reference in § 260.11 of this chapter), to assure that the wastes or treatment residues are in compliance with the applicable treatment standards set forth in subpart D of this part. Such testing must be performed according to the frequency specified in the facility's waste analysis plan as required by § 264.13 or § 265.13 of this chapter.

* * * * *

8. Section 268.9 is amended by revising paragraph (a), and paragraph (d)(1)(ii) to read as follows:

§ 268.9 Special rules regarding wastes that exhibit a characteristic.

(a) The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to

determine the applicable treatment standards under subpart D of this part. For purposes of part 268, the waste will carry the waste code for any applicable listed waste under 40 CFR part 261, subpart D. In addition, where the waste exhibits a characteristic, the waste will carry one or more of the characteristic waste codes under 40 CFR part 261, subpart C, except when the treatment standard for the listed waste operates in lieu of the treatment standard for the characteristic waste, as specified in paragraph (b) of this section. If the generator determines that their waste displays a hazardous characteristic (and is not D001 nonwastewaters treated by CMBST, RORGS, or POLYM of § 268.42, Table 1), the generator must determine the underlying hazardous constituents (as defined in § 268.2), in the characteristic wastes.

* * * * *

- (d) * * *
- (1) * * *

(ii) A description of the waste as initially generated, including the applicable EPA hazardous waste code(s), treatability group(s), and underlying hazardous constituents (as defined in § 268.2(i)), unless the waste will be monitored for all underlying hazardous constituents, in which case no constituents need be specified on the notification.

* * * * *

Subpart C—Prohibitions on Land Disposal

§§ 268.31, 268.32, 268.33, 268.34, 268.35 and 268.36 [Removed and Revised]

9. In Subpart C, §§ 268.31, 268.32, 268.33, 268.34, 268.35, and 268.36 are removed and reserved, and § 268.30 is revised to read as follows:

§ 268.30 Waste specific prohibitions—wood preserving wastes, and characteristic wastes that fail the toxicity characteristic.

(a) Effective November 20, 1995, the wastes specified in 40 CFR 261 as EPA Hazardous Waste numbers D004–D011 (as measured by the Toxicity Characteristic Leaching Procedure), F032, F034, and F035, are prohibited from land disposal.

(b) Effective August 22, 1997, soil and debris contaminated with F032, F034, F035; and radioactive wastes mixed with EPA Hazardous waste numbers D004–D011 (as measured by the Toxicity Characteristic Leaching Procedure) are prohibited from land disposal.

(c) Between November 20, 1995 and August 22, 1997, hazardous wastes F032, F034, F035; radioactive wastes mixed with EPA Hazardous waste numbers F032, F034, F035, and soil and debris contaminated with these wastes, may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in § 268.5(h)(2) of this Part.

(d) The requirements of paragraphs (a), and (b) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in Subpart D of this part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under § 268.44; or

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with

respect to these wastes covered by the extension.

(e) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in § 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents (including underlying hazardous constituents in characteristic wastes that have been diluted to remove the characteristic) in excess of the applicable Universal Treatment Standard levels of § 268.48 of this Part, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.

Subpart D—Treatment Standards

10. Section 268.40 is amended by revising paragraph (e), and in the Table of Treatment Standards adding in alpha-numerical order entries for F032, F033, and F034, and revising the entries for D001 High TOC Subcategory, D003 Explosives, D004 through D011, and F039 to read as follows:

§ 268.40 Applicability of Treatment Standards.

* * * * *

(e) For characteristic wastes subject to treatment standards in the following table “Treatment Standards for Hazardous Wastes,” all underlying hazardous constituents (as defined in § 268.2(i)) must meet Universal Treatment Standards, found in § 268.48, Table UTS, prior to land disposal.

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste description and treatment/regulatory subcategory ¹	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common Name	CAS ² No.	Concentration in mg/l ³ ; or technology code ⁴	Concentration in mg/kg ⁵ unless noted as “mg/l TCLP” or technology code
D001	* * * * *	High TOC Ignitable Subcategory based on 40 CFR 261.2(a)(1)—Greater than or equal to 10% total organic carbon (Note: this subcategory consists of nonwastewaters only)	NA	NA	RORGS; or CMBST; or POLYM.
	* * * * *				
D003	* * * * *				

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

Waste Code	Waste description and treatment/ regulatory subcategory ¹	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common Name	CAS ² No.	Concentration in mg/l ³ ; or tech- nology code ⁴	Concentration in mg/kg ⁵ unless noted as "mg/l TCLP" or tech- nology code
	Explosives Subcategory based on § 261.23(a)(6), (7), and (8)	NA	NA	DEACT and meet § 268.48 standards	DEACT and meet § 268.48 standards.
D004	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP.
D005	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium	Barium	7440-39-3	1.2	7.6 mg/l TCLP.
D006	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium	Cadmium	7440-43-9	0.69	0.19 mg/l TCLP.
D007	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP.
D008	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead	Lead	7439-92-1	0.69	0.37 mg/l TCLP.
D009	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury; and contain less than 260 mg/kg total mercury. (Low Mercury Subcategory)	Mercury	7439-97-6	NA	0.20 mg/l TCLP.
	All D009 wastewaters	Mercury	7439-97-6	0.15	
D010	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium	Selenium	7782-49-2	0.82	0.16 mg/l TCLP.
D011	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver	Silver	7440-22-4	0.43	0.30 mg/l TCLP.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

Waste Code	Waste description and treatment/regulatory subcategory ¹	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common Name	CAS ² No.	Concentration in mg/l ³ ; or technology code ⁴	Concentration in mg/kg ⁵ unless noted as "mg/l TCLP" or technology code
F032	Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with section 40 CFR 261.35 and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	Pentachlorodibenzofurans ..	NA	0.000063	0.001
Tetrachlorodibenzofurans ...		NA	0.000063	0.001	
Arsenic		7440-38-2	1.4	5.0 mg/l TCLP.	
Chromium (Total)		7440-47-3	2.77	0.86 mg/l TCLP.	
F034	Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	Acenaphthene	83-32-9	0.059	3.4
Anthracene		120-12-7	0.059	3.4	
Benz(a)anthracene		56-55-3	0.059	3.4	
Benzo(a)pyrene		50-32-8	0.061	3.4	
Chrysene		218-01-9	0.059	3.4	
2,4-Dimethylphenol		105-67-9	0.036	14	
Fluorene		86-73-7	0.059	3.4	
Hexachlorodibenzofurans ...		NA	0.000063	0.001	
Hexachlorodibenzo-p-dioxins.		NA	0.000063	0.001	
Naphthalene		91-20-3	0.059	5.6	
Pentachlorodibenzo-p-dioxins.		NA	0.000063	0.001	
Pentachlorophenol		87-86-5	0.089	7.4	
Phenanthrene		85-01-8	0.059	5.6	
Phenol		108-95-2	0.039	6.2	
Pyrene		129-00-0	0.067	8.2	
Tetrachlorodibenzo-p-dioxins.		NA	0.000063	0.001	
F035		Wastewaters, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	2,3,4,6-Tetrachlorophenol .	58-90-2	0.030
2,4,6-Trichlorophenol	88-06-2		0.035	7.4	
Arsenic	7440-38-2		1.4	5.0 mg/l TCLP.	
Chromium (Total)	7440-47-3		2.77	0.86 mg/l TCLP.	
Acenaphthene	83-32-9		0.059	3.4	
Anthracene	120-12-7		0.059	3.4	
Benz(a)anthracene	56-55-3		0.059	3.4	
Benzo(a)pyrene	50-32-8		0.061	3.4	
Chrysene	218-01-9		0.059	3.4	
2,4-Dimethylphenol	105-67-9		0.036	14	
Fluorene	86-73-7		0.059	3.4	
Naphthalene	91-20-3		0.059	5.6	
Pentachlorophenol	87-86-5		0.089	7.4	
Phenanthrene	85-01-8		0.059	5.6	
Phenol	108-95-2		0.039	6.2	
Pyrene	129-00-0		0.067	8.2	
2,3,4,6-Tetrachlorophenol .	58-90-2		0.030	7.4	
2,4,6-Trichlorophenol	88-06-2	0.035	7.4		
Arsenic	7440-38-2	1.4	5.0 mg/l TCLP.		
Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP.		

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

Waste Code	Waste description and treatment/regulatory subcategory ¹	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common Name	CAS ² No.	Concentration in mg/l ³ ; or technology code ⁴	Concentration in mg/kg ⁵ unless noted as "mg/l TCLP" or technology code
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028)	Universal Treatment Standards in § 268.48 apply, with the exceptions of flouride, vanadium, and zinc	NA	Universal Treatment Standards in § 268.48 apply, with the exceptions of vanadium and zinc	Universal Treatment Standards in § 268.48 apply, with the exceptions of vanadium and zinc.

* * * * *
 11. Section 268.42(a)(3) is amended by adding "POLYM" in alphabetical order to Table 1 to read as follows:
 § 268.42 Treatment standards expressed as specified technologies. (3) * * *
 * * * * *
 (a) * * *

TABLE 1.—TECHNOLOGY CODES AND DESCRIPTION OF TECHNOLOGY-BASED STANDARDS

Technology code	Description of technology-based standards
POLYM	Formation of complex high-molecular weight solids through polymerization of monomers in high-TOC D001 nonwastewaters.

* * * * *
 12. Section 268.44 is amended by revising the introductory text of paragraph (o), the title of the table, and the "see also" column of the table to read as follows:
 § 268.44 Variance from a treatment standard.
 * * * * *
 (o) The following facilities are excluded from the treatment standards under § 268.40 and are subject to the following constituent concentrations:

TABLE 2.—WASTES EXCLUDED FROM THE TREATMENT STANDARDS UNDER § 268.40

Facility name and address	Waste code	See also	Regulated hazardous constituent	Wastewaters		Nonwastewaters	
				Concentrations (mg/l)	Notes	Concentrations (mg/kg)	Notes
* * *	* * *	§ 268.40	*	*	*	* * *	*
* * *	* * *	§ 268.40	*	*	*	* * *	*

* * * * *

Appendix I, Appendix II, Appendix III, Appendix VII, Appendix VIII, Appendix IX and Appendix X to Part 268 [Removed and Reserved]

13. Appendix I, Appendix II, Appendix III, Appendix VII, Appendix VIII, Appendix IX, and Appendix X to Part 268 are removed and reserved, and Appendix VI to Part 268 is amended by revising the introductory text to read as follows:

Appendix VI to Part 268—Recommended Technologies to Achieve Deactivation of Characteristics in Section 268.40

The treatment standard for many subcategories of D001, D002, and D003 wastes as well as for K044, K045, and K047 wastes is listed in § 268.40 as "Deactivation and meet UTS." EPA has determined that many technologies, when used alone or in

combination, can achieve the deactivation portion of the treatment standard. Characteristic wastes that also contain underlying hazardous constituents (see § 268.2) must be treated not only by a "deactivating" technology to remove the characteristic, but also to achieve the universal treatment standards (UTS) for underlying hazardous constituents. The following appendix presents a partial list of technologies, utilizing the five letter technology codes established in 40 CFR 268.42 Table I, that may be useful in meeting the treatment standard. Use of these specific technologies is not mandatory and does not preclude direct reuse, recovery, and/or the use of other pretreatment technologies, provided deactivation is achieved and, if applicable, underlying hazardous constituents are treated to achieve the UTS.

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

14. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a) and 6926.

Subpart A—Requirements for Final Authorization

15. Section 271.1(j) is amended by adding the following entries to Table 1 in chronological order by date of publication in the **Federal Register**, and by adding the following entries to Table 2 in chronological order by effective 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
* * * * *	* * * * *	* * * * *	* * * * *
[Insert date of publication of final rule in the Federal Register (FR)].	Land Disposal Restrictions Phase IV.	[Insert FR page numbers].	[Insert date of 90 days from date of publication of final rule].
* * * * *	* * * * *	* * * * *	* * * * *

* * * * *

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
* * * * *	* * * * *	* * * * *	* * * * *
[Insert date 90 days from date of publication of final rule].	Prohibition on land disposal of newly listed and identified wastes.	3004(g)(4) (C) and 3004 (m).	[Insert date of publication of final rule] 59 FR [Insert page numbers].
[Insert date 2 years from date of publication of final rule].	Prohibition on land disposal of radioactive waste mixed with the newly listed or identified wastes, including soil and debris.	3004(m) 3004(g)(4)(C) and 3004(m).	Do. Do.
* * * * *	* * * * *	* * * * *	* * * * *

* * * * *

16. Section 271.28 is added to read as follows:

§ 271.28 Streamlined authorization procedures.

(a) The procedures contained in this section may be used by a State when revising its program by applying for authorization for the following rules, or parts of rules:

- (1) The following changes promulgated by the Land Disposal Restrictions Phase Two rule (59 FR 47980, September 19, 1994) if a State is authorized for Land Disposal Restrictions rules up to the Third Third (55 FR 22520, June 1, 1990):
 - (i) New Table in § 268.40; and
 - (ii) New § 268.48.
- (2) The following changes proposed by the Land Disposal Restrictions Phase Three rule (proposed at 60 FR 11702,

May 2, 1995) if a State is authorized for Land Disposal Restrictions rules up to the Third Third (55 FR 22520, June 1, 1990):

- (i) Amendments to §§ 266.20(b), 268.2, 268.7, 268.39, the Table to 268.40, 268.48; and
- (ii) Removal of §§ 268.8, 268.10–12.
- (3) All provided regulatory provisions of the proposed Land Disposal Restrictions Phase Four rule ([insert date of publication of final rule] FR

[Insert FR page number]), except amended § 268.1, if a State is authorized for Land Disposal Restrictions rules up to the Third Third (55 FR 22520, June 1, 1990).

(b) An application for a revision of a State's program for the provisions stated in paragraph (a) of this section shall consist of:

(1) A certification from the State that its laws provide authority that is equivalent to and no less stringent than the provisions specified in paragraph (a), and which includes references to the specific statutes, administrative regulations and where appropriate, judicial decisions. State statutes and regulations cited in the State certification shall be fully effective at the time the certification is signed; and

(2) Copies of all applicable State statutes and regulations.

(c) Within 30 days of receipt by EPA of a State's application for final authorization to implement a rule specified in paragraph (a) of this section, if the Administrator determines that the application is not complete, the Administrator shall notify the State that the application is incomplete. This notice shall include a concise statement

of the deficiencies which form the basis for this determination.

(d) For purposes of this section an incomplete application is one where:

(1) Copies of applicable statutes or regulations were not included;

(2) The statutes or regulations relied on by the State to implement the program revisions are not yet in effect;

(3) The State is not authorized to implement the prerequisite RCRA rules as specified in paragraph (a) of this section; or

(4) In the certification, the citations to the specific statutes, administrative regulations and where appropriate, judicial decisions are not included or incomplete.

(e) Within 60 days after receipt of a complete final application from a State for final authorization to implement a rule or rules specified in paragraph (a) of this section, absent information in the possession of EPA, the Administrator shall publish an immediate final notice of the decision to grant final authorization as follows:

(1) In the **Federal Register**;

(2) In enough of the largest newspapers in the State to attract Statewide attention; and

(3) By mailing to persons on the State agency mailing list and to any other persons whom the Agency has reason to believe are interested.

(f) The public notice under paragraph (e) of this section shall summarize the State program revision and provide for an opportunity to comment for a period of 30 days.

(g) Approval of State program revisions under this section shall become effective 60 days after the date of publication in the **Federal Register** in accordance with paragraph (e) of this section, unless a significant adverse comment pertaining to the State program revision discussed in the notice is received by the end of the comment period. If a significant adverse comment is received, the Administrator shall so notify the State and shall, within 60 days after the date of publication, publish in the **Federal Register** either:

(1) A withdrawal of the immediate final decision; or

(2) A notice containing a response to comments and either affirming that the immediate final decision takes effect or reversing the decision.

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