ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 268, 271, and 403

RIN 2050–AD38

[EPA # 530–Z–96–002; FRL–5438–3]

Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is promulgating treatment standards for hazardous wastes from the production of carbamate pesticides and from primary aluminum production under its Land Disposal Restrictions (LDR) program. The purpose of the LDR program, authorized by the Resource Conservation and Recovery Act (RCRA), is to minimize short- and long-term threats to human health and the environment due to land disposal of hazardous wastes.

The Agency is also amending the treatment standards for hazardous wastes that exhibit the characteristic of reactivity. The rule also begins the process of amending existing treatment standards for wastewaters which are hazardous because they display the characteristic of ignitability, corrosivity, reactivity, or toxicity. These wastes are sometimes treated in lagoons whose ultimate discharge is regulated under the Clean Water Act, and sometimes injected into deepwells which are regulated under the Safe Drinking Water Act. Prior to today's rule, the treatment standard for these wastes required only removal of the characteristic property. Today's revised treatment standards require treatment, not only to remove the characteristic, but also to treat any underlying hazardous constituents which may be present in the wastes. Therefore, these revised treatment standards will minimize threats from exposure to hazardous constituents which may potentially migrate from these lagoons or wells.

Finally, EPA is codifying as a rule its existing Enforcement Policy that combustion of inorganic wastes is an impermissible form of treatment because hazardous constituents are being diluted rather than effectively treated.

EFFECTIVE DATE: This final rule is effective on April 8, 1996, except:

Sections 148.18(a), 268.39(a), (b), and (f), which are effective on July 1, 1996; and

Sections 148.18(b) and 268.39(c), which are effective on January 8, 1997; and

Sections 148.1 (a), (b), and (d), 148.3, 148.4, 148.18 (c) and (d), 148.20(a), 268.1(e), 268.2 (k) and (l), 268.3 (a) and (b), 268.9 (d), (e), (f), and (g), 268.39 (d) and (e), 268.44(a), and 403.5 (c) and (d), which are effective on April 8, 1998.

ADDRESSES: Supporting materials are available for viewing in the RCRA information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–PH3F–FFFFF. The RCRA Docket is open from 9 a.m. to 4 p.m. Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information on the LDR program, contact the RCRA Hotline at 800–424–9346 (toll-free) or 703–412–9810 locally. For general information on today's rule, contact Peggy Vyas in the Office of Solid Waste, phone 703–308–8594.

SUPPLEMENTARY INFORMATION:

Glossary of Acronyms

BAT—Best Available Technology
BDAT—Best Demonstrated Available Technology
BIFs—Boilers and Industrial Furnaces
CAA—Clean Air Act
CWA—Clean Water Act
EP—Extraction Procedure
HON—Hazardous Organic NESHAPs
HSWA—Hazardous and Solid Waste Amendments
HWIR—Hazardous Waste Identification Rule
ICR—ignitable, corrosive, and reactive wastes, or, Information Collection Request (in section IX.D.)
ICRT—ignitable, corrosive, reactive, and TC wastes
LDR—Land Disposal Restrictions
NESHAPs—National Emission Standards for Hazardous Air Pollutants
NPDES—National Pollutant Discharge Elimination System
POTW—Publicly-Owned Treatment Works
PSES—Pretreatment Standards for Existing Sources
PSNS—Pretreatment Standards for New Sources
RCRA—Resource Conservation and Recovery Act
RIA—Regulatory Impact Analysis
SDWA—Safe Drinking Water Act
TC—toxicity characteristic
TCLP—Toxicity Characteristic Leaching Procedure
TRI—Toxic Release Inventory
UIC—Underground Injection Control
UTS—Universal Treatment Standards

Outline

I. Background

A. Summary of the Statutory Requirements of the 1984 Hazardous and Solid Waste Amendments, and Requirements of the 1993 Consent Decree With the Environmental Defense Fund

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), enacted on November 8, 1984, largely prohibit the land disposal of untreated hazardous wastes that do not meet treatment standards established by EPA under section 3004(m). Once a hazardous waste is prohibited, the statute provides only two options for legal land disposal: meet the treatment standard for the waste prior to land disposal, or dispose of the waste in a land disposal unit that has been found to satisfy the statutory no migration test. A no migration unit is one from which there will be no migration of hazardous constituents for as long as the waste remains hazardous. RCRA sections 3004 (d), (e), (f), (g)(5).

The amendments also require the Agency to set levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short term and long term threats to human health and the environment are minimized. RCRA section 3004(m)(1). To date, the Agency has implemented this provision by establishing treatment standards for chemical constituents in hazardous wastes based on the performance of the best demonstrated available technology (BDAT) to treat the waste. EPA may establish treatment standards as specified technologies, as constituent concentration levels in treatment residuals, or both. When treatment standards are set as levels, the regulated community may use any technology not otherwise prohibited (such as impermissible dilution) to treat the waste.

It should be noted that the Agency has proposed risk-based exit levels—levels at which wastes are no longer considered hazardous for purposes of RCRA subtitle C—for the majority of hazardous constituents found in listed hazardous wastes in the Hazardous Waste Identification Rule (HWIR) (60 FR 66344, December 21, 1995). Wastes meeting these levels either before or after treatment consequently could be disposed in units not subject to RCRA hazardous waste management requirements (e.g., landfills without subtitle C permits). A consent decree approved by the U.S. District Court for the District of Columbia requires EPA to finalize the HWIR exit levels by December 15, 1996. In the same notice, the Agency proposed to allow the exit levels for some constituents to serve as alternative, risk-based LDR treatment standards satisfying the "minimize threat" standard of section 3004(m). Where these risk-based levels are higher (less restrictive) than current BDAT treatment standards, they will effectively supersede the BDAT requirements. See *Hazardous Waste Treatment Council* v. *EPA*, 886 F.2d 355, 362–63 (D.C. Cir. 1989).

EPA was required to promulgate land disposal prohibitions and treatment standards by May 8, 1990 for all wastes that were either listed or identified as hazardous at the time of the 1984 amendments (RCRA sections 3004 (d), (e), and (g)(5)), a task EPA completed within the statutory timeframe. EPA was also required to promulgate prohibitions and treatment standards for wastes identified or listed as hazardous after the date of the 1984 amendments within six months after the listing or identification takes effect (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.). EPA also entered into a settlement agreement with the environmental petitioners in *Chemical Waste Management* v. *EPA*, 976 F.2d 2 (D.C. Cir. 1992), cert. denied 113 S. Ct. 1961 (1993) regarding the procedural effect of the mandate entered in that case. This settlement calls for EPA to take action to implement the portions of the opinion dealing with centralized management of wastewaters that initially exhibit a hazardous waste characteristic within specified timeframes.

Today's rule fulfills several provisions of the settlement agreement and proposed consent decree. First, the rule amends the treatment standards for initially characteristic wastewaters managed in centralized wastewater management systems containing land disposal units. Three specific fact patterns are covered by the rule: (1) Where the wastewaters are ultimately discharged and are subject to limitations or standards established under the Clean Water Act (CWA) and the treatment system preceding discharge includes a surface impoundment; (2) where a facility with initially characteristic wastes treats those wastes with CWA-equivalent treatment but ultimately uses a form of land disposal (such as spray irrigation) that is not regulated under the CWA as the final means of disposing of the treated wastewaters; and (3) the initially characteristic wastes are injected into Class 1 non-hazardous deep wells subject to regulation under the Safe Drinking Water Act (SDWA). In all cases, the wastewaters no longer exhibit a characteristic at the point of land disposal. The amended treatment standards require treatment that destroys, immobilizes, or removes the hazardous constituents present in the initially characteristic wastewaters (referred to as "underlying hazardous constituents'' because these constituents are not typically the reason the waste is classified as hazardous). Treatment of the underlying hazardous constituents is nevertheless required in order to minimize the long-term threats land disposal of these wastes can cause. 976 F.2d at 16–17.

EPA is fulfilling provisions of the consent decree by promulgating prohibitions and treatment standards for two "newly listed wastes" wastes from production of carbamate pesticides, and spent aluminum potliners from primary aluminum production.

That being said, the risks addressed by the portion of the rule dealing with centralized wastewater management, particularly UIC wells, are very small relative to the risks presented by other environmental conditions or situations. In a time of limited resources, common sense dictates that we deal with higher risk activities first, a principle on which EPA, members of the regulated community, and the public can all agree. For this reason, the Administration is supporting HR 2036, legislation which passed the House of Representatives, that would remove the mandate to automatically apply LDR treatment standards to decharacterized wastes managed in centralized wastewater management situations regulated by the CWA or the SDWA. If this legislation passes in its current form, it would affect the regulations discussed in sections III., IV., and VI.B. of the preamble. It would not affect the other sections of the preamble and rule. The sections of preamble and rule that are affected by the legislation have been granted 2-year national capacity variance (see §§ 148.18 (c) and (d) and 268.39 (c) and (d)). The sections of preamble and rule not affected by the legislation have more immediate effective dates. If the legislation does pass into law, the Agency could issue an immediately effective final rule remanding the affected portions.

Nevertheless, the Agency is presently required to set treatment standards for these relatively low risk wastes and disposal practices, although there are other actions and projects with which the Agency could provide greater protection of human health and the environment. At the same time, however, EPA has sought to exercise the full extent of its authority under current law to implement these mandates with significantly lower cost while ensuring protectiveness, such as giving credit for up-stream reductions in hazardous constituents, and crafting limited exemptions for wastewaters containing de minimis amounts of hazardous constituents.

B. Treatment Standards for Hazardous Wastes That Exhibit a Characteristic—The D.C. Circuit's Opinion in Chemical Waste Management v. EPA

In *Chemical Waste Management* v. *EPA*, 976 F.2d 2 (D.C. Cir. 1992) cert. denied 113 S. Ct. 1961 (1993), the court made a number of far-reaching rulings pertaining to treatment standards for hazardous wastes that are hazardous because they exhibit a characteristic. First, the court held that land disposal restriction requirements can continue to apply to characteristic hazardous wastes even after they no longer exhibit a characteristic. 976 F.2d at 12–14. Second, to satisfy the requirement in RCRA section 3004(m) that treatment address both short-term and long-term threats posed by a waste's land disposal, it is not enough that characteristic hazardous wastes be treated to remove the short-term property (viz. ignitability, corrosivity, or reactivity) that makes them hazardous. Long-term threats, in the form of toxic underlying hazardous constituents, also must be addressed. 976 F.2d at 16–17. Third (as EPA reads the opinion), the court held that dilution was ordinarily not a permissible means of treating hazardous constituents. Such constituents generally must be destroyed, immobilized, or removed from the waste to satisfy the requirements of section 3004(m), specifically, the requirement that long-term threats be minimized. 976 F.2d at 23, 25 and n. 8; 60 FR at 11706–11708 (March 2, 1995). Fourth, centralized wastewater management systems whose discharge is ultimately regulated under the Clean Water Act, and which dilute characteristic hazardous wastes before treatment in surface impoundments, may continue to do so provided the wastewater treatment system destroys, immobilizes, or removes the same volume of hazardous constituents as would be removed, immobilized, or destroyed if the wastes were treated separately. 976 F.2d at 22–24. In other words, notwithstanding that these wastes are disposed in impoundments without being fully treated, the practice is permissible provided equivalent treatment occurs before the waste is ultimately discharged. Fifth, this option of demonstrating equivalent treatment across a treatment system is not available for Class I nonhazardous deep well injection systems because such units are permanent disposal rather than treatment units. 976 F.2d at 24–6.

These portions of the opinion are addressed in various sections of today's rule.

The Agency is also addressing the issue of equivalent treatment by Clean Water Act treatment systems managing de-characterized wastes in impoundments by promulgating treatment standards and related requirements that would be used to measure this so-called end-of-pipe equivalence. Finally, EPA is implementing the court's mandate with respect to Class I nonhazardous injection wells by requiring treatment of underlying hazardous constituents in ignitable, and corrosive characteristic wastes being injected into such wells, and prohibiting dilution as a means of achieving those standards.

Responses to the comments on EPA's reading of the court's opinion are found in the Response to Comment Background Document which is part of the administrative record for this rule. In general, however, the Agency adheres to the reading set out in the proposed rule's preamble at 60 FR 11706–11708.

EPA is also amending the treatment standards for reactive wastes (other than reactive sulfide and cyanide reactive wastes) so that treatment addresses both the property of reactivity and the threat posed by disposal of underlying hazardous constituents in these wastes (with an exception for ordnance and other explosives which are the subject of an emergency response, as explained in the next paragraph). The Agency is taking this action despite the fact that the court found reactive wastes did not contain sufficient concentrations of hazardous constituents to require any treatment beyond that of removing the characteristic. The Agency believes that it is as likely that reactive wastes contain underlying hazardous constituents at levels that may create a threat as do ignitable and corrosive wastes, and consequently, proposed to regulate reactive wastes in the Phase III proposal. Commenters submitted no data suggesting that reactive wastes do not contain the same types and concentrations of underlying hazardous constituents. Therefore, EPA is promulgating treatment standards for reactive wastes (other than reactive sulfides and cyanides) in this rule that require treatment of all underlying hazardous constituents reasonably expected to be present in the reactive wastes at the point of generation.

EPA is, however, temporarily deferring application of these amended LDR treatment standards for reactive wastes with respect to unexploded ordnance and other explosive devices which are the subject of an emergency response. An emergency response is an action taken to prevent imminent risk of explosion. (See 40 CFR 264.1(g)(8) setting out circumstances where such responses are exempt from RCRA permitting requirements.) During the development of the proposed Military Munitions Rule: Hazardous Waste Identification and Management; Explosives Emergencies; Redefinition of On-site proposed rule (60 FR 56468, November 8, 1995), the Department of Defense, the military services, and other Federal agencies raised concerns that LDR requirements requiring treatment of underlying hazardous constituents might impede the most effective emergency responses involving these materials. If a responding team had to determine LDR applicability before deactivating an explosive subject to an emergency response, the response could be significantly delayed or complicated. Furthermore, concern about LDR applicability might discourage the team from responding at all. This discussion serves as EPA's initial response to these comments.

EPA agrees that the primary goal in emergency responses to explosives is the safe and prompt elimination of immediate threats to human life and property, and the Agency would be concerned if LDR or other regulatory requirements complicated these responses. The issue is too important and potentially complicated to resolve in today's rule. Therefore, EPA is temporarily deferring final action while it considers this issue further.

In deferring action for this limited class of reactive wastes, EPA notes that emergency responses present issues different from routine management of reactive wastes, where there is no competing consideration of need for immediate action to prevent an imminent threat. In non-emergency response management situations, as discussed earlier, the Agency believes these wastes can be fully treated to minimize both short and long-term threats posed by land disposal of wastes.[1] EPA also is amending the treatment standards for wastes exhibiting the toxicity characteristic to include standards for underlying hazardous constituents.

Toxic wastes can also contain underlying hazardous constituents in the same potentially harmful concentrations as ICR wastes. 60 FR at 11706. Today's final rule consequently conforms standards for toxic characteristic hazardous wastes to assure treatment of underlying hazardous constituents as well, when such constituents are present at levels exceeding the minimize threat level (as established either by the current technology-based standards or, if risk-based levels are established, exceeding a risk-based level.) Thus, the prohibitions and standards in today's rule will apply to ignitable, corrosive, reactive and toxic characteristic wastes, as just discussed.

[1] EPA also notes that it is not reopening the issue of open burning/open detonation of reactive wastes. In 1986, EPA determined that such activities are not a form of land disposal. See 51 FR at 40580 (Nov. 7, 1986).

II. Miscellaneous Issues for Which EPA Is Not Finalizing an Approach in This Final Rule

A. Treatment Standards for Organobromine Wastes

Organobromine wastes are not yet listed as hazardous. EPA anticipates making a final listing determination in a future rulemaking.

Although EPA proposed treatment standards for organobromine wastes, it clearly would be putting the cart before the horse to promulgate treatment standards in advance of a determination of whether the wastes are hazardous. The Agency intends to establish treatment standards for organobromine wastes should these wastes are listed in the future.

B. Potential Prohibition of Nonamenable Wastes From Land-Based Biological Treatment Systems

The proposed rule contained an extensive discussion of whether certain wastes should be prohibited from placement in biological treatment surface impoundments because they are not amenable to biological treatment. To allow more time to gather comments, the Agency has decided to address this issue in the LDR Phase IV rule, which was proposed on August 22, 1995 (60 FR 43654) and is scheduled to be finalized in June of 1996.

C. Certain Sections of Completing Universal Treatment Standards

The LDR Phase III proposed rule included a section on the completion of universal treatment standards (60 FR at 11727, March 2, 1995). Possible nonwastewater universal treatment standards (UTS) for eleven constituents were discussed in the proposal, and comments and data were solicited. In general, commenters felt more data should be gathered before EPA proposes nonwastewater standards for these constituents, and EPA agrees. EPA had also solicited comment and data on extending certain universal treatment standards to fill gaps in the § 268.40 table of universal treatment standards where "NA" appeared for either the wastewater or nonwastewater form of a regulated hazardous constituent. Commenters were opposed to this, stating that it would be arbitrary to add a standard to a waste code where before there was none without supporting data. The Agency again agrees. Therefore, EPA is not taking final action at this time.

D. Prohibition of Hazardous Waste as Fill Material

EPA proposed to prohibit use of hazardous waste as fill material. 60 FR at 11732. Because issues raised in the proposal are related to those in a number of other pending rulemakings, including the Hazardous Waste Identification Rule, and the proposed rule relating to land-based uses of hazardous waste K061 (59 FR 67256 (Dec. 29, 1994)), EPA is not taking final action on the proposal at this time.

E. Point of Generation

The Agency discussed possible changes that could be made to the "point of generation"—or point at which LDR requirements attach to a hazardous waste (see 60 FR 11717, March 2, 1995). The Agency is still considering the options discussed in the proposal and potentially other options not discussed. The Agency will reopen the point of generation issue for further comment, and is intending to finalize an option in a future rulemaking.

F. Prohibition on Using Iron Filings to Stabilize Spent Foundry Sand

The Agency proposed designating the practice of adding iron dust/filings to spent foundry sand as impermissible dilution (60 FR 11731, March 2, 1995). The Agency is gathering data on the stability of the chemical bond formed between the iron and lead in the spent foundry sand. After the Agency analyzes these data, as well as further studies the public comments on this issue, it may take final action on the proposal.

III. End-of-Pipe Equivalence: Treatment Standards for Clean Water Act (CWA) and CWA-Equivalent Wastewater Treatment Systems

A. Types of Facilities to Which Treatment Standards Apply

As explained above, the D.C. Circuit established a standard of so-called end-of-pipe equivalence, allowing CWA treatment systems with surface impoundments to dilute characteristic wastes before land disposal in those impoundments without violating LDR requirements, provided the treatment system destroys, immobilizes, or removes an equivalent amount of hazardous constituent as if the characteristic waste were treated separately to meet RCRA standards. EPA is establishing in this rule the treatment standards that must be satisfied in order to demonstrate that equivalent treatment is occurring.

These treatment standards apply to the following types of facilities: (1) facilities treating formerly characteristic wastes in surface impoundments whose ultimate discharge is subject to regulation under either section 402 or 307 of the CWA. The rule thus encompasses both direct dischargers (facilities discharging to navigable waters) and indirect dischargers (those discharging to POTWs); and, (2) permitted and unpermitted zero dischargers engaging in treatment that is equivalent to that of the CWA-regulated facilities (see 40 CFR 268.37(a) defining CWA-equivalent treatment), including facilities treating formerly characteristic wastes in tanks prior to release on the land for such purposes as irrigation or land treatment.

EPA also wishes to make clear the types of wastewater management situations to which these standards do not apply. First, the standards do not apply to facilities that discharge to navigable waters or POTWs and that manage decharacterized wastes in treatment systems without surface impoundments. Consequently, if a facility generates a characteristic waste, dilutes it so that it no longer exhibits a characteristic, and then treats the waste in tanks before ultimate discharge to a navigable water or a POTW, this rule does not apply. There is no land disposal of a prohibited waste occurring and consequently no RCRA requirement that the characteristic waste be pretreated. Applicable CWA limitations and standards would, of course, continue to apply (as would a one-time recordkeeping requirement under RCRA (see § 268.9).

Second, the standards do not apply in situations where RCRA hazardous waste (subtitle C) impoundments are used. The statute already sets out the requirements for subtitle C impoundments receiving wastes which may not yet have met a treatment standard. RCRA section 3005(j)(11). These requirements are not altered by the Third Third opinion. 976 F. 2d at 24 n. 10.

Finally, in response to comment, EPA has determined that the end-of-pipe treatment standards should not apply to stormwater impoundments. Stormwater impoundments are used by treatment facilities to catch stormwater during rain events, because their biological treatment systems cannot adequately handle such sudden, large volumes of water. At some treatment facilities, however, because they have a combined wastewater system, stormwater impoundments also receive process water containing decharacterized wastes.

The Agency agrees with commenters who stated that stormwater impoundments are necessary to maintain the efficacy of biological treatment units. In addition, such impoundments are empty most of the time because they are designed for emergency rain events. In the Third Third opinion, the court focused on wastewater treatment surface impoundments. It seems likely that stormwater impoundments were outside the court's consideration. Furthermore, imposing treatment standards on such impoundments could require treatment of the stormwater/decharacterized waste before it could permissibly go into the impoundment, not a practical alternative during a major storm event. Alternatively, imposing LDR treatment standards might require the facility to replace its combined wastewater system, which would be a major disruption to most of these facilities and hardly seems justified when stormwater impoundments are used only on an emergency basis. These are the very types of disruptions that the integration clause in RCRA 1006(b) is intended to prevent. Consequently, EPA is indicating that today's rule does not apply to stormwater impoundments.

B. End-of-Pipe Treatment Standards

The treatment standards that EPA is promulgating for characteristic wastewaters are found in the table of LDR treatment standards at 40 CFR 268.40 and 268.48. As explained more fully in the following section, these treatment standards generally adopt the limitations or standards that apply to the facility's discharge as the RCRA treatment standards. The reason EPA is taking this approach is that the CWA industry category or case-by-case industrial POTW limitations and standards represent specific determinations of what Best Available Treatment (BAT) technology is capable of achieving for that plant's wastewater, or, in the case of Water Quality Criteria-based limitations, what an appropriate limit is based on BAT treatment plus risk-based considerations. In the event a hazardous constituent present in the wastewater at point of generation of the original characteristic hazardous waste is not already regulated pursuant to a CWA limitation or standard, the RCRA Universal Treatment Standard for that constituent would apply.

These treatment standards may be met at the CWA point of compliance, typically the point the wastewater is discharged to a navigable water or a POTW. For CWA-equivalent facilities, the treatment standards must be met at the point where the wastewater is sprayed onto the land in irrigation (or similar) activities, or injected into a non-Class I injection well. This accords with the equivalence standard established by the court: "hazardous constituents are [to be] removed from the waste before it enters the environment." 976 F. 2d at 24; see also id. at 23 and n. 8. Most commenters likewise agreed with an end-of-pipe measuring point. Indeed, requiring full treatment before ultimate discharge could destroy the very accommodation with the CWA regime that the court thought critical. See 60 FR at 13677 (Aug. 22, 1995).

However, EPA also agrees with commenters that there is no reason to impede individual facilities from choosing an alternative point of compliance (i.e. other than end-of-pipe) provided the facility can demonstrate that the prohibited waste (the decharacterized portion of the combined effluent) has been treated by means other than dilution to remove an equivalent mass of hazardous constituents. This is specifically consistent with the principle announced in the Administration's report on "Reinventing Environmental Regulation" to "provid[e] maximum flexibility in the means of achieving our environmental goals, but requiring accountability for the results". Consequently, the Agency is allowing a facility to designate any compliance point downstream of treatment that destroys, immobilizes, or removes hazardous constituents as the point for demonstrating that equivalent treatment occurs. This point can, but need not be, the NPDES or pretreatment point of compliance. Examples of alternative points of compliance that would be permissible (assuming the treatment standard is being satisfied) would be prior to initial placement in an impoundment, or after treatment in an impoundment but before final discharge.

The Agency also agrees with commenters that there can be alternative points of compliance for different underlying hazardous constituents. Again, the reason is to allow flexibility of compliance alternatives when a facility can demonstrate that it is destroying, immobilizing, or removing an equivalent mass of hazardous constituents through wastewater treatment as would be achieved by segregating the characteristic wastestream for separate RCRA treatment. Thus, if a facility generated a characteristic waste containing metal and organic underlying hazardous constituents and the waste was treated sequentially by means not involving impermissible dilution, there could be different compliance points for the metal and organic hazardous constituents.

EPA notes, however, that if alternative points of compliance are utilized, enforcement would normally be pursuant to RCRA, not the Clean Water Act. This is by necessity, since CWA permits (or, for indirect dischargers, control mechanisms) would not normally apply to effluent quality before final discharge. See further discussion on means of implementing today's standards below in this preamble.

C. Why CWA Limitations and Standards Can Also Be RCRA Treatment Standards

As explained above, when a hazardous constituent is already subject to a CWA industry category or Water Quality Criteria-based limitation, or a case-by-case industrial POTW limitation or standard, the Agency believes (and the final rule provides) that the CWA limitations and standards satisfy RCRA section 3004(m) requirements and consequently become the RCRA treatment standard for purposes of demonstrating equivalent treatment. EPA believes that this is an obvious and effective means of integrating CWA and RCRA requirements, in accord with the court's objective. 976 F. 2d at 22; RCRA section 1006(b). This approach was generally supported by commenters as a reasonable means of satisfying the court's mandate and the underlying policy of integration of the two statutes.

Several commenters, however, argued that CWA limitations and standards could not be equivalent to RCRA because such standards can reflect (among other things) "the cost of achieving such effluent reduction", and "the age of equipment and facilities involved". CWA section 304(b)(2)(B) (factors to be considered in determining Best Available Technology). EPA disagrees. While it is true that technology-based standards developed to address toxic pollutants from various industrial categories are developed after consideration of levels that can be achieved through application of the best available technology economically achievable, the CWA limitations and standards nevertheless represent the best evaluation of what technically advanced wastewater treatment is capable of achieving for a particular industry's (or, in some cases, particular plant's) wastewater. Although there is no requirement that a particular treatment technology must be used to achieve the facility's limits, it is expected that plants utilizing BAT will have treated their effluent so that there are substantial reductions in concentration and mass of hazardous constituents. As the Agency has stated many times, EPA believes that section 3004(m) is satisfied by treatment that substantially destroys, immobilizes, and removes the hazardous constituents that are present in the waste, notwithstanding that minor amounts of hazardous constituents remain after treatment. Put another way, the statute does not require that every conceivable threat posed by land disposal be eliminated by treatment. 55 FR at 6641 and n. 1 (Feb. 26, 1990); 56 FR at 12355 (March 25, 1991); 57 FR 37259 (August 18, 1992); 55 FR at 22596 (June 1, 1990). In fact, the legislative history states explicitly that the treatment standards are not to be technology forcing, but rather are to utilize the available effective treatment technologies. 130 Cong. Rec. S. 1978 (daily ed. July 25, 1984) (statement of Sen. Chaffee); 56 FR at 12355. That is precisely what EPA has done here.

Second, with specific regard to use of CWA limitations, EPA notes that virtually all of the current LDR treatment standards for wastewaters are already drawn from CWA limitations and standards. See 55 FR at 22601 (wastewater standards for U and P wastes and F039, which essentially became the universal treatment standards, were transferred from treatment data from CWA programs), and see also the Final BDAT Background Document for U and P Wastes and Multi-Source Leachate (F039) Volume C (documenting that most of existing RCRA wastewater standards were transferred from CWA limitations and standards). Moreover, the technologies that are often used to achieve CWA limitations and standards are, in most cases, the same technologies upon which the RCRA Universal Treatment Standards are based. As EPA has already stated, "because most treatment technologies cannot be so precisely calibrated as to achieve, for example, 3.5 ppm rather than 2.7 ppm, the likely result is that the same amount of treatment will occur.'' 59 FR at 47989 (Sept. 19, 1994). Since frequently the same technologies are used to treat wastewaters, EPA expects the degree of treatment to be comparable.

EPA also emphasizes that RCRA section 1006(b) requires EPA (among other things) to integrate provisions of RCRA and the CWA when implementing RCRA, and to avoid duplication to the maximum extent possible with CWA requirements. The Agency feels it is accomplishing this requirement by allowing a constituent-specific, CWA treatment standard to satisfy RCRA 3004(m). The Agency reiterates that a technology-based CWA limitation or standard for a hazardous constituent satisfies RCRA because such a limitation or standard directly reflects the capability of BAT technologies to treat a specific industry's or facility's wastewater, whereas the RCRA UTS for wastewaters were developed by transferring performance data from various industries, and thus EPA need not make that same transfer when industry-specific (or plant-specific) wastewater treatment data is available.

A water-quality based limitation would also satisfy RCRA section 3004(m). A CWA water quality-based limitation must be at least as stringent as the limitations required to implement an existing technology-based standard. (See CWA section 301(b)(1)(c).) Even where there is no existing BAT limitation for a toxic or nonconventional pollutant, a permit writer must determine whether BAT would be more stringent than the applicable water quality-based limitation, and again, must apply the more stringent of the two potential limitations. (40 CFR 125.3(c)(2).)

If a facility has received a Fundamentally Different Factors (FDF) variance, the limitations established by that variance also satisfy RCRA requirements. Limitations established by the FDF variance process are technology-based standards reflecting facility-specific circumstances, and hence can appropriately be viewed as BDAT as well, just as with RCRA treatability variance standards. See 51 FR at 40605 (Nov. 7, 1986).

EPA also believes that there are adequate constraints in the CWA implementing rules to prevent these end-of-pipe standards from being achieved by means of simple dilution. First, many of the effluent limitation guidelines and standards regulate the mass of pollutants discharged, and thus directly regulate not only the concentration of pollutant discharged but the degree of wastewater flow as well. Even where rules are concentration-based, NPDES permit writers can set requirements which preclude excessive water use, and EPA has so instructed permit writers. (See 58 FR 66151, December 17, 1993, encouraging permit writers to estimate reasonable rate of flow per facility and factor that flow limit into the permit.) These permit conditions can take the form of best management practices, explicit mass limitations, and conditions on internal waste streams. 40 CFR 122.44(k); 122.45 (f), (g) and (h).

Indirect dischargers are also subject to specific CWA dilution rules in both the general pretreatment rules and the Combined Wastestream Formula (as well as through many of the categorical standards). 40 CFR 403.6 (d) and (e). Many of the guidelines and standards also preclude addition of stormwater runoff to process wastewater to preclude achieving treatment requirements by means of dilution. The Agency is accordingly of the view that end-of-pipe equivalence would be achieved by treatment that removes, immobilizes, or destroys hazardous constituents, and therefore we have determined the treatment satisfies the requirements of RCRA section 3004(m).

EPA emphasizes, however, that it is not addressing the issue of whether cross-media transfers of hazardous constituents become so extensive as to invalidate the wastewater treatment function of a land-based unit. This is the subject of the pending Phase IV proposed rule (60 FR at 43654 (August 22, 1995)), and will be addressed as part of that proceeding.

D. When CWA Limitations and Standards Become the RCRA Standards

Today's rule establishes the following principles:

1. Direct Dischargers

A CWA limitation becomes the RCRA treatment standard as well in the following situations: (a) where there is a categorical BAT or NSPS limitation for the underlying hazardous constituent; (b) where there is a facility-specific limitation for the underlying hazardous constituent pursuant to 40 CFR 125.3 (c)(2) and (d)(3); (c) where there is a Water Quality-based limitation established pursuant to 40 CFR 122.44(d); or (d) where the facility has received a Fundamentally Different Factors variance establishing an alternative limitation pursuant to 40 CFR Part 125 subpart D.

2. Indirect Dischargers

A Clean Water Act pretreatment standard becomes the RCRA treatment standard as well in the following circumstances: (a) where there is a categorical PSES or PSNS for a particular hazardous constituent; and, (b) where POTWs have developed local limits, in addition to categorical standards, to prevent pass through and interference and apply them to indirect dischargers.

EPA proposed that if pretreatment standards reflected a finding that a particular hazardous constituent will not pass through to navigable waters because of efficacious treatment by the POTW, that standard would also satisfy RCRA. The reason is that there will be full-scale treatment of the hazardous constituent before its final release into the environment. Such full-scale treatment satisfies the court's equivalency test. 60 FR at 11711. EPA is adopting this provision in today's rule for these reasons.

The Agency also proposed that pretreatment standards based on interference with POTW operations would not be considered to satisfy RCRA. *Id.* EPA is adopting this position in the final rule. The reason is that interference findings reflect the effect the pollutant may have on overall POTW treatment, not necessarily treatment of the particular constituent. Because the relationship of an interference-based standard with treatment of a particular hazardous constituent is tenuous, EPA does not believe that such a standard can be said to be equivalent to RCRA treatment. Several commenters disagreed with this reasoning, but provided no empirical information calling the Agency's conclusion into question. EPA is consequently adopting this provision as proposed.

3. Zero Dischargers Performing CWA-Equivalent Treatment

In the May 24, 1993 emergency rule, EPA established the principle that zero discharge facilities performing CWA-equivalent treatment on decharacterized wastewaters would be subject to the rules for direct dischargers, and thus would retain the ability to use surface impoundments as part of the treatment process for decharacterized wastes provided equivalent treatment occurs. 58 FR at 29863–29864. The reason is that these facilities can be performing wastewater treatment identical to, or more stringent than, that required of direct dischargers, and thus the same policy of integrating RCRA and the CWA should apply to such facilities. *Id.*

EPA is consequently also applying today's rules on equivalency to zero dischargers performing CWA-equivalent treatment, including tank-based systems that ultimately land dispose rather than discharge treated effluent. "CWA-equivalent treatment" is defined in 268.37(a) to mean "biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation/ sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies".

E. Implementation

1. Where Permits Contain Standards for Hazardous Constituents

If a direct discharger subject to the rule (i.e. generating a characteristic waste containing underlying hazardous constituents at concentrations exceeding the treatment standard at the point the waste is generated, and is treating those decharacterized wastes in surface impoundments) has an NPDES permit containing a limitation for that hazardous constituent based on BAT, NSPS, BPJ, or a water quality standard, then there are no independent RCRA requirements beyond documenting in the facility's records that this is the facility's mode of compliance.

EPA notes further that if the Agency (or authorized State), as part of the CWA decisionmaking process for setting the limitations, affirmatively decided that such hazardous constituents need not be regulated due to low toxicity, low bioavailability or other environmental factors and that fact is reflected in the rulemaking record, permit or permit record, no additional RCRA standards would apply. If the rulemaking or permit and permit record do not contain such a finding, the permitting authority should reexamine the NPDES permit upon reissuance in order to clarify whether such hazardous constituents need not be regulated. During the time between the date this rule becomes effective and the date the permit is reissued, however, the RCRA Universal Treatment Standards for those constituents must be met.

In addition, if EPA (or an authorized State) affirmatively decided either in the rulemaking or in the permitting process that a particular hazardous constituent is controlled through controls on an indicator pollutant, then again, no additional RCRA standards would apply. For this purpose, however, the Agency would only accept as a valid indicator situations where a toxic pollutant parameter is used as an indicator for another toxic pollutant. The Agency does not believe that use of conventional pollutants (such as BOD or COD) as indicators for toxic constituents guarantees the type of equivalent treatment of hazardous constituents, which EPA feels is necessary to implement the equivalence requirement. 976 F. 2d at 23 n. 8.[2]

[2] In making this statement, EPA is of course not calling into question the use of conventional pollutants as valid indicators to satisfy Clean Water Act requirements. The language in the text is directed solely at implementing the court's mandate for purposes of RCRA.

2. Where Permits Do Not Contain a Limitation for a Hazardous Constituent

If the CWA permit either does not contain a limitation for the pollutant or does not regulate the pollutant through an indicator, or in cases when this rule becomes effective before the reissuance of a facility's permit, the RCRA universal treatment standards would apply as they do for any other RCRA hazardous wastestream. In this situation, the owner or operator of a facility has several choices. The owner/operator could do nothing, in which case the hazardous constituent would be subject to the UTS. These standards would be implemented by rule, and thus would not be embodied in a CWA permit. Enforcement consequently would be solely under RCRA. As noted earlier, the point of compliance could, but need not be, at the end-of-pipe point of discharge.

In the alternative, a facility could seek amendment of its NPDES permit pursuant to § 122.62(a)(3), requesting that the applicable permitting authority modify the permit at reissuance, or sooner, to add limits for the underlying hazardous constituents reflecting BAT for that pollutant at the facility.[3] Assuming proper design and operation of the wastewater treatment technology, a permit writer in such a case could modify the permit to add a limitation for the pollutant based on Best Professional Judgement reflecting actual BAT treatment (40 CFR 125.3(c)). Modification requests would be processed pursuant to the procedures found at § 124.5. The modified permit limitation would be a CWA requirement and enforceable solely under that statute, but would be deemed by the Agency to satisfy RCRA 3004(m), so that meeting UTS per se would not be required.

A final alternative is for the facility to seek a RCRA treatability variance. EPA is amending the grounds for granting such a variance to include situations where a facility is treating decharacterized wastes by treatment identified as BAT or NSPS (New Source Performance Standards), the technology is designed and operated properly, but is not achieving the UTS (see § 268.44(a)).

3. Indirect Dischargers

The same alternatives exist for indirect dischargers. If an underlying hazardous constituent is regulated by a categorical PSES, PSNS, or by a local limit in a control mechanism reflecting PSES or PSNS—level treatment, then that standard satisfies both RCRA and the CWA. In addition, if there is no pretreatment standard (i.e., PSES/PSNS) for an underlying hazardous constituent, because the Agency determined that there was no pass through, then section 3004(m) is satisfied and the RCRA standard for that underlying hazardous constituents does not apply.

If an underlying hazardous constituent is not regulated nationally by a PSES or PSNS, or by a local limit, it becomes subject to the UTS for that constituent. That UTS would be enforced as a RCRA standard. However, in cases where an underlying hazardous constituent is not already subject to categorical PSES, categorical PSNS, or to a local limit in a control mechanism reflecting PSES or PSNS-level treatment, water quality, or pass through, the control mechanism between the indirect discharger and the applicable control authority would have to be modified in order to avoid application of the UTS by rule. EPA is amending § 403.5(c)(1) and § 403.5(c)(2) of the pretreatment rules to specifically authorize control authorities to make such determinations.

The final option is for a facility to obtain a RCRA treatability variance. Thus, the amendment to the treatability variance rules also applies to indirect dischargers properly operating technology identified as the basis for their PSES or their PSNS standard.

4. Zero Dischargers Performing CWA-Equivalent Treatment

The implementation options for zero dischargers performing CWA-equivalent treatment are similar. Some of these facilities may have CWA permits authorizing specified levels of discharge. If these permit limitations apply to underlying hazardous constituents present in the RCRA-prohibited portion of the discharge, the CWA permit limit satisfies RCRA as well. The facility also could seek to amend the CWA permit to add limitations for the hazardous constituent. Enforcement then would be exclusively pursuant to the CWA.

If the zero discharger has no CWA permit, or the permit does not contain limitations for underlying hazardous constituents and is not amended to do so, then the facility would have to meet the RCRA UTS or an alternative standard established by treatability variance either at the point of discharge[4] or at an earlier point of its choosing (assuming, of course, that a valid demonstration of bona fide treatment can be made at an earlier point).

5. Implementation When CWA Standards and Limitations Will Not Be the Exclusive Standard

If the facility treats to UTS and does not modify its CWA permit or control mechanism to include a CWA standard/limitation for an underlying hazardous constituent, EPA is finalizing minimal recordkeeping requirements, under RCRA authority. Generators can use their knowledge to identify the underlying hazardous constituents reasonably expected to be present at the point of generation of the ICRT wastes which are not covered by a CWA limitation or standard and hence must be treated to meet UTS (assuming no permit modification). EPA is requiring that this information be kept on-site in files at the facility. The facility will then monitor compliance with the UTS standard for each of these constituents at the point of ultimate discharge or alternative compliance point, on a quarterly basis, and results of this monitoring must be kept in the facility's on-site files. An exceedence of the RCRA UTS standard must be documented in the facility's on site records.

These same requirements apply to facilities without NPDES permits documenting compliance as zero dischargers with CWA-equivalent treatment who are affected by this rule. The absence of a permit necessitates some alternative means of documenting compliance, and the scheme outlined above seems to be the least burdensome scheme which would still provide a reasonable means of enforcing this rule.

6. RCRA Controls Over Point Source Discharges and Domestic Sewage

Both RCRA and the implementing regulations provide that point source discharges and domestic sewage (including mixtures of domestic sewage with other wastes) are not subject to

[3] EPA is interpreting the language in § 122.62(a)(2) to indicate that the D.C. Circuit's opinion in the Third Third case is new information warranting reopening a permit.

[4] The point of compliance for a zero discharger choosing the point of discharge as a compliance point would be at the point of ultimate disposal. For those zero dischargers who discharge to a dry river bed (common in the western U.S.) not considered a "water of the U.S." under the CWA, the point of compliance would be at the end-of-pipe. For those zero dischargers who spray irrigate, or otherwise place the wastewaters on the land after treatment in the surface impoundment, the point of compliance would be at the point just prior to the land placement. Furthermore, zero dischargers treating wastewaters in a tank system followed by spray irrigation or another form of land placement are also subject to this rule. For those zero dischargers who use evaporation ponds, the point of compliance is before the wastewater enters the surface impoundment, as this is the ultimate disposal point.

RCRA subtitle C jurisdiction. RCRA section 1004(27) and § 261.4(a) (1) and (2). Some commenters questioned whether by allowing CWA limitations and standards to satisfy the RCRA treatment standard requirement, EPA were somehow imposing RCRA controls where it lacks authority to do so.

This is not the case. EPA is creating here a mechanism for evaluating whether RCRA-equivalent treatment has occurred for purposes of determining whether surface impoundments (i.e. RCRA land disposal units) can permissibly be used as part of that treatment process. 976 F. 2d at 22–24. The effect, for RCRA purposes, of failing to satisfy the limitations or standards is that the facility has engaged in illegal land disposal by virtue of not performing equivalent treatment. Id. Thus, the effect of the rule is on activity upstream of the discharge point, and these activities are within RCRA's jurisdictional purview.

7. Applicability to the Pulp and Paper Industry

The concerns about integration of CWA and RCRA standards are particularly acute with respect to the pulp and paper industry. EPA is at a critical stage in developing comprehensive multi-media rules for this industry (to control both hazardous air emissions and wastewater discharges). These rules were proposed at 58 FR 66078 (Dec. 17, 1993) and are slated for promulgation by mid-1996. The rules should fundamentally affect (for the better) the types of wastewaters managed at pulp and paper facilities and the potential releases of hazardous constituents from such wastes. The Agency believes that it would be putting the cart before the horse, and would fail to properly integrating RCRA with the CWA (and potentially CAA in this case) by proceeding with implementation of the court's decision for this industry in advance of completion of this rulemaking. Cf. *Edison Electric Inst.* v. *EPA,* 2 F. 3d 438, 453 (D.C. Cir. 1993) noting when temporary deferrals of action to allow better integration of overlapping statutes is permissible. The Agency will revisit the question of how to implement the court's decision for the pulp and paper industry upon completion of the existing multi-media rulemaking.

IV. Treatment Standards for Class I Nonhazardous Injection Wells and Response to Comments

A. Introduction

Generally, Class I nonhazardous injection well owners/operators injecting decharacterized ICRT wastes do not substantially treat their waste beyond removing the characteristic by aggregating and diluting wastestreams, plus filtering of solids in order to facilitate injection. There are as many as 100 such nonhazardous facilities in addition to the approximately 54 hazardous facilities injecting ICRT wastes. As discussed in the Phase III proposed rule, EPA estimates that the average flow of a "typical" Class I nonhazardous well is 107,000 gallons/day. Typically, the volume of hazardous wastes comprises 25% or less of the aggregated injected wastestream.

In the Third rule, EPA proposed that characteristic wastes were not prohibited from injection into these deep wells provided they no longer exhibited a characteristic at the point they are injected.e. land disposed. 60 JR at 11704–11705. The D.C. Circuit rejected this portion of the rule, holding, in EPA's reading of the opinion, that the statutory requirements could not be satisfied absent treatment that addressed both short term and long term threats posed by land disposal of the waste, and hence that hazardous constituents in the waste had to be destroyed, removed or immobilized before injection, not merely diluted. 60 JR at 11706–11708. EPA is implementing that mandate in this rule. (However, EPA reiterates, as it did at proposal, that EPA is taking this action to implement the court's mandate, not because it is an environmental priority, or prudent use of the Agency's or the regulated community's resources. The Administration is in fact pursuing a legislative change which would restore EPA's original policy determination reflected in the 1990 Third rule.)

The effect of today's final rule is to prohibit the land disposal of characteristic waste streams at the point they are generated. If those wastes contain underlying hazardous constituents at levels exceeding the Universal Treatment Standards and (as explained further below) at levels and volumes greater than designated *de minims* amounts, those constituents would have to be destroyed, removed, or immobilized before the waste is injected. This could be accomplished either by segregating the characteristic portion of the injectate for treatment, or by treating the commingled injectate before disposal (i.e. before injection). The rule further provides that if a facility removes an equivalent mass of the hazardous constituent through source reduction, or waste treatment, that the treatment standard is satisfied. The final, alternative means of compliance is for the unit to have received a no-migration determination.

A number of commenters believed that aggregation or dilution of wastes to remove the hazardous characteristic of the waste stream prior to injection was sufficient and that the requirement to treat underlying constituents was legally unnecessary and onerous. EPA's reading of the Third Third opinion and section 3004(m) is that treatment that destroys, immobilizes, or removes hazardous constituents is required, and that this requirement is not satisfied merely by dilution. The statutory findings of the inherent uncertainty of land disposal of hazardous wastes, the propensity to bioaccumulate these same constituents, the statutory goals of waste minimization and proper waste management, plus the legislative history documenting Congressional intent not to permit treatment by dilution supports the Agency in rejecting these comments. 60 FR at 11706–708. Therefore, the Agency has decided not to allow Class I nonhazardous wells to dilute or aggregate their waste streams in order to fulfill, substitute, or avoid treatment levels or methods established in the LDRs. See the dilution prohibition added in § 148.3 of today's final rule.

Furthermore, the Agency, as proposed, is expanding the applicability of 40 CFR Part 148 to now require owners/operators of Class I nonhazardous wells to determine whether LDRs apply to their facilities.

Commenters likewise sharply questioned the Agency's determinations as to when land disposal prohibitions should attach, and state, correctly in the Agency's view, that the opinion did not compel a determination that prohibitions must attach at the initial point of waste generation or when underlying hazardous constituents are present at that point in concentrations exceeding the UTS. EPA is in fact pursuing alternatives on both of these fronts. The Agency proposed alternatives to the strictest point of generation approach, 60 FR at 11715–716, and expects to take final action on this proposal well before the effective date of the Phase III prohibitions for Class I non-hazardous UIC wells. The source reduction compliance option in this rule is a related means of dealing with this issue, since it can be conceptualized as allowing the requisite hazardous constituent reductions to be achieved by means other than downstream treatment notwithstanding presence of hazardous constituents above UTS at what is technically point of waste generation.

With regard to whether presence of hazardous constituents above UTS would be the trigger level for the LDR prohibition, EPA has recently proposed risk-based hazardous constituent concentration levels which would implement the "minimize threat" requirement in section 3004(m), and would cap the technology-based treatment standards whenever the technology-based standards are lower (60 FR 66344, December 21, 1995). The *de minimis* feature of today's rule further addresses situations where EPA believes that prohibitions need not apply due to the low concentrations and volumes of hazardous constituents in the decharacterized portion of the injectate.

B. Compliance Options for Class I Nonhazardous Wells

In the proposed rule, the Agency indicated that facilities could segregate their hazardous wastes, and treat just that volume of the total waste stream to UTS levels in order to conform to the treatment requirement. A number of commenters maintained that the Agency oversimplified this approach and that such segregation was impractical from both a technical and economic standpoint. EPA acknowledges that many facilities may not practically be able to segregate streams. These facilities may utilize of other LDR compliance options as discussed below.

One option would be to apply for an exemption from treatment standards via the no-migration petition variance. EPA is promulgating a clarifying revision to 40 CFR 148.20 which allows facilities to seek a no-migration variance for their Class I nonhazardous wells, and has long indicated that this compliance option is available (see pp. 25–27, Supplemental Information Report prepared for the Notice of Data Availability, January 19, 1993, 58 FR 4972). If these facilities demonstrate to EPA that their formerly characteristic wastes (including any hazardous constituents) will not migrate out of the injection zone for 10,000 years, or no longer pose a threat to human health and the environment because the wastes are attenuated, transformed, or immobilized by natural processes, then they may continue to inject without further treatment.

A significant number of commenters responded to the proposed rule's discussion on the Agency's position on granting no-migration petitions. Comments included that petitions were a too costly option, took too much time to be processed, generic petitions for Class I non-hazardous wells should be granted, and existing no-migration exemptions should not require modification to include Phase III wastes. These comments, among others, will be discussed in detail in the "Response to Comments" background document for this rule, but basically many had partial merit.

First, although the Agency has estimated earlier that the average petition costs an operator $343,000, several individual petition reviews have far exceeded that amount. The Agency will examine the possibility of revising petition cost data in future LDR rules. Second, although a petition may take up to 3 years to process, the Agency (as noted above) indicated as early as 1992 (after the Third Third opinion) that it would begin review of Class I nonhazardous injection well no-migration petitions if submitted (58 FR 4972, January 19, 1993). Although time and resource restraints on the Agency are real, the Agency will continue to work with affected Class I operators in order to facilitate the no-migration petition review process. Third, although EPA has established a reasonable knowledge base on the review process for Class I hazardous facilities, it cannot automatically infer that all Class I nonhazardous facilities will successfully make a no-migration demonstration. Well site geology, hydrogeology, abandoned well area of review, and the specific characteristics of the injectate and receiving formation are site specific factors which, as a factual matter, must be evaluated individually in order to demonstrate "to a reasonable degree of certainty" (RCRA section 3004(g)(5)) that the no migration standard has been satisfied. See Supplemental Report to Notice of Data Availability, January 19, 1993, at 25–26 9. It must be remembered that not every Class I injection well applying for the variance has been able to make the demonstration, and that one salutary effect of the no migration process has been to identify certain (albeit a limited number of) wells that would not be capable of adequately containing injectate over the long term.

EPA agrees completely with commenters, however, that wells that already have approved no migration exemptions are not affected by the Third Third opinion and thus are not affected by land disposal restrictions affecting decharacterized wastes. (In fact, EPA does not read the proposal to suggest otherwise.) Absent a change in the waste being injected, there is no reason to reopen no migration determinations that have already evaluated the entire injected waste stream. 57 FR at 31963 (July 20, 1992).

EPA is also promulgating additional means for Class I nonhazardous facilities to comply with the LDR requirements. Revisions to 40 CFR 148.1(c)(1) and 148.4 will allow Class I nonhazardous owners and operators to apply for a case-by-case extension of the capacity variance for up to one year (renewable for up to an additional year) in order to acquire or construct alternative treatment capacity. Based on experience, EPA believes that the availability of the case-by-case extension coupled with national capacity variance(s) should allow operators more than adequate time to acquire alternative treatment or complete the no-migration petition process. Two other options include the pollution prevention option and the de minimis volume exclusion.

C. Pollution Prevention Compliance Option

The final rule provides an alternative means of obtaining the reductions in mass loadings of hazardous constituents mandated by the Third Third opinion. Under this alternative, mass reductions can be achieved by removing hazardous constituents from any of the wastestreams that are going to be injected, and these reductions in mass loadings can be accomplished by means of source reduction (i.e. equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control), recycling, or conventional treatment. As an example, if a facility can make process changes that reduce the mass of cadmium by the same amount that would be removed if the prohibited wastestream was treated to satisfy UTS, the facility would satisfy LDR requirements. The facility could also remove cadmium from any of the streams (prohibited or non-prohibited) which are going to be injected, or could find a means of recycling some portion of the injectate to reduce injected mass loadings of cadmium. In all cases, the result would be that the mass loading of hazardous constituents into the injection unit would be reduced by the same amount as it would be reduced by treatment of the prohibited, characteristic portion of the injectate. 976 F. 2d at 23 n. 8; see also *Specialty Steel Inst.* v. *EPA*, 27 F. 3d 642, 649 (D.C. Cir. 1994) (treatment standards that result in lower volume of waste to be disposed—precisely what the alternative standard here can achieve—are a permissible means of complying with RCRA section 3004 (m)).

Commenters further requested that this alternative be available on a hazardous constituent by hazardous constituent basis. EPA agrees that this is reasonable since it still results in the requisite reduction of hazardous constituent mass loading and provides desirable compliance flexibility. Of course, if the pollution prevention alternative is used partially, there must still be compliance by some alternative means for the remaining hazardous constituents subject to the prohibition.

The Agency is not, however, adopting any type of hazardous constituent trading provision as part of this rule. It first is not clear that such a provision would satisfy the equivalency test enunciated by the court. In addition, given the narrow time frame available to the Agency to develop this rule, the Agency lacks the time and resources to properly evaluate the ramifications of the idea in this proceeding.

As a means of implementing this alternative, EPA is adopting the method proposed. The mass/day reduction of a particular underlying hazardous constituents is to be calculated by comparing the injected baseline with the allowance. The injected baseline is determined by multiplying the volume/day of prohibited hazardous waste generated and subsequently injected times the concentration of hazardous constituents before the pollution prevention measure. The allowance is determined by multiplying the volume/day of a hazardous constituent generated/injected times the UTS for that constituent. The difference between the injected baseline and the allowance is the required mass/day reduction.

EPA proposed, and is adopting the requirement that after successful employment of a pollution prevention measure, the facility must demonstrate that the injected mass achieves the required mass/day reduction. Because the amount of an underlying hazardous constituent in the injectate is dependent upon the level of production, a correction factor for production is needed. In the example given in the proposal (60 FR 11714), the calculation for the injected baseline was corrected by a production variability factor based on volume. The Agency had solicited comment on whether there are production parameters other than volume (e.g., mass, square footage, etc.). One commenter gave a specific example where square footage would be a more appropriate parameter. Therefore, the Agency is promulgating today that any appropriate parameter may be used to calculate the production variability factor. Another commenter was concerned that in the example the baseline used after pollution prevention seemed to be based on the production rate, whereas the baseline before pollution prevention was not. The commenter misunderstood the purpose of the production variability factor. In the example the post-pollution prevention injectate was adjusted by the production variability factor; however, the example could have been reorganized such that the initial baseline was adjusted for production variability. It was not necessary to adjust both the pre- and post-pollution prevention baselines for production variabilty; in fact, doing so would cause the variability factor to cancel out.

Several commenters were concerned that there are other factors besides rate of production which could cause variability in the level of an underlying hazardous constituent. One commenter mentioned variations in operation of specific source unit operations such as distillation and/or stripping trains feeding the injection unit. Another commenter stated that since they do not actually produce anything, they have no production rates to use, and suggested basing production on man-hours worked or total water consumed by a facility. The Agency agrees with all these suggestions. The mass/day of an underlying hazardous constituent after pollution prevention is based on the flowrate multiplied by the concentration of the constituent, and must be less than or equal to the calculated mass/day allowance for that underlying hazardous constituent. Beyond this basic formula, the facility can adjust for any factors which would cause a variation in the concentration of the underlying hazardous constituent, provided the variation(s) are part of a normal operating procedure.

Under this approach, a facility would make a one-time change in operating practice. Because the mass loading reductions resulting from the practice are obtained from the time of the change forward, it obviously is not necessary (and neither practical or likely feasible) for the facility to make on-going (potentially daily) changes to qualify under the provision.

A number of commenters, although supporting the Agency's proposal, argued that it should apply to facilities that already have implemented source reduction or other pollution prevention practices before the effective date of the rule, not just those making the change prospectively (as EPA proposed). Their point is that facilities that have already implemented source reduction, and as a result may now have fewer opportunities to do so, should not be on a worse footing than facilities who have been laxer and thus now have a wider range of possible means of reduction. This argument certainly has equitable force. At the same time, however, there has to be some objectively defined baseline period for the rule to be enforceable, and for there to be some nexus between the pollution prevention measure and the reduced mass loadings in current injectate. Balancing these considerations, the Agency is establishing 1990 as the base year for establishing a baseline. This was the year EPA adopted (per Congressional schedule) the prohibitions for characteristic hazardous waste and (coincidentally) the year of the Pollution Prevention Act.

EPA is sensitive to other comments regarding the need for this alternative to be objectively verifiable. The Agency is therefore requiring that facilities must monitor the underlying hazardous constituent concentration and the volume of the prohibited hazardous waste stream (i.e. all characteristic streams subject to LDR treatment standard requirements that will be decharacterized before injection), both on the day before and the day after successful implementation of pollution prevention. Results of this monitoring must be reported to the EPA Region or authorized State on a one-time basis. The Agency had solicited comment on whether more than one day is needed for monitoring. Several commenters were concerned that certain pollution prevention methods would take several weeks, not one day, to show results. It should be noted that the Agency did not intend for the pollution prevention method to show results in one day. Results should be achieved by the effective date of the rule for the facility to be in compliance, and the pollution prevention method should have been employed no earlier than 1990. The facility must also include a description of the pollution prevention method used (including any recycling alternative). In addition, the facility will monitor and keep on-site records of the results on a quarterly basis (this time period is selected to match the quarterly monitoring already required under SDWA regulations at 40 CFR 146.13 (b)). If the facility changes its means of complying with this alternative, it must renotify the EPA Region or authorized State, and again document the basis for its compliance by monitoring.

D. De Minimis Volume Exemption

EPA is finalizing the *de minimis* exemption proposed. 60 FR at 11714–11715. The terms of the exemption are that if decharacterized wastewaters comprise no more than 1% of the total injectate, if the total volume of the characteristic streams do not exceed 10,000 gallons per day, and if underlying hazardous constituents are present in the characteristic wastes at concentrations less than 10 times UTS at the point of generation, then the wastes are not prohibited from injection in a Class I non-hazardous deepwell (assuming the injectate is not hazardous at the point of injection). The Agency continues to believe that under these circumstances, the relatively small decharacterized hazardous waste streams would not appreciably alter the risks posed by the injection practice.

Generally, the proposed approach was well received. Some commenters stated, however, that the *de minimis* volume exemption, as proposed, would allow excessively large volumes of routinely generated characteristic wastes to go untreated to disposal in deep wells, while others believe that the specific quantifying parameters are overly restrictive. The Agency analyzed potential risks associated with concentrations of 5 contaminants detected in Class I facility waste streams at 10, 20, and 50 times UTS. (This analysis was conducted in conjunction with revising the Regulatory Impact Analysis For Underground Injected Wastes for this rule. See 60 FR 11715.) In brief, risk estimates for 4 geologic settings and 2 well malfunction scenarios were found to be below levels of regulatory concern at 10 and 20 times UTS. However, at 50 times UTS, risk estimates for cancer and hazard index were above regulatory concern for a waste stream containing carbon tetrachloride, assuming an abandoned borehole failure within 500 feet of the injection well. Taking into account the statutorily enumerated "long-term uncertainties associated with land disposal" (RCRA section 3004(d)(1)(A)), EPA believes the 10 × UTS level to be well within the zone of reasonable values it could select as *de minimis*. The one percent volumetric requirement is consistent with other longstanding *de minimis* exemptions for wastewater management systems in the subtitle C rules (see § 261.3(a)(2)(iv) (A) and (E)), and would normally cap the total volume of characteristic injectate at approximately 1100 gallons per day, given average Class I UIC non-hazardous injection rates.

At a rate of 1100 gallons per day, 10×UTS for carbon tetrachloride would mean a mass loading of approximately 165 mg of the constituents being injected each day. Mass loadings for the other hazardous constituents would similarly be modest. EPA again believes that these small mass loadings would have *de minimis* effect on the risk potential posed by the injection practice and consequently should be exempted from the prohibition.

BILLING CODE 6560–50–P

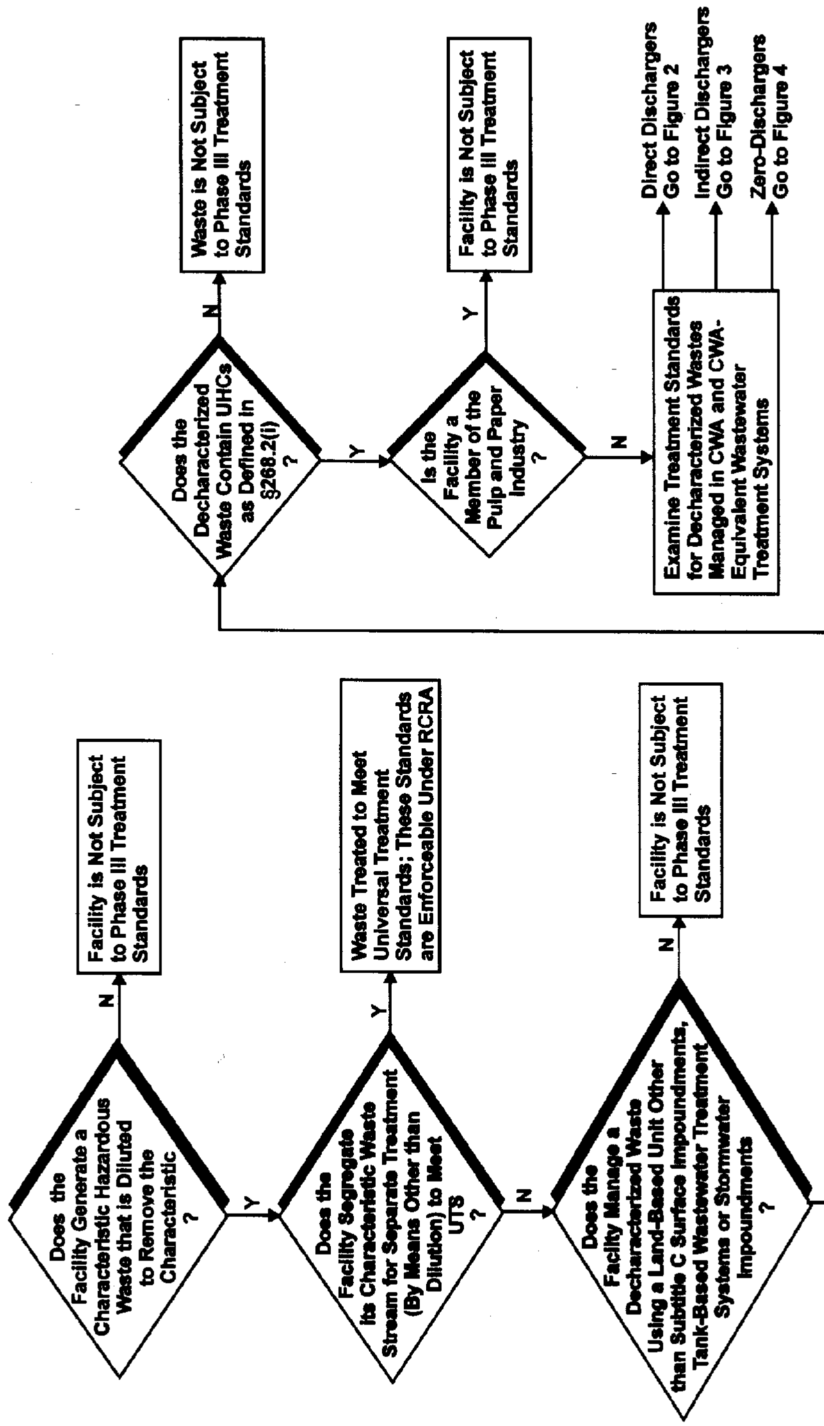

Figure 1. General Applicability Criteria for Treatment Standards for Clean Water Act (CWA) and CWA-Equivalent Wastewater Treatment Systems

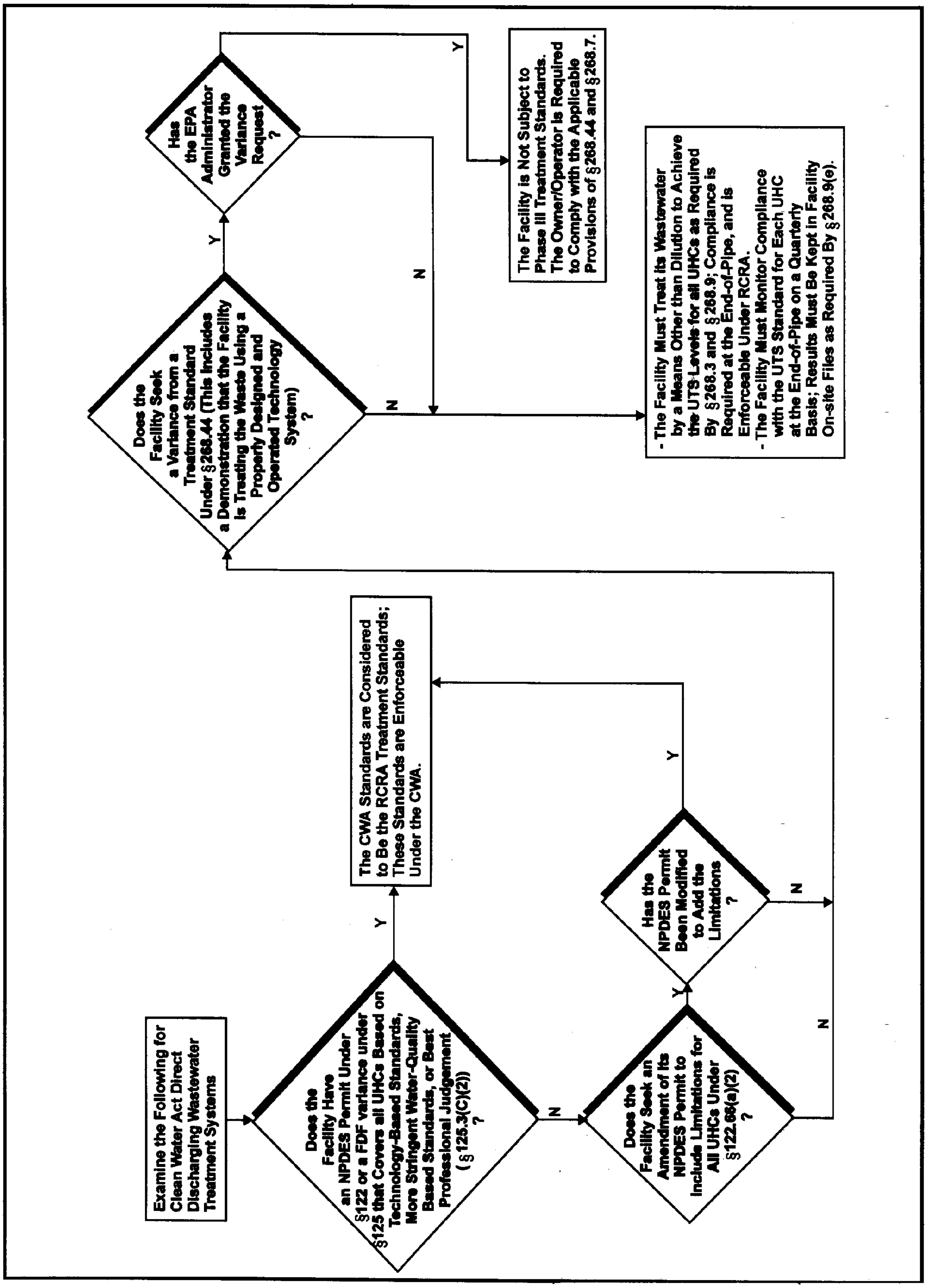

Figure 2. Applicability Criteria and Treatment Standards for Decharacterized Wastes Managed in Clean Water Act Direct Discharging Wastewater Treatment Systems

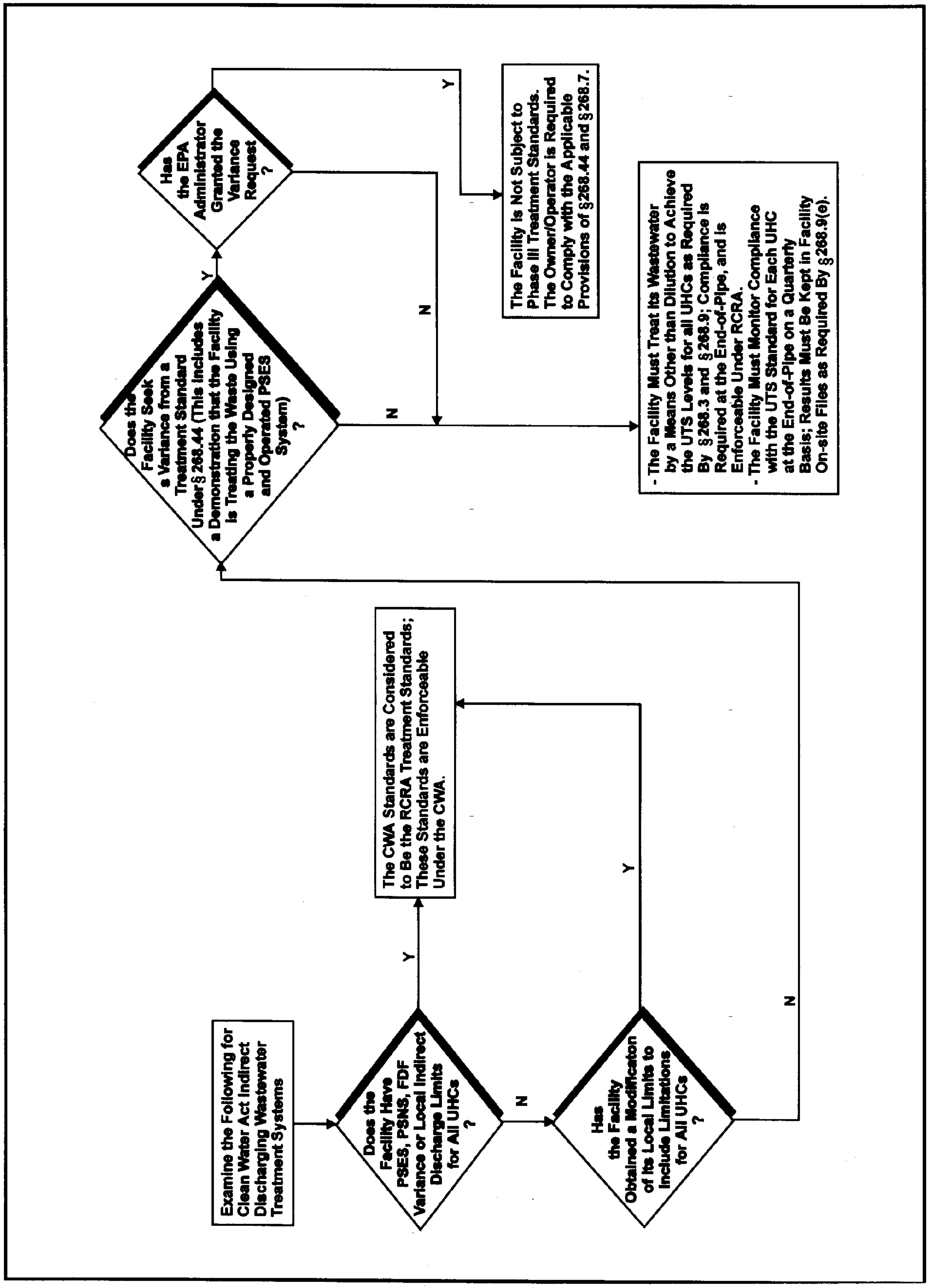

Figure 3. Applicability Criteria and Treatment Standards for Decharacterized Wastes Managed in Clean Water Act Indirect Discharging Wastewater Treatment Systems

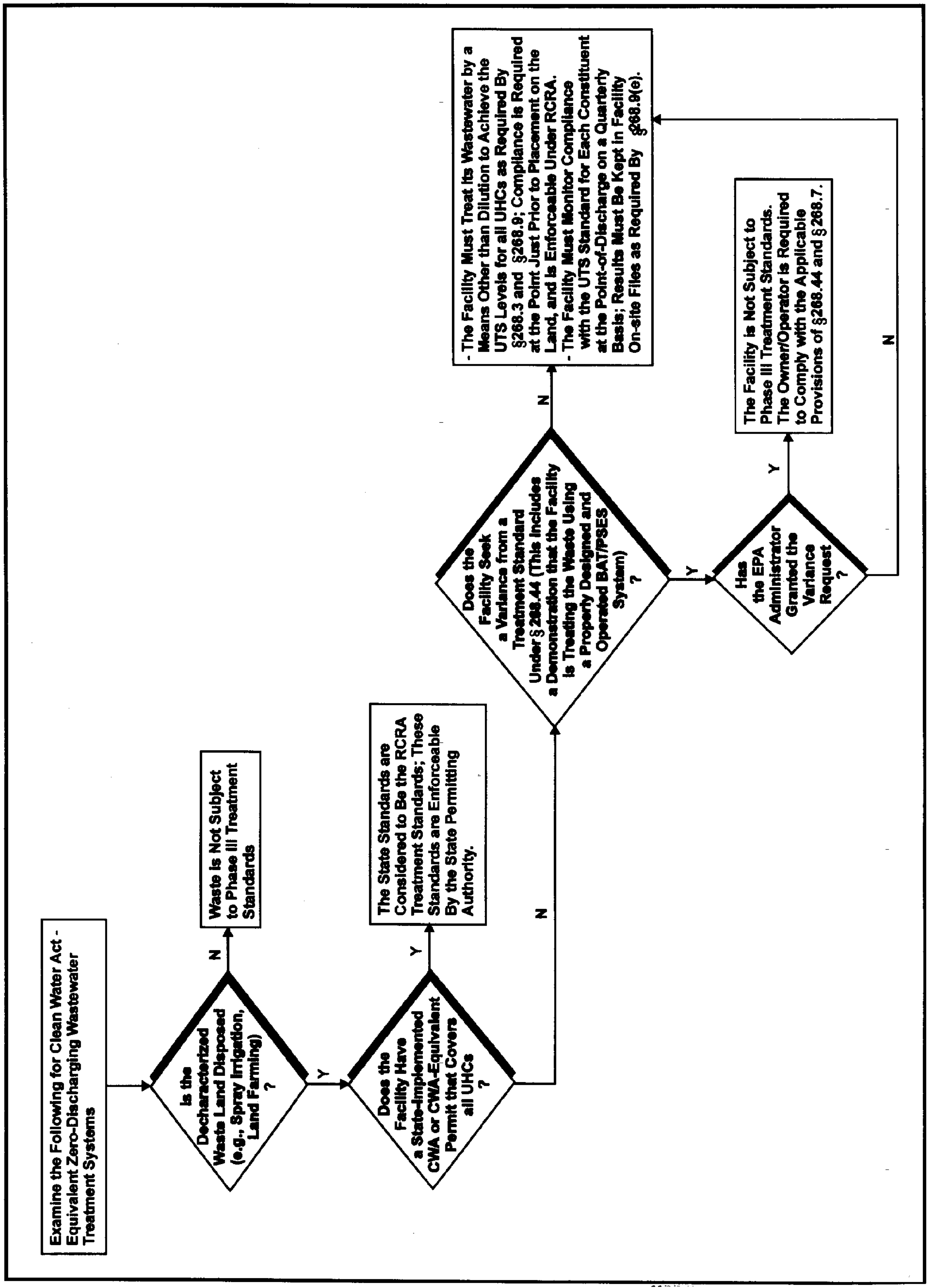

Figure 4. Applicability Criteria and Treatment Standards for Decharacterized Wastes Managed in Clean Water Act - Equivalent Zero-Discharging Wastewater Treatment Systems

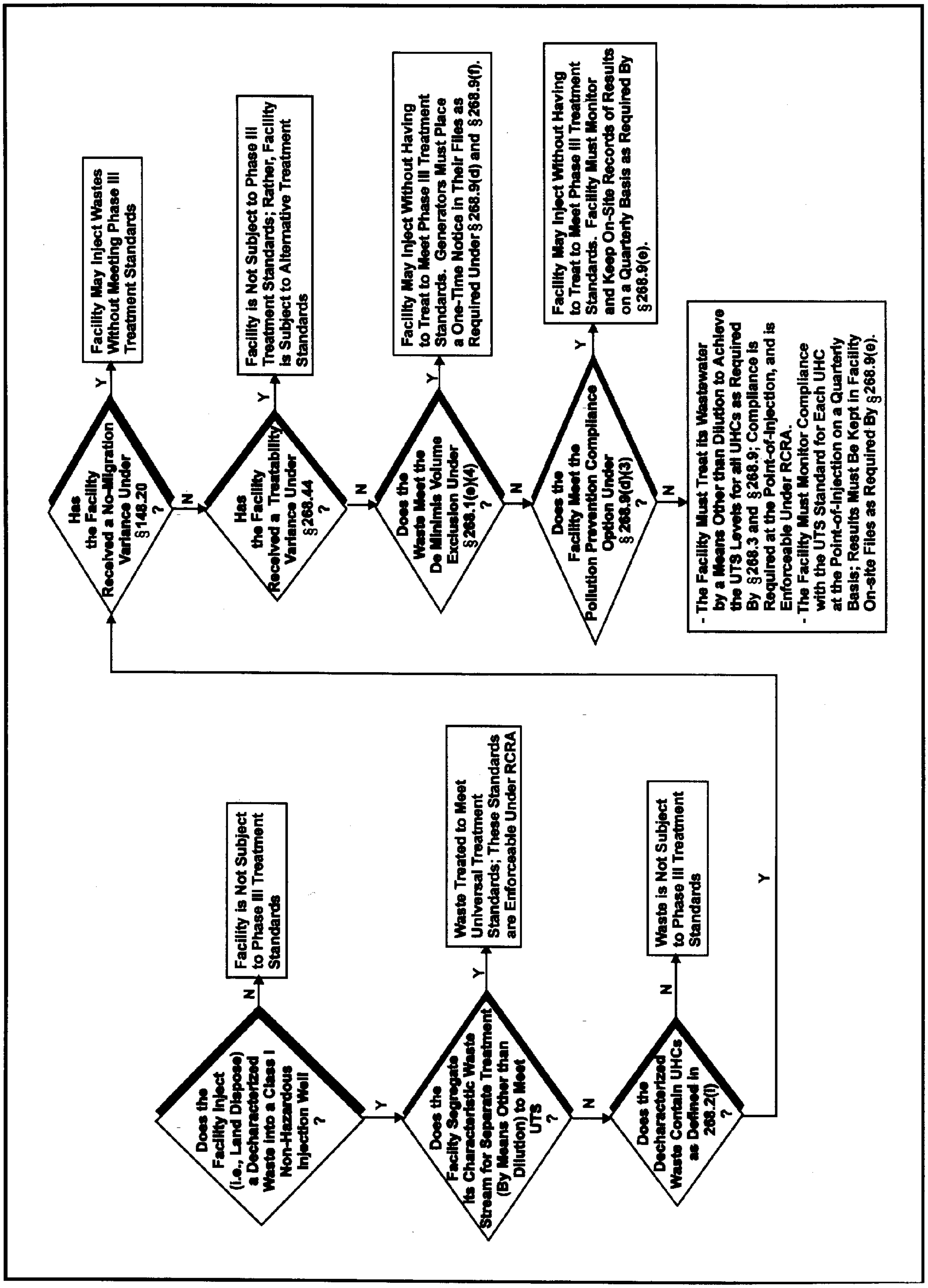

Figure 5. General Applicability Criteria and Treatment Standards for SDWA-Regulated Facilities Discharging Decharacterized Waste Into Class I Non-Hazardous Injection Wells

BILLING CODE 6560–50–C

V. Treatment Standards for Newly Listed Wastes

A. Carbamates

Hazardous Wastes From Specific Sources (K Waste Codes)

K156—Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.
K157—Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.
K158—Bag house dust, and filter/separation solids from the production of carbamates and carbamoyl oximes.
K159—Organics from the treatment of thiocarbamate wastes.
K160—Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes.
K161—Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust, and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)

Acute Hazardous Wastes (P Waste Codes)

P203 Aldicarb sulfone
P127 Carbofuran
P189 Carbosulfan
P202 m-Cumenyl methylcarbamate
P191 Dimetilan
P198 Formetanate hydrochloride
P197 Formparanate
P192 Isolan
P196 Manganese dimethyldithiocarbamate
P199 Methiocarb
P190 Metolcarb
P128 Mexacarbate
P194 Oxamyl
P204 Physostigmine
P188 Physostigmine salicylate
P201 Promecarb
P185 Tirpate
P205 Ziram

Toxic Hazardous Wastes

U394 A2213
U280 Barban
U278 Bendiocarb
U364 Bendiocarb phenol
U271 Benomyl
U400 Bis(pentamethylene)thiuram tetrasulfide
U392 Butylate
U279 Carbaryl
U372 Carbendazim
U367 Carbofuran phenol
U393 Copper dimethyldithiocarbamate
U386 Cycloate
U366 Dazomet
U395 Diethylene glycol, dicarbamate
U403 Disulfiram
U390 EPTC
U407 Ethyl Ziram
U396 Ferbam
U375 3–Iodo-2-propynyl n-butylcarbamate
U384 Metam Sodium
U365 Molinate
U391 Pebulate
U383 Potassium dimethyl dithiocarbamate
U378 Potassium n-hydroxymethyl-n-methyldithiocarbamate
U377 Potassium n-methyldithiocarbamate
U373 Propham
U411 Propoxur
U387 Prosulfocarb
U376 Selenium, tetrakis (dimethyldithiocarbamate)
U379 Sodium dibutyldithiocarbamate
U381 Sodium diethyldithiocarbamate
U382 Sodium dimethyldithiocarbamate
U277 Sulfallate
U402 Tetrabutylthiuram disulfide
U401 Tetramethylthiuram monosulfide
U410 Thiodicarb
U409 Thiophanate-methyl
U389 Triallate
U404 Triethylamine
U385 Vernolate

EPA is promulgating the treatment standards that were proposed for wastes from the carbamate industry specified above.

The preamble of the proposed rule described the basis for these treatment standards in greater detail (60 FR 11720). For background information on waste characterization data, data gathering efforts, and applicable technologies, see the Best Demonstrated Available Technology (BDAT) Background Document for Newly Listed or Identified Wastes from the Production of Carbamates.

The concentration-based treatment standards being promulgated today for carbamate wastewaters and nonwastewaters are at UTS levels for certain constituents, and at newly-established levels for other constituents that are today being added to the UTS list. The UTS standards have already been promulgated for 21 of the constituents of concern (16 organic constituents and 5 metals). The Agency is promulgating new UTS for 42 constituents associated with carbamate wastes. Forty of these constituents are chemicals produced by the carbamate industry which may be grouped into the following categories: carbamates and carbamate intermediates, carbamoyl oximes, thiocarbamates, and dithiocarbamates. Please refer to the Background Document for definitions of these chemical groups and the categorization of these 40 chemicals. The other 2 constituents for which new UTS are being promulgated (triethylamine, and o-phenylene diamine) are not carbamate products, but are hazardous constituents present at levels of regulatory concern in carbamate wastes.

One commenter requested clarification on the applicability of the carbamate treatment standards, stating that the summary section of the proposed treatment standards said that treatment standards were being proposed for certain hazardous wastes "including those from the production of carbamate pesticides", whereas the section of the rule that directly addressed carbamate wastes referred to carbamates without the pesticide limitation. EPA points out in response that the final listing rule which defined the new waste codes does not limit the definition to pesticides only. The treatment standards being promulgated apply to all wastes which fit the definitions of the waste codes established in the final listing rule.

One commenter stated that EPA exceeded its authority under RCRA section 3004 and violated the Administrative Procedure Act by preparing the proposed treatment standards and sending this rule to OMB well before the final listing had been promulgated. EPA points out that the proposed treatment standards were actually published after publication of the final listing rule. The proposed treatment standards were modified to conform with the changes that appeared in the final listing; thus, treatment standards were only proposed for those carbamate wastes whose listing had been promulgated in final form. Proposed standards for wastes whose listings were not finalized were eliminated from the proposed treatment standards rule. Given the statutory requirement described above (i.e., the requirement to finalize LDR treatment standards six months after the listing is finalized), Congress must have envisioned that the two rulemaking activities would occur in close proximity.

One commenter had several objections to the proposed standards for thiocarbamate wastes, stating that 1) nonwastewater standards should not have been based on detection limits compiled from sampling and analysis performed as part of the listing process because the Agency made errors in the sampling and analysis; 2) that EPA has no data to support the assertion that the proposed UTS limits can be met by thermal destruction technologies and that the source of the detection limit used to develop the nonwastewater standard was not clearly identified; and, 3) that no document was found in the record to support the proposed wastewater limit of 0.003 mg/l for thiocarbamate constituents (A2213, Butylate, Cycloate, EPTC, Molinate, Pebulate, Prosulfocarb, Triallate, Vernolate), based on granular activated carbon absorption, giving the commenter no basis to evaluate the achievability of this treatment standard.

To respond, the nonwastewater limit for thiocarbamate wastes was actually based on a detection limit of 0.5 mg/kg by GC/NPD, identified in a general characterization report addressing the newly regulated constituents, rather than on the limit of 0.125 mg/kg by SW–846 8270B, identified in the sampling and analysis reports. The commenter has not yet provided any data to indicate that the proposed treatment standards for nonwastewaters cannot be met.

The Agency has decided to promulgate a treatment standard of 0.042 mg/l in wastewaters for the thiocarbamate constituents identified above. This standard is based on an analytical detection limit of 0.015 mg/l for Butylate, identified in an activated carbon isotherm test performed by the Office of Water to support development of effluent guideline limitations. The Agency had proposed a wastewater limit of 0.003 mg/l, based on data taken from the PEST (Pesticide Treatability Database) database containing treatability data for pesticides, prepared and maintained by RREL (Risk Reduction Engineering Laboratory) in Cincinnati, Ohio. However, upon review of the available data, the Agency has decided that the Office of Water data is more accurately representative of available wastewater treatment than the pilot-scale data from the PEST database, and has decided to change the final treatment standard accordingly.

EPA is today clarifying that the LDRs do not apply to waste streams which were specifically exempted from the definition of hazardous waste in the final listing rule for carbamates. These waste streams include sludges from the biological treatment of K156 and K157 and streams which satisfy the concentration-based exemption from the definition of K156 and K157 codified at § 261.3(a)(2)(iv)(G).

The promulgation of treatment standards for carbamate wastes has greatly expanded the number of constituents covered by the Universal Treatment Standards at Section 268.48. The Agency wishes to clarify that only a very limited number of generators or treaters, such as manufacturers or users of carbamate products, are expected to have these new constituents present in their wastes. Therefore, affected parties may rely on process knowledge to determine if it is necessary to analyze for these constituents.

The commenter has not yet provided any data to indicate that the proposed treatment standards cannot be met. The commenter did indicate an intention to submit biological treatment data for thiocarbamate wastes. This commenter was instructed to submit this data quickly (by the end of August) to allow the Agency time to give consideration to this data prior to issuing the final rule.

B. Spent Aluminum Potliners (K088)

K088—Spent potliners from primary aluminum reduction.

EPA proposed to establish treatment standards for K088 expressed as numerical concentration limits (see 60 FR 11722) for the following constituents: acenapthene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)-anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, cyanide and fluoride. Today, EPA is promulgating these treatment standards as proposed. The nonwastewater treatment standards for cyanide, and the organic constituents, are based on a total composition concentration analysis. The nonwastewater treatment standards for fluoride, and the metal constituents, are based on analysis using the TCLP. All wastewater treatment standards are based on total composition concentration analysis.

1. Comments Received on the "Inherently Waste-Like" Determination

The majority of the comments received on the issue of declaring K088 "inherently waste-like" opposed such a determination. As discussed in the proposal, declaring K088 inherently waste-like would require that all K088 treaters/recyclers obtain a RCRA Part B permit regardless of whether the K088 is recycled, reused, used as a feedstock in a process, or conventionally treated. The commenters asserted that this designation would discourage recycling/reuse and development of innovative technologies, and would be overly burdensome for many of the small companies pursuing recycling technologies.

The Agency was persuaded by commenters that a determination of "inherently waste-like" is unnecessary at this time. Instead, any determination of whether a particular K088 processing technology is a type of excluded recycling activity would need to be made on a case-by-case basis by EPA Regions or authorized states. EPA was persuaded by commenters that allowing individual flexibility in making such a determination is desirable here.

Criteria that are typically relevant in making any such determinations are set out (among other places) at 50 FR at 638 (Jan. 4, 1985); 53 FR at 522 (Jan. 8, 1988); and 56 FR at 7159 and 7185 (Feb. 21, 1991). EPA also repeats the concerns voiced in the proposed rule that spent aluminum potliners contain high concentrations of cyanides and polyaromatic hydrocarbons which may be conventionally treated by thermal recovery processes, and that these and other hazardous constituents are present in the potliners in concentrations well exceeding those found in the raw materials or products for which the spent potliners would be substituting. 60 FR at 11723 n. 11. Other concerns are that the thermal recovery processes appear to pose the same potential risks of harmful air emissions as processing hazardous wastes in industrial furnaces, that the residues of recovery processes may not be adequately treated, and that storage of spent potliners can (and indeed has) posed significant risk. Id. at 11723–24. EPA also repeats that many of these units may already be subject to the rules for industrial furnaces burning hazardous wastes, since those rules apply to industrial furnaces that burn hazardous wastes for energy recovery, material recovery, or destruction. Id. at 11722 and n. 10; 56 FR at 7142; 50 FR at 49171–49174 (Nov. 29, 1985); 40 CFR 266.100.

A consequence of EPA's decision to allow for individualized determinations is that it is also unnecessary (and indeed, not factually justified) to make a general determination of "substantial confusion" pursuant to 270.10(e)(2) which could establish an opportunity for interim status eligibility. That finding would have been premised on the generic inherently wastelike determination (see 60 FR at 11723), which the Agency is not making. EPA is also not pursuing in this proceeding the idea of toxic air emission standards under section 112(d)(1) of the Clean Air Act for these sources. These sources could be subject to these standards if they are major (or, in some cases, area) sources under section 112, but that determination need not be part of the present rulemaking.

2. Comments Received on Regulated Constituents

EPA requested comment on regulating the phthalates: bis (2-ethylhexyl) phthalate, di-n-butyl phthalate and di-n-octyl phthalate. These constituents have seemingly been detected in the untreated potliner and the treated residue; however, EPA believes that their presence may simply be due to lab contamination. Commenters overwhelmingly requested that these phthalates not be regulated. The Agency agrees and is not including any phthalates in the list of regulated constituents for K088.

A number of commenters requested that benzo(a)pyrene be used as a surrogate for analyzing organics. The commenters were concerned that analytical costs for other PAHs would be excessive. EPA is not convinced that analyzing benzo(a)pyrene would be sufficient for determining proper treatment of all organics. The concentration of one constituent does not always reflect the concentration of similar constituents in a waste. Surrogate analyses assume that all PAHs are present at similar concentrations which may or may not be true. Because of the variability of concentrations found in K088 wastes, benzo(a)pyrene may not be present while other PAHs may be present. Analyzing only for benzo(a)pyrene or any other potential surrogate does not ensure the treatment to UTS concentrations of other PAHs. In addition, the Agency believes that since all of the PAHs are analyzed by a single method the cost increase for additional PAHs should not be significant. Therefore, the Agency does not believe the organic constituents monitored in K088 wastes should be limited to a surrogate indicator. EPA is allowing, however, flexibility in the waste analysis plans developed by the companies with their permit writers to analyze only for those constituents expected to be present in the generated K088.

The Agency proposed to regulate fluoride in K088. While fluoride is not a "hazardous constituent", i.e., listed in Appendix VIII of part 261, it is present in very high concentrations in K088 and is capable of causing substantial harm in the form of groundwater degradation, adverse ecological effects and potential adverse human health effects. The Agency's view thus is that, unless fluoride in this waste is treated, the legal standard in section 3004(m) would not be satisfied. That is, treatment would not "substantially diminish the toxicity of the waste * * * so that short-term and long-term threats to human health and the environment are minimized." RCRA section 3004(m)(1). In addition, as discussed in the proposed rule, EPA reads the language in section 3004 (d)(1), (e)(1), and (g)(5) to require that land disposal may still be prohibited after treatment of hazardous constituents if the waste might still pose substantial hazards due to presence of other constituents or properties. 56 FR at 41168 (August 19, 1991); *NRDC* v. *EPA*, 907 F. 2d 1146, 1171–72 (D.C. Cir. 1990) (dissenting opinion). These hazards could be posed due to lack of treatment of other constituents in the waste, in this case, fluoride.

The Agency requested comment on whether fluoride should be added to Appendix VIII, as well. The overwhelming response of the commenters is that fluoride should not be added to Appendix VIII. The Agency agrees that fluoride does not pose the same risks in other wastes because it does not occur in such high concentrations. Furthermore, adding fluoride to Appendix VIII has associated potential analytical costs which would be unwarranted. Therefore, even though the Agency is regulating fluoride in K088, it is not adding it to Appendix VIII at this time.

3. Comments Received on Data

Several comments were received regarding EPA's use of data on K088. One comment in particular suggested that EPA ignored relevant data gathered by the Aluminum Association. The Agency did not ignore these data. They were submitted after the proposal and are currently in the docket for this final rule. The Agency has reviewed these data and found that they do not support any changes to the proposed treatment standards that are being finalized in this rule. This issue is discussed in greater detail in the Response to Comments background document.

4. Comments Received on Technical Basis for BDAT

There were a number of comments submitted on the technical basis for the numerical treatment standards. As described in the preamble to the proposed rule, most of the treatment standards are taken from the universal treatment standards (UTS) (59 FR 47988, September 19, 1994) which were developed for each constituent by evaluating all existing Agency data from various technologies. The exception to the UTS for K088 constituents is the fluoride treatment standard, which was taken from the Reynolds delisting petition. While K088 is a unique waste, available data indicate that these UTS levels can be routinely achieved.

There seemed to be some confusion in that some commenters believed that EPA was proposing a required technology for the treatment of K088. This is not the case. The longstanding position of the Agency is when numerical treatment levels are established under the LDR program, any treatment technology (other than impermissible dilution) can be used to achieve those levels.

Additional K088 comments along with EPA's responses are provided in the Response to Comments Background Document located in the docket for this rule.

VI. Improvements to the Existing Land Disposal Restrictions Program

A. Completion of Universal Treatment Standards

1. Addition of Constituents to Table 268.48

As discussed in the section on carbamate wastes, EPA is today adding 42 new constituents to the table of universal treatment standards (Table 268.48), for which treatment standards are being promulgated today.

2. Wastewater Standard for 1,4-Dioxane

EPA proposed on March 2, 1995 (60 FR 11702), to establish a wastewater treatment standard for 1,4-dioxane. 1,4-Dioxane was the only UTS constituent for which EPA had promulgated a nonwastewater treatment standard but not a wastewater standard. At that time, the Agency proposed a wastewater UTS for 1,4-dioxane of 0.22 mg/l. This proposed standard was based on the maximum daily limit for 1,4-dioxane that had been developed as part of the proposed effluent guidelines for the pharmaceutical industry (60 FR 21592, May 2, 1995). This standard was based on a transfer of distillation performance data from methanol to 1,4-dioxane.

Today, the Agency is promulgating a revised treatment standard for wastewater forms of 1,4-dioxane based on 5 data points. This data was submitted by one of the commenters and represents actual treatment of wastewaters containing 1,4-dioxane. The Agency prefers to use actual treatment data in lieu of a data transfer whenever possible. These data show that wastewaters containing between 2265–7365 mg/l of 1,4-dioxane can be treated by distillation to levels between 3–7 mg/l, representing a 99.9% removal rate for the dioxane. As a result of this data submittal, the Agency is today promulgating a UTS of 12.0 mg/l for 1,4-

dioxane wastewaters based on the performance of distillation. The standard was calculated following the standard methodology employed by EPA in developing all BDAT treatment standards.

Comments received on the wastewater treatment standard for 1,4-dioxane focused on three major points: (1) The unavailability, at the time of proposal, of data from the effluent guidelines proposed rule for the pharmaceutical industry, from which the proposed standard had been derived; (2) the inappropriateness of transferring distillation data from methanol to 1,4-dioxane (based on the effluent guidelines data); and (3) analytical difficulties inherent in analyzing for 1,4 dioxane in wastewater.

In the proposed rule, EPA referenced effluent guidelines data that would be made available to support the proposed wastewater treatment standard for 1,4-dioxane (60 FR 11727, footnote 13). Although the Agency believed that these data would be available for public inspection shortly after signature of the proposed rule, this was not the case. The data were available one day following the close of the comment period on the Phase III proposed rule. As a result, many comments were received that criticized the Agency for not providing appropriate pubic review of data that was used to develop a treatment standard.

In light of the delayed release of the effluent guidelines data, the Agency decided to accept comments on these data and the proposed 1,4-dioxane treatment standard for 30 additional days. In addition, the Agency provided notice of this extension to all commenters of the proposed rule. Several comments were received in response to this memo. Most of the commenters who had raised issue with the proposed standard commented on the EPA memo.

In response to the second concern raised by commenters, the Agency has received actual wastewater treatment data on 1,4-dioxane and as such has developed a UTS based on that data. As stated earlier, the Agency prefers to use actual constituency data from available treatment technology in lieu of transferred data from other constituents whenever feasible.

Finally, several commenters raised concerns regarding the analytical difficulties of reliably detecting and quantifying 1,4-dioxane in wastewater. CMA, in particular, stated that any UTS under 20 mg/l for 1,4-dioxane would be impractical. Other commenters noted extreme variability and difficulty in testing for the presence of 1,4-dioxane in wastewaters. While the analytical results provided by one of the commenters did show some irregularities, a comprehensive analytical protocol was not provided by the any of the comments which would be needed to fully assess their concerns regarding 1,4-dioxane. As such, the Agency believes that there should be no difficulty in analyzing for 1,4-dioxane in wastewater. Analysis can be accomplished by either direct injection into a GCFID (SW 846, Method 8015B) or a more sensitive analysis involving the injection of an azeotropic distillate preparation into a GCFID (SW–846, Method 5031).

3. Revision to the Acetonitrile Standard

EPA proposed to raise the UTS for the nonwastewater form of acetonitrile from 1.8 mg/kg to 38 mg/kg. Commenters generally supported this revision for the reasons given in the proposed rule. Therefore the Agency is promulgating this revised treatment standard in this rule for the reasons stated at 60 FR 11729.

Related to this, EPA also proposed revoking the special wastewater/nonwastewater definition for acrylonitrile wastes (K011/13/14), recognizing that these nonwastewaters could consist of over 90% water, and that wastewater treatment is an appropriate means of treating these wastes. Commenters agreed with this, and the Agency is finalizing this today.

B. Aggressive Biological Treatment as BDAT for Petroleum Refinery Wastes

EPA had solicited comment on whether to specify aggressive biological treatment (ABT) as the treatment standard for decharacterized petroleum refining wastewaters. The Agency is not establishing such a treatment standard in this final rule, but is instead promulgating a reduction in the frequency of monitoring required for those facilities using ABT to treat their wastes. The reasons for this are discussed below.

This issue was raised by the American Petroleum Institute (API), which had submitted data to the Agency on ten of its facilities that used aggressive biological treatment. Along with the data, API requested that EPA specify aggressive biological treatment as the treatment standard for their wastes. Such a standard, which would operate in lieu of UTS, would, in API's view, provide adequate treatment and could reduce their monitoring burden. In a similar vein, CMA commented that EPA should specify an optional treatment method (biological treatment) as an alternative to meeting UTS for underlying hazardous constituents reasonably expected to be present in characteristic wastes.

The Environmental Technology Council (ETC) opposed setting ABT as a new technology-specific treatment standard. They argued that biological treatment only partially destroys underlying hazardous constituents. They also felt that reducing the monitoring burden is inadequate justification for creating a new technology-specific standard.

As discussed in the preamble to the proposed rule (60 FR at 11719), biotreatment systems vary in performance both in general and as to specific constituents; the Agency is therefore reluctant to designate ABT as BDAT based on data from only ten facilities. The main reason given by both API and CMA for having a treatment method as the treatment standard was the elimination of the compliance monitoring burden. Although we agree with ETC that reducing monitoring burden is not an adequate justification for creating a new technology-specific treatment standard, EPA is certainly willing to consider more efficient means of ensuring compliance with LDR requirements.

Therefore, EPA is not designating ABT as BDAT, but is, however, requiring that decharacterized wastes affected by today's rule, which are managed in a wastewater treatment system involving ABT, must be monitored annually to ensure compliance with the treatment standards for underlying hazardous constituents. Other decharacterized wastes affected by today's rule must be monitored quarterly. EPA has been reviewing the paperwork burden posed by the LDR program; this was discussed in the supplemental notice to the LDR Phase IV proposed rule (61 FR 2338, January 25, 1996). As part of this paperwork burden reduction effort, the Agency is considering reducing the monitoring burden for all facilities complying with LDRs. The Agency considers reducing the monitoring burden for facilities treating wastewater with ABT to be a positive step towards this goal, and therefore believes it is justified. Reductions of this type for other types of treatment will be explored in future rulemakings.

C. Dilution Prohibition

Under the existing LDR dilution prohibition (40 CFR 268.3), burning inorganic metal-bearing hazardous wastes can be a form of impermissible dilution. On May 27, 1994, the Assistant Administrator for the Office of Solid Waste and Emergency Response issued a Statement of Policy which clarified this point (59 FR 27546–27547). Today the Agency is codifying and quantifying these principles.

As discussed in the proposed rule, impermissible dilution may occur when wastes not amenable to treatment by a certain method (i.e., treated very ineffectively by that treatment method) are nevertheless 'treated' by that method (55 FR 22666, June 1, 1990; 52 FR at 25778–25779, July 8, 1987). Today's rule provides a general distinction between "adequate treatment" and potential violations of the dilution prohibition.

1. Inorganic Metal-Bearing Wastes

The Agency has evaluated the hazardous wastes and has determined that 43 of the RCRA listed wastes (as set forth in 40 CFR part 261) typically appear to be inorganic hazardous wastes that do not contain organics, or contain only insignificant amounts of organics, and are not regulated for organics. BDAT for these inorganic, metal-bearing listed wastes is metal recovery or stabilization. Thus, impermissible dilution may result when these wastes are combusted. When an inorganic metal-bearing hazardous waste with insignificant concentrations of organics is placed in a combustion unit, legitimate treatment for purposes of LDR ordinarily is not occurring. No treatment of the inorganic component occurs during combustion, and therefore, metals are not destroyed, removed, or immobilized. Since there are no significant concentrations of organic compounds in inorganic metal-bearing hazardous wastes, it cannot be maintained that the waste is being properly or effectively treated via combustion (i.e., thermally treated or otherwise destroyed, removed, or immobilized). For this reason, combustion of inorganic wastes is not a "metho[d] of treatment * * * which substantially diminish[es] the toxicity of the waste or substantially reduce[s] the likelihood of migration of hazardous constituents from the waste * * *" (RCRA § 3004(m)) and so is not a permissible method of treatment under that provision.

In terms of the dilution prohibition, if combustion is allowed as a method to achieve a treatment standard for these wastes, metals in these wastes will be dispersed to the ambient air and will be diluted by being mixed in with combustion ash from other waste streams. Adequate treatment (stabilization or metal recovery to meet LDR treatment standards) has not been performed and dilution has occurred. It is also inappropriate to regard eventual stabilizing of such combustion ash as providing adequate treatment for purposes of the LDRs. Simply meeting the numerical BDAT standards for the ash fails to account for metals in the original waste stream that were emitted to the air and for reductions achieved by dilution with other materials in the ash. (In most cases, of course, the metal-bearing wastes will have been mixed with other wastes before combustion, which mixing itself could be viewed as impermissible dilution).

These inorganic, metal-bearing hazardous wastes should be—and are usually—treated by metal recovery or stabilization technologies. These technologies remove hazardous constituents through recovery in products, or through immobilization, and are therefore permissible BDAT treatment methods.

There are eight characteristic metal wastes; however, only wastes that exhibit the TC as measured by both the TCLP and the EP for D004–D011 are presently prohibited (see 55 FR 22660–22662, June 1, 1990). EPA recently proposed prohibition and treatment standards for wastes identified as hazardous solely because they exhibit the TC (60 FR at 43682, August, 22, 1995). Characteristic wastes, of course, cannot be generically characterized as easily as listed wastes because they can be generated from many different types of processes. For example, although some characteristic metal wastes do not contain organics or cyanide or contain only insignificant amounts, others may have organics or cyanide present which justify combustion, such as a used oil exhibiting the TC characteristic for a metal. Thus, it is difficult to say which D004–D011 wastes would be impermissibly diluted when combusted, beyond stating that as a general matter, impermissible dilution would occur if the D004–D011 waste does not have significant organic or cyanide content but is nevertheless combusted.

An "inorganic metal-bearing waste" is one for which EPA has established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content. The table being promulgated in 40 CFR part 268, Appendix XI is the list of waste codes for which EPA regulates only metals that are affected by this rule.

2. Inorganic Metal-Bearing Wastes Not Prohibited Under the LDR Dilution Prohibition

Combustion of the following inorganic metal-bearing wastes is not prohibited under the LDR dilution prohibition: (1) wastes that, at the point of generation, or after any bona fide treatment such as cyanide destruction prior to combustion, contain hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard for UTS; (2) organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste; (3) wastes that, at point of generation, have reasonable heating value such as greater than or equal to 5000 Btu/lb (see 48 FR 11157, March 16, 1983); (4) wastes co-generated with wastes that specify combustion as a required method of treatment; (5) wastes, including soil, subject to Federal and/or State requirements necessitating reduction of organics (including biological agents); and (6) wastes with greater than 1% Total Organic Carbon (TOC).

Several commenters want EPA to add additional criteria. One commenter recommended adding a seventh criterion, i.e., combustion that results in a significant reduction in volume. Several commenters recommended adding a seventh criterion to allow combustion of lab packs. The Agency is not persuaded that a seventh criterion is necessary. It has determined that volume reduction is not a sufficient reason to allow the combustion of inorganic metal-bearing wastes because metals are neither destroyed nor immobilized, and it is possible that a significant amount of metal is being transferred to another media. As for lab packs, in the Phase II final rule (59 FR 47982, September 19, 1994), the Agency specifically addressed lab pack issues when it revised 268 Appendix IV to specify those wastes that are prohibited from inclusion in lab packs destined for combustion. Today's dilution prohibition does not supersede the streamlined treatment standards promulgated in the Phase II final rule. Therefore, metal-bearing inorganic wastes may be included in a lab pack unless it is prohibited under the list of wastes in 268 Appendix IV.

3. Cyanide-Bearing Wastes

A commenter questioned why EPA allows the presence of cyanide to justify combustion when there are adequate alternative treatment methods for that waste constituent. This approach was adopted because cyanide is destroyed—i.e., effectively treated and not diluted—by combustion. Existing LDR rules, in many cases, identify combustion as an appropriate BDAT for destruction of cyanide-bearing wastes. See, e.g., treatment standards for F009, F010, and F011. The LDR Phase III proposal solicited comments on whether the cyanide criterion should be dropped. Several commenters strongly supported the continued use of combustion as a treatment method for cyanide-bearing wastes, stating that combustion is the most efficient and effective method for treating cyanide wastes. One commenter, ETC, supported dropping the cyanide criterion because of the existence of alternative non-combustion technologies to treat inorganic cyanide-bearing wastes without dispersing metals. The Agency disagrees; combustion, when properly conducted, can effectively destroy all the cyanide in a waste. In the Agency's view, this indicates that cyanide wastes which are treated by combustion are not being diluted impermissibly. This issue of whether metals are being dispersed would be addressed through substantive controls on the combustion unit.

4. Table of Inorganic Metal Bearing Wastes

The table being promulgated in 40 CFR part 268, Appendix XI today indicates the list of waste codes for which EPA regulates only metals and/or cyanides that would be affected by this proposed rule. Except for P122, this list is identical to the list originally published in the aforementioned Policy Statement on this subject. The Agency is removing P122 (Zinc Phosphide greater than 10%) from the list of restricted inorganic metal-bearing wastes, because the Agency has previously promulgated a treatment standard of INCIN for the nonwastewater forms of this waste. See 40 CFR 268.40. The policy memo was in error on this point. EPA wishes to clarify that this dilution prohibition is limited to the 51 waste codes in this table. In addition, if an Appendix IX waste meets any of the six criteria discussed above, it would be permissible to combust the waste despite the fact that it is an Appendix IX waste.

D. Expansion of Treatment Options That Will Meet the LDR Treatment Standard "CMBST"

EPA is modifying the treatment standard expressed as INCIN, which specifies hazardous waste incineration, to CMBST, which allows combustion in incinerators, boilers and industrial furnaces. EPA also solicited comment on whether the Catalytic Extraction Process, for which Molten Metal Technology received a determination of equivalent treatment under § 268.42(b), should also be allowed for all wastes which have a treatment standard of CMBST, and whether there are other technologies which are equivalent to CMBST. Commenters supported the inclusion of the Catalytic Extraction Process (CEP), and since the Agency has determined that (properly operated) it performs in a manner equivalent to other combustion technologies, is adding it to the CMBST standard. Molten Metal Technology commented that the CEP is not in fact a combustion technology, and the Agency has attempted to reflect this in the definition. One commenter, Exide Corporation, requested that their plasma arc process for the recovery of lead also be added to the definition of CMBST. The Exide plasma arc process is in fact an industrial furnace under § 260.10, and is therefore already considered part of the definition of CMBST.

EPA also notes that the new CMBST standard requires that wastes be thermally treated in units that either are subject to subtitle C standards, or, in cases where non-hazardous but prohibited wastes are being thermally treated, in accordance with applicable technical operating requirements. This situation could arise, for example, if a decharacterized waste were then being thermally treated. Such a waste need not be managed in a hazardous waste combustion unit. The regulatory language makes clear that non-hazardous waste combustion units can be utilized. In fact, the predecessor to the CMBST standard—INCIN—allowed nonhazardous incinerators to be an eligible type of unit because the INCIN standard allowed burning in units subject to applicable emissions standards, which standards did not necessarily have to include subtitle C standards (59 FR 48002, Sept. 19, 1994, and 60 FR 242, June 3, 1995). This language was omitted inadvertently from the CMBST standard, and is being restored in today's rule.

E. Clean Up of 40 CFR Part 268

EPA is finalizing changes to the LDR program to achieve the goal of simplified regulations.

1. Section 268.8

Because treatment standards for all scheduled wastes were promulgated in the Third Third rule in 1990, the § 268.8 "soft hammer" requirements are no longer necessary. Therefore, § 268.8 is removed from part 268.

2. Sections 268.10–268.12

The purpose of Subpart B of 268 was to set out a schedule for hazardous wastes by the date when treatment standards were to be established. Deadlines in all three of these sections were met on time, and the wastes are subject to treatment standards. Therefore, these three sections are no longer necessary, and are removed.

3. Section 268.2(f)

With the promulgation of UTS in the LDR Phase II final rule (59 FR 47982, September 19, 1994), distinctions in the definitions of wastewaters are unnecessary. The Agency is therefore removing paragraphs (1)–(3) from § 268.2(f).

4. Corrections to Proposed Rule Language

A number of commenters pointed out properly that EPA had proposed an amendment to § 268.9 of the rules which would have the effect of subjecting all listed wastes which also exhibit a characteristic of hazardous waste to evaluate whether the waste contains underlying hazardous constituents not covered by the treatment standard for the listed waste, and if so, to treat for them. See 60 FR at 11741. EPA agrees with the commenters that this provision is unnecessary and is not adopting it. (In fact, the Agency did not intend any far-reaching change in proposing the revised language.) The provision is unnecessary because EPA already evaluated which hazardous constituents are present in listed wastes at the time of developing the treatment standards (any of the Background Documents supporting the treatment standards indicates the sampling done, and that the sampling encompassed the whole range of hazardous constituents potentially present). There is no need to duplicate this effort. Consequently, the Agency is not amending § 268.9(b).

Other commenters pointed out that the proposed changes to the de minimis exemption in § 268.1(e)(4)(i) (see 60 FR 11740) inadvertently omitted the language which states that de minimis losses are not prohibited. That language has been put back into the final rule language.

VII. Capacity Determinations

A. Introduction

This section summarizes the results of the capacity analysis for the wastes covered by this rule. For background information on data sources, methodology, and a summary of each analysis, see the Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners, found in the docket for today's rule. For EPA's responses to capacity-related comments, see the Response to Capacity-Related Comments Received on the Phase III

Land Disposal Restrictions Rulemaking, also found in the docket for today's rule.

In general, EPA's capacity analysis methodologies focus 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 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 systems 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.

B. Capacity Analysis Results Summary

For the decharacterized ICR and TC wastes managed in CWA, CWA-equivalent, and Class I injection well systems, EPA estimates that between 85 and 500 million tons per year (estimated at end-of-pipe) will be affected as a result of today's rule. EPA believes that many affected facilities need time to build treatment capacity for these wastes, as wastewater volumes generally make off-site treatment impractical. Thus, EPA has determined that sufficient alternative treatment capacity is not available, and today is granting a two-year national capacity variance for decharacterized wastewaters.

Commenters to the rule generally supported EPA's decision to grant a national capacity variance for decharacterized wastes managed in CWA, CWA-equivalent, and Class I injection well systems. Numerous other comments were received on issues such as those associated with the definition of point of generation for ICR and TC wastewaters and the applicability of today's rule to wastewater management units other than surface impoundments, such as stormwater impoundments, sumps, sewers, and trenches. The Response to Capacity-Related Comments Received on the Phase III Land Disposal Restrictions Rulemaking background document provides a detailed discussion of the capacity-related comments on decharacterized wastewaters and EPA's response to them.

To assess the quantity of D003 wastes that could be affected by the rule other than those wastes managed in CWA and CWA-equivalent systems, EPA extracted information from the 1993 Biennial Reporting System (BRS) on the generation and management of D003 wastes. According to the BRS, approximately 2.2 million tons of D003 wastewaters are currently deepwell injected, 650 tons of D003 nonwastewaters are managed through land application, and 17,600 tons of D003 nonwastewaters are managed in "other" disposal units (not specified in the BRS). These wastes may require additional treatment in order to meet the LDRs. In addition, some D003 waste that may be affected by the rule may not be reported in the BRS, because these wastes may not be considered hazardous by the generator once they have been decharacterized. Although EPA believes that in general there is adequate treatment capacity for these wastes, such capacity may not be immediately available. Therefore, EPA is granting a 90-day capacity variance for D003 wastes that are impacted by the rule and are not managed in CWA and CWA-equivalent systems in order to allow facilities time to determine whether their wastes are affected by this rule, and identify and locate alternative treatment capacity if necessary.

EPA estimates that approximately 105,000—130,000 tons of newly listed wastes included in today's rule will require alternative treatment. In particular, approximately 4,500 tons of carbamate wastes (K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, U409–U411) will require alternative treatment. In addition, 100,000—125,000 tons (not including contaminated media) of spent aluminum potliners (K088) will require alternative treatment capacity.

EPA received a number of comments on its capacity analysis for K088 wastes. Most commenters disagreed with EPA's proposal not to grant a capacity variance for K088 wastes. Specifically, these commenters believe that EPA overestimated the quantity of available capacity and underestimated the quantity of required capacity. In performing the capacity analysis for the final rule, EPA considered all of the issues raised by the commenters and reexamined its estimates of both available and required capacity. EPA found that adequate treatment capacity does exist for K088 wastes, although the amount of treatment capacity appears to be just adequate to accommodate demand. However, some of the facilities capable of treating these wastes may require pretreatment such as grinding or crushing prior to accepting the waste. In order to allow facilities generating K088 adequate time to work out logistics such as transportation, pretreatment capacity, and contracting for treatment capacity, EPA has decided to grant a nine-month national capacity variance for these wastes—the time at which EPA estimates existing treatment capacity will be available as a practical matter. A detailed discussion of the final capacity analysis is provided in the Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners and EPA's responses to the individual comments on the K088 capacity analysis are provided in the Response to Capacity-Related Comments Received on the Phase III Land Disposal Restrictions Rulemaking, both of which are in the docket for today's rule.

EPA has determined that there is adequate alternative treatment capacity available for the 4,500 tons of carbamate wastes generated each year and is therefore not granting a national capacity variance for these wastes.

The quantities of radioactive wastes mixed with wastes included in today's rule are generated primarily by the U.S. Department of Energy (DOE). EPA estimates that 820 tons of high-level waste and 360 tons of mixed low-level waste that may be affected by this proposal will be generated annually by DOE. In addition, there are currently 7,000 tons of high-level waste, 10 tons of mixed transuranic waste, and 2,700 tons of mixed low-level waste in storage that may be affected by this rule. DOE currently faces treatment capacity shortfalls for high-level wastes and mixed transuranic wastes. Although DOE does have some available treatment capacity for mixed low-level wastes, most of this capacity is limited to treatment of wastewaters with less than one percent total suspended solids and is not readily adaptable for other waste forms. DOE has indicated that it will generally give treatment priority to mixed wastes that are already restricted under previous LDR rules. Therefore, EPA is granting a two-year national capacity variance to radioactive wastes mixed with the hazardous wastes affected by today's rule. Commenters to the proposed rule supported EPA's decision to grant a national capacity variance for these wastes.

Table 1 lists each RCRA hazardous waste code for which EPA is today promulgating LDR standards. For each code, this table indicates whether EPA is granting a national capacity variance for land-disposed wastes. Also, EPA is granting a three-month national capacity variance for all wastes in this rule to handle logistical problems associated with complying with the new standards.

TABLE 1.—VARIANCES FOR NEWLY LISTED AND IDENTIFIED WASTES

Waste description[1]	Surface-disposed wastes	Deepwell-injected wastes
Ignitable and corrosive wastes managed in CWA or CWA-equivalent systems, or SDWA (D001 and D002)	2 Years	2 Years.
Reactive wastes managed in CWA or CWA-equivalent systems, or SDWA (D003)	2 Years	2 Years.
Reactive wastes not managed in CWA or CWA-equivalent systems, or SDWA (D003)	3 Months	3 Months.
Newly identified pesticide wastes managed in CWA or CWA-equivalent systems, or SDWA (D012–D017)	2 Years	2 Years.
Newly identified TC organic wastewaters managed in CWA or CWA-equivalent systems, or SDWA (D018–D043)	2 Years	2 Years.
Spent aluminum potliners (K088)	9 Months	3 Months.
Carbamate production wastes (K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, U409–U411) mixed radioactive wastes[2].	3 Months	3 Months.

[1] Includes soil and debris contaminated with each waste.

[2] The variance determinations listed apply only to radioactive wastes mixed with decharacterized D001–D003 or newly identified D012–D017 wastes managed in CWA and CWA-equivalent systems; to radioactive wastes mixed with newly identified TC organic wastewaters; and to radioactive wastes mixed with spent aluminum potliners, or carbamate production wastes.

VIII. 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 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 promulgated pursuant to sections 3004(d) through (k), and 3004(m), of RCRA (42 U.S.C. 6924(d) through (k), and 6924(m)). Therefore, the Agency is adding today's rule 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 Today's Rule

On August 22, 1995, EPA proposed in the Phase IV LDR notice an abbreviated authorization procedure that would also be used for certain parts of the Phase III LDR rule that are minor in nature (EPA also proposed to use this procedure for the Universal Treatment Standards (UTS) in the Phase II rule). This procedure is designed to expedite the authorization process by reducing the scope of a State's submittal, for authorization to a State certification and copies of applicable regulations and statutes. EPA would then conduct a short review of the State's request, primarily consisting of a completeness check (see 60 FR 43686 for a full description of the proposed procedures). The parts of the Phase III rule to which the streamlined authorization procedures would be applicable are: (1) treatment standards for newly listed wastes, (2) improvements to the existing land disposal restrictions program, and (3) revisions and corrections to the treatment standards in §§ 268.40 and 268.48. (Further discussion of this issue also is found in the supplemental proposal to the LDR Phase IV rule (61 FR 2358, 2365, January 25, 1996)).

Although EPA is firmly committed to streamlining the RCRA State authorization procedures, the Agency has decided not to finalize the proposed Category 1 authorization procedures for parts of the Phase III rule today's notice. EPA believes that public comments from both the August 22 proposal and comments submitted for the recent HWIR-contaminated media proposal should be considered before finalizing new procedures for authorization. This full consideration will enable EPA to make the best decision regarding how the authorization process should work. EPA intends to finalize both the Category 1 and Category 2 procedures at the same time.

C. Effect on State Authorization

Because today's Phase III LDR rule is being promulgated under HSWA authority, those sections of today's rule that expand the coverage of the LDR program (e.g., to newly identified wastes) would be implemented by EPA on the effective date of today's rule in authorized States until their programs are modified to adopt these rules and the modification is approved by EPA.

However, some of today's regulatory amendments are neither more or less stringent than the existing Federal requirements. EPA clarified in a December 19, 1994, memorandum (which is in the docket for today's rule) 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 in today's LDR Phase III rule for those states with LDR authorization.

Because today's rule is promulgated 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 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 § 271.21(e). This deadline can be extended in certain cases (see § 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 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.

IX. 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 rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considers compliance cost and economic impacts for both characteristic wastes and newly listed wastes affected by this rule. For characteristic wastes, the potential cost impacts of this rule depend on whether facilities' current wastewater treatment systems will meet the UTS levels or if additional treatment will be required. If current treatments are adequate, facilities will only incur administrative costs to have their permits revised as well as on-going monitoring costs. In general, the Agency expects that facilities will seek permit modifications, treatability variances, or certification of adequate POTW treatment because these compliance options can be implemented at much lower cost than the option requiring treatment to UTS levels. EPA estimates the total annualized costs of the rule for these wastes would range from approximately $197,000 to $598,000, of which $154,000 to $425,000 would be incurred at the 28 to 73 potentially affected facilities in the organic chemical industry, and approximately $43,000 to $173,000 would be incurred at the 8 to 30 potentially affected facilities in the petroleum refining industry. However, at the high end, if current wastewater treatment systems need to be augmented with additional treatment steps, the incremental compliance costs for today's rule could be as high as $1 million per affected facility. The Agency does not have adequate data to estimate how many, if any, facilities may require modification to their treatment facilities. The Agency did conduct a sensitivity analysis, considering the costs of the rule under two scenarios: (1) Assuming that 80 percent of the facilities comply with the rule by obtaining permit modifications and 20 percent comply by treating their wastes, and, (2) assuming that 60 percent comply by obtaining permit modifications and 40 percent comply by treating their wastes. Based on the first scenario, the estimated annualized costs of the rule would range from $6.6 million to $18.2 million. Based on the second scenario, the estimated annualized costs would range from $12.9 million to $35.7 million. For newly listed wastes, the costs are substantially higher and will be incurred each year. These costs range from approximately $11.9 million to $47.3 million and are attributable to thermal treatment of aluminum potliner wastes (K088). Therefore, today's rule may be considered an economically significant rule. Because today's rule is significant, the Agency analyzed the costs, economic impacts, and benefits.

This section of the preamble for today's rule provides a discussion of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's rule, followed by a presentation of the cost, economic impact and benefit results. More detailed discussions of the methodology and results may be found in the background document, "Regulatory Impact Analysis of the Land Disposal Restrictions Final Rule for the LDR Phase III Newly Listed and Identified Wastes," which has been placed in the docket for today's rule.

1. Methodology Section

In today's rule, the Agency is establishing treatment standards for the following wastes: end-of-pipe standards for ignitable, corrosive, and reactive (ICR) wastewaters managed in CWA, CWA-equivalent systems, and UIC wells; Toxicity Characteristic pesticide (D012–17) and organic (D018–43) wastewaters managed in CWA, CWA-equivalent systems, and UIC wells; and newly listed wastes from two industries—spent aluminum potliners and carbamates.

a. Methodology for Estimating the Affected Universe. In determining the costs, economic impacts, and benefits associated with today's rule, the Agency estimated the volumes of waste affected by today's rule. The procedure for estimating the volumes of ICR waste and TC organic and pesticide waste, and newly listed wastes affected by today's rule is summarized below.

First, the Agency examined all industries which might be likely to produce wastes covered under today's standards. Through reviewing comments to the Supplemental Notice of Data Availability published by the Agency in 1993, reviewing runs from the Biennial Reporting System (BRS) of volumes generated from particular industry sectors, as well as discussions with industry, and discussions with the Office of Water at EPA HQ, the Agency narrowed it down to 16 industries which would potentially have significant volumes of wastewater affected by today's rule.

Using a host of databases and/or sources, the Agency collected data on the quantities, constituents, and concentrations of the volumes affected from each of the 16 industries. In addition, the Agency gathered any data on current management practices, plant design, etc. The following sources were used: Toxic Release Inventory (TRI), Section 308 data from the Office of Water, Industrial Studies Database (ISDB), 1991 Biennial Reporting System (BRS), primary summary and development documents data from effluent guidelines, TCRIA documents, data gathered in the capacity analysis performed for today's rule, as well as comments from potentially affected industries.

The Agency obtained volume information for the newly listed wastes—spent aluminum potliners (K088) and carbamate wastes (K156–161)—from the listing documents prepared for these wastes during the listing procedure.

b. Cost Methodology. The cost analysis estimates the national level incremental costs which will be incurred as a result of today's rule. The cost estimates for both the baseline and post-regulatory scenarios are calculated employing: (i) the facility wastestream volume, (ii) the management practice (baseline or post-regulatory) assigned to that wastestream, and (iii) the unit cost associated with that practice. Summing the costs for all facilities produces the total costs for the given waste and scenario. Subtracting the baseline cost from the post-regulatory cost produces the national incremental cost associated with today's rule for the given waste.

The cost methodology section includes three sub-sections: (i) ICR and TC Pesticide and Organic Wastes Managed in CWA and CWA-Equivalent Systems, (ii) Newly Listed Wastes, (iii) Testing and Recordkeeping Costs.

i. ICR and TC Pesticide and Organic Wastes Managed in CWA and CWA-Equivalent Systems. The Agency employed the following approach to estimate the incremental costs for the ICR and TC wastes. First, using information available on the affected industries, the Agency created average-sized model facilities for each industry. Second, for a given model facility in an affected industry, the Agency used available unit cost data to develop costs for the baseline management practices (usually treatment in surface impoundments followed by discharge into receiving waters through a NPDES permit). Third, the Agency used data on the constituents and waste quantities for each industry, where applicable, to determine the necessary treatment required to reduce to UTS levels the constituents present. Fourth, the Agency used unit costs to develop costs for the post-regulatory management practices for the treatment requirements determined in the third step. Fifth, subtracting the baseline from the post-regulatory costs for an average facility in an industry sector and using the data available on the number of facilities affected within each industry, the Agency was able calculate the incremental cost for a given industry. Sixth, summing costs across affected industries, the Agency determined the incremental cost for the rule for the end-of-pipe treatment standards.

ii. Newly Listed Wastes. The costs for treatment of spent aluminum potliners (K088) and carbamate wastes (K156–161) will be determined using data from the listings on baseline management practices, judgment on the technology(s) required to meet the UTS standards for these wastes, and available unit cost data.

iii. Testing and Recordkeeping Costs. Testing and recordkeeping costs, including costs that facilities will incur for ensuring that hazardous constituents in characteristic waste are meeting new treatment standards and costs associated with permit modifications will be based upon an average, one-time testing cost, on-going monitoring costs, and an Information Collection Request, respectively.

c. Economic Impact Methodology. The economic effects of today's rule are defined as the difference between the industrial activity under post-regulatory conditions and the industrial activity in the absence of regulation (i.e., baseline conditions).

The Agency used (1) historic average capital expenditures for each industry, (2) historic average operating expenditures for each industry, (3) historic revenues, and (4) historic average pollution abatement and control expenditures (PACE) to determine the economic impacts. However, the Agency was unable to examine the impacts on a facility-specific basis due to lack of data. Therefore, the impacts are assessed on an industry-specific basis.

d. Benefits Methodology. The approach for estimating benefits associated with today's rule involves three components: (i) estimation of pollutant loadings reductions, (ii) estimation of reductions in exceedances of health-based levels, and, (iii) qualitative description of the potential benefits. The benefits assessment is based upon the waste quantity and concentration data collected for the cost analysis. This incremental assessment focuses upon reductions in toxic concentrations at the point of discharge and does not consider any potential benefits resulting from reductions in air emissions or impacts on impoundment leaks and sludges which may occur as part of treating wastes to comply with the LDRs. It is expected that additional treatment to comply with the LDRs may result in risk reductions from air emissions, leaks, and sludges.

EPA has conducted an assessment of the benefits related to the effects of the rule on newly listed spent aluminum potliners. These benefits depend on the incremental risk reductions that may result from treatment of the wastes. In conducting the risk assessment for spent aluminum potliners, EPA improved upon the fate and transport modeling approach used in the RIA. Specifically, in the RIA, EPA applied generic dilution/attenuation factors (DAFs) (which did not reflect constituent-specific fate and transport processes, site-specific hydrogeological conditions, or waste characterization data) to relate the concentration of contaminants in the leachate to their concentration in a down-gradient well. Instead, EPA used its Composite Model for Leachate Migration and Transformation Products (EPACMTP) to perform constituent-specific fate and transport modeling. A summary of the analysis can be found in the Addendum to the RIA placed in the docket for this rule. EPA data indicate that approximately 120,000 metric tons of spent aluminum potliners are generated annually. EPA has not conducted an assessment of the benefits related to the effects of the rule on newly listed carbamate wastes. Because the Agency expects facilities to comply with LDRs through permit modifications, and because the quantity of waste is very small, benefits for newly listed carbamate wastes are expected to be minimal.

i. Estimation of Pollutant Loadings Reductions. An incremental approach was used to estimate reductions in pollutant loadings. For the baseline scenario, contaminant concentrations were based upon data or estimates of current effluent discharge concentration levels. For the post-regulatory scenario, concentration levels were assumed to equal UTS levels.

ii. Estimation of Reductions in Exceedances of Health-Based Levels. The methods used for evaluating the benefits associated with cancer and noncancer risk reductions resulting from the rule entail comparing constituent concentration levels to health-based standards to evaluate whether implementation of the rule reduces concentration levels below levels that pose risk to human health.

To estimate benefits from cancer risk reductions resulting from the rule, a simple screening analysis was performed. This analysis compared contaminant concentrations for the baseline and post-regulatory scenario to health-based levels for carcinogens. Further analysis may be undertaken to quantify benefits associated with facility/ wastestream combinations identified in the contaminant concentration comparisons.

Benefits associated with reductions in non-cancer exceedances are estimated based upon comparisons of contaminant concentration levels in effluent discharges of the affected wastestreams to the reference health levels. These benefits are expressed in terms of the number of exceedances of health-based levels under the baseline scenario compared to the number of exceedances under the rule.

iii. Qualitative Description of the Potential Benefits. A qualitative assessment of potential benefits likely to result from the rule is used where data are limited. The Agency acknowledges limited data availability in developing waste volumes affected, constituents, concentrations, cost estimates, economic impacts, and benefits estimates for the LDR Phase III rulemaking. The Agency continues to request comment from industry regarding constituents, concentrations, waste volumes, and current management practices.

2. Results

a. Volume Results. The Agency has estimated the volumes of formerly characteristic wastes potentially affected by today's rule to total in the range of 33.5 to 500 million metric tons. The Agency requests comment on waste volumes affected by the LDR Phase III rule. For newly listed wastes, the analyses supporting the listing determination showed about 4,500 metric tons of carbamate wastes and 118,000 metric tons of spent aluminum potliners are potentially affected by this rule.

b. Cost Results. For characteristic wastes, the potential cost impacts of this rule depend on whether facilities' current wastewater treatment systems will meet the UTS levels or if additional treatment will be required. If current treatments are adequate, facilities will only incur administrative costs to have their permits revised. EPA estimates the total annualized costs of the rule for these wastes would range from approximately $197,000 to $598,000, of which $154,000 to $425,000 would be incurred at the 28 to 73 potentially affected facilities in the organic chemical industry, and approximately $43,000 to $173,000 would be incurred at the 8 to 30 potentially affected facilities in the petroleum refining industry. However, at the high end, if current wastewater treatment systems need to be augmented with additional treatment steps, the incremental compliance costs could be as high as $1 million per affected facility. The Agency does not have adequate data to estimate how many, if any, facilities may require modification to their treatment facilities. The Agency continues to request comment and data on how often additional treatment may be required.

For newly listed wastes, the costs are substantially higher and will be incurred each year. These costs range from approximately $11.9 million to $47.3 million and are attributable to thermal treatment of aluminum potliner wastes (K088). The Agency requests comment on where industry falls within this range.

c. Economic Impact Results. The Agency has estimated the economic impacts of today's rule to represent less than one percent of historic pollution control and operating costs for the organic chemical and petroleum refining industries. However, for those facilities that may need to treat to UTS to comply with today's rule, costs could be more significant. The estimated compliance costs for treating newly listed spent aluminum potliners represents 40 percent of pollution control operating costs for aluminum reducers; however, treatment costs represent only one percent of total historic operating costs.

d. Benefit Estimate Results. The Agency expects facilities to comply with the LDRs through permit modifications. As a result, the Agency has estimated the benefits associated with today's rule to be small. Assuming facilities comply with the rule by treating their affected wastestreams, loadings reductions estimates range between 1,527 to 21,322 metric tons per year at 129 to 291 facilities (direct and indirect dischargers) involving 175 to 647 constituent/wastestream combinations. Ninety-eight percent of the reductions occur at organic chemicals facilities, with the remainder occurring at petroleum refiners. Estimated loadings reductions for direct dischargers range between 36 and 267 tons per year, representing between 0.03 and 0.2 percent of total Toxic Release Inventory (TRI) chemical loadings to surface waters. For indirect dischargers, estimated loadings reductions range between 1,491 and 21,055 metric tons per year, representing between 0.8 and 11.0 percent of total TRI chemical loadings transferred to POTWs. Based upon the results of the screening and more detailed risk assessments, the estimated baseline risks associated with nine to twenty wastestreams (out of the 155 to 404 constituent/wastestream combinations potentially affected by the rule) exceed 10^{-6} under baseline conditions and three to six wastestreams with noncancer risk levels exceeding reference doses. These 12 to 26 wastestreams contain one of five constituents: aniline (9 to 19 wastestreams), acrylamide (0 to 1 wastestream), pyridine (2 waststreams), barium compounds (1 wastestream), and acetonitrile (0 to 2 wastestreams). For these 12 to 26 wastestreams, EPA conducted a more detailed risk assessment, using site-specific data. Results of the more detailed risk assessment indicate that the benefits from the rule are small. EPA identified four wastestreams potentially posing cancer risk exceeding the threshold risk levels. Three wastestreams pose baseline cancer risk ranging from 1×10^{-5} to 1×10^{-4} (due to exposure to aniline) which potentially would be reduced to between 8×10^{-8} and 3×10^{-6} under the LDR Phase III rule. A fourth wastestream containing acrylamide poses baseline cancer risk at a level of 2×10^{-3}. The rule is estimated to reduce this risk to between 2×10^{-4} and 4×10^{-36}. All four of these wastestreams are discharged to POTWs; if POTW treatment removes these constituents from the wastewater prior to discharge to surface water and/or if no drinking water intake is located downstream from the POTW's outfall, baseline risks will be lower. The Agency expects facilities to comply with the LDRs through permit modifications;

however, additional treatment may result in potentially significant risk reduction.

EPA performed constituent-specific fate and transport modeling using its EPACMTP to further assess cancer and noncancer risks of spent aluminum potliners. Using these additional data, EPA assessment of baseline risks indicates that individual lifetime cancer risks increase to about 10^{-6} under central tendency assumptions and 10^{-3} under high-end assumptions. In addition, the new estimates suggest that under high-end assumptions, baseline concentrations in drinking water may be high enough to present noncancer risks; previously, noncancer risks were estimated to be negligible. Consequently, the benefits of regulating spent aluminum potliners are higher than previously estimated. Under central tendency assumptions, individual lifetime cancer risks resulting from current waste management practices are slightly higher than post-regulatory risks (10^{-6} versus less than 10^{-6}); some incremental benefits may therefore be realized as a result of the LDRs. Under high-end assumptions, however, the regulation could reduce cancer risks by one or two order of magnitude, while noncancer risks could be eliminated. Although population risks would also be reduced correspondingly, EPA is unable to specify the magnitude of the exposed population.

B. Regulatory Impact Analysis for Underground Injected Wastes

The Agency has completed a separate regulatory impact analysis for underground injected wastes affected by the LDR Phase III final rule. This analysis describes the regulatory impacts only to the Class I injection well universe. The new Phase III LDRs cover decharacterized ICR and TC organic wastes, and other newly-identified hazardous wastes that are distinctly industrial wastes injected by owners and operators of only Class I hazardous and non-hazardous injection wells.

According to the available data outlined in the RIA, our best estimate indicates that of the 223 Class I injection facilities in the nation, up to 154 facilities will be affected by the new Phase III LDRs. Of these facilities, 100 inject nonhazardous waste and 54 inject hazardous waste. Combined, these facilities inject approximately 18 billion gallons of waste annually into Class I wells. These Class I injection wells will now be required to either treat wastes onsite, segregate and ship affected wastes offsite for treatment and disposal, or file no migration petitions as outlined in the UIC regulations in 40 CFR Part 148 (See 53 FR 28118, July 26, 1988, preamble for a mote thorough discussion of the no migration petition review process). Additional options for compliance with the final Phase III LDRs, including a *de minimis* exemption and a pollution prevention option discussed in detail elsewhere in this rule and in the final UIC RIA.

Of the newly affected Class I facilities, 38 already have no migration exemptions approved by EPA, but they may be required to submit a petition modification to EPA due to the Phase III rule unless their original petition already addressed affected Phase III wastes, including underlying hazardous constituents in decharacterized wastes. In the cases where the petition already covers all hazardous wastes and underlying hazardous constituents in the injected waste stream (i.e., the injectate that was evaluated during the no migration petition process has not changed), no further Agency review of these petitions is necessary. For the facilities which do not have approved no migration exemptions, the rule will add compliance costs to those incurred as a result of previous rulemakings. The Agency analyzed costs and benefits for the final Phase III rule using the same approach and methodology developed in the Regulatory Impact Analysis of the Underground Injection Control Program: Proposed Hazardous Waste Disposal Injection Restriction (53 FR 28118) and subsequent LDR rulemaking. An analysis was performed to assess the economic effect of associated compliance costs for the additional volumes of injected wastes attributable to this rule.

In general, Class I injection facilities affected by the LDR Phase III rule have several options. As previously outlined, some facilities will modify existing no migration petitions already approved by the Agency, others may submit entirely new petitions, and still others may accept the prohibitions and either continue to inject treated wastes or cease injection operations altogether. And some facilities with approved petitions already addressing Phase III wastes will have no or little additional compliance costs. EPA assessed compliance costs for Class I facilities submitting no migration petitions, employing alternative treatment, and/or implementing pollution prevention measures. Although facilities using pollution prevention/waste minimization to comply with the Phase III LDRs will likely lower overall regulatory compliance costs, these situations are site-specific and, therefore, EPA cannot estimate these costs savings at this time.

For Class I facilities opting to use alternative treatment, the Agency derived costs for both treating wastes on-site, and/or shipping wastes and treating them off-site at a commercial facility. However, EPA believes that the segregation and transportation of large volumes of liquid wastes off-site is not very practical or cost-effective. This makes the off-site treatment scenario, at best, a highly conservative analysis and in actuality, a least likely and therefore discountable scenario. EPA expects that all injection facilities will opt for the most cost-effective approach in complying with the Phase III final rule and they will either submit a no migration petition or treat their wastes on-site. EPA also assumes that non-commercial facilities will segregate wastes for treatment on-site, whereas commercial facilities will find it more cost effective to not segregate LDR Phase III wastes. For the final rule, EPA estimates that the total annual compliance cost for petitions and alternative on-site treatment to industry affected by the new LDR Phase III prohibitions will range between $32.91 million to $34.08 million per year. The average annual compliance costs per affected facility employing on-site alternative treatment were $217,500. The range of costs for alternative treatment is the result of applying a sensitivity analysis. Only the incremental treatment costs for the new waste listings are calculated in this RIA. All of these costs will be incurred by Class I injection well owners and operators. The average annual compliance costs per affected facility employing on-site alternative treatment were $217,500. The total annual compliance costs for the 154 potentially affected facilities would therefore be $33.4 million. These figures were derived by applying the probability of certain outcomes occurring, via the decision tree methodology described in the RIA, to the costs associated with those outcomes for each affected facility.

Additionally, as part of the RIA analysis, the costs associated with three differing scenarios also were derived. These scenarios are represented by (1) a minimum case, where all facilities incur only petition costs, (2) a mid-line case, where all facilities incur treatment costs (commercial facilities treat on-site with no waste segregation while non-commercial facilities chose the least cost treatment option), and a maximum case, where all facilities incur both petition and treatment costs. Costs associated with these scenarios range from $3.67 million per year for all facilities incurring only petition costs to $132.62 million per year for all facilities incurring both petition and treatment costs. Based on past EPA experience, there is little probability that all facilities will arrive at each of these possible outcomes. However, this indicated range provides an extreme lower and upper bound estimate for national compliance costs purposes.

The benefits to human health and the environment in the RIA are generally defined as reduced human health risk resulting from fewer instances of ground water contamination. In general, potential health risks from Class I injection wells are extremely low.

EPA conducted a quantitative assessment of the potential human health risks associated with two well malfunction scenarios. EPA developed a methodology described in the RIA to measure health risks of five Phase III contaminants: benzene, carbon tetrachloride, chloroform, phenol, and toluene. The results of these analyses show that most of the cancer risks calculated are below the 1×10^{-4} to 1×10^{-6} risk range generally used by EPA to regulate exposure to carcinogens. Virtually all of the non-cancer risks are below a hazard index (HI) of 1, which represents a ratio used to compare the relative health risks posed by contaminants. Therefore, these cancer and non-cancer risks calculated are below any levels of regulatory concern. Only two cancer risk estimates in the high end scenarios, those calculated for benzene and carbon tetrachloride, slightly exceeded the risk range to regulate exposure to carcinogens. Only one hazard index calculated for carbon tetrachloride exceeded EPA's level of concern of a ratio greater than 1. However, these results were derived from a scenario where an abandoned borehole (i.e. the "failure pathway") was in very close proximity to the injection well, substantial pumping of a drinking water well was occurring, and the local geology was typical of the highly transmissive East Gulf Coast Region. The assumptions used in deriving these results were based on conservative, upper-bound estimates, therefore the cancer and non-cancer risks represent worst-case estimates. Considering the limitations imposed by the failure scenarios, and the documented low probability of Class I failures, the overall risks from failure of Class I injection wells would be below regulatory concern.

There also is a potential qualitative benefit to the no-migration process for Class I nonhazardous wells. It is possible that the process would uncover certain wells that cannot satisfy the no-migration standard and indeed may not be suitable for Class I injection in any case. This proved to be true for Class I hazardous wells. However, notwithstanding this potential benefit, as noted in the early part of this preamble, the Agency does not regard this regulatory effort as deserving of the priority afforded it, due to the litigation-driven schedule and the D.C. Circuit's mandate, and would not be undertaking the effort at this time were it not for that mandate and schedule.

The economic analysis of LDR Phase III compliance costs suggests that publicly traded companies probably will not be significantly affected. The limited data available for privately-held companies suggests, however, that they may face significant costs due to the proportionally larger expenses they may face due to the LDR Phase III rule.

C. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 et seq., when an agency publishes a 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 rule, for both surface disposal of wastes, the Agency considered two factors. First, data on potentially affected small entities are unavailable. Second, due to the statutory requirements of the RCRA LDR program, no legal avenues exist for the Agency to provide relief from the LDR's 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 regulate the land disposal of the hazardous wastes covered in today's rule without regard to the size of the entity being regulated.

The Agency has, however, included an exemption covering injection facilities where the decharacterized portion of the injectate is minimal in absolute terms, as a percentage of the total injectate, and in hazardous constituent mass loadings. This *de minimis* exemption provides a measure of relief to both small and larger entities satisfying its terms.

D. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Four Information Collection Request (ICR) documents have been prepared by EPA, as follows. OSWER ICR No. 1442.12 would amend the existing ICR approved under OMB Control No. 2050–0085. The additional information requirements for the Underground Injection Control (UIC) Program were submitted to OMB under ICR No. 0370.14; this will amend the existing UIC approval under OMB Control No. 2040–0042. OSWER ICR No. 1442.12 and UIC ICR No. 0370.14 have not been approved by OMB and the information collection requirements in those ICRs are not enforceable until OMB approves them. EPA will publish a document in the **Federal Register** when OMB approves the information collection requirements. Until EPA publishes a document displaying the valid OMB control number, persons are not required to respond to collections of information in these two ICRs. Two amendments to National Pollutant Discharge Elimination System (NPDES) ICRs were approved at proposal. These are ICR 0229.10 for the Discharge Monitoring Report, approved under OMB Control No. 2040–0004, and ICR 0226.11 for NPDES Applications, approved under OMB Control No. 2040–0086.

Copies of these ICRs may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, D.C. 20460 or by calling (202) 260–2740. Include the ICR numbers in any request. The information requirements for the

OSWER ICR and the UIC ICR are not effective until OMB approves them.

The additional burden associated with the OSWER ICR 1442.12 is as follows. The overall annual burden for the recordkeeping and reporting requirements is 4,202 hours. It is expected that approximately 125 respondents will be affected, therefore, the annual recordkeeping and reporting burden averages 33 hours per respondent. This time is necessary to collect data, submit notifications and certifications to waste treaters and disposers, and to maintain records of this information. The annual cost burden for this rule is approximately $177,045. Of this amount, it is estimated that facilities will incur annual operation and maintainence capital costs of approximately $8,375.

The additional burden associated with the UIC Program, explained in ICR 0370.14, is as follows. The estimated annual reporting burden averages 3845 hours per respondent (i.e., inclusive of incremental reporting burdens associated with all affected Class I facilities and Primacy States). The average incremental annual reporting and recordkeeping burdens are about 4,442 hours per each affected Class I nonhazardous facility and about 2,700 hours per each affected Class I hazardous facility. For efforts associated with implementing the rule amendments, the annual incremental State burden equals about 22 hours for each Class I respondent.

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

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection of techniques to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, D.C. 20503, marked "Attention: Desk Officer for EPA." Include the ICR numbers in any correspondence.

X. 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 LDR Phase III 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 Final Phase III Land Disposal Restrictions Rule," which was placed in the docket for today's rule.

List of Subjects

40 CFR Part 148

Environmental protection, 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.

40 CFR Part 403

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

Dated: February 16, 1996.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

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

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

2. Section 148.1 is amended by revising paragraphs (a), (b) and (d) to read as follows:

§ 148.1 Purpose, scope and applicability.

(a) This part identifies wastes that are restricted from disposal into Class I wells and defines those circumstances under which a waste, otherwise prohibited from injection, may be injected.

(b) The requirements of this part apply to owners or operators of Class I hazardous waste injection wells used to inject hazardous waste; and, owners or operators of Class I injection wells used to inject wastes which once exhibited a prohibited characteristic of hazardous waste identified in 40 CFR part 261, subpart C, at the point of generation, and no longer exhibit the characteristic at the point of injection.

* * * * *

(d) Wastes that are only hazardous because they display a characteristic of ignitability, corrosivity, reactivity, or toxicity that are otherwise prohibited, are not prohibited:

(1) If the wastes are disposed into a nonhazardous waste injection well defined under 40 CFR 144.6(a); and

(2) Do not exhibit any prohibited characteristic of hazardous waste identified in 40 CFR part 261, subpart C, and either:

(i) Do not contain any hazardous constituents identified in 40 CFR 268.48 at levels greater than the 40 CFR 268.48 Universal Treatment Standard levels at the point of generation;

(ii) Are de minimis in volume and hazardous constituent concentration levels, as defined in 40 CFR 268.1(e)(4)(ii). (Recordkeeping requirements for this alternative are found at 40 CFR 268.9(d)(4).); or

(iii)(A) The facility removes an equivalent mass of hazardous constituents as would be removed by treating the characteristic hazardous wastestream pursuant to the treatment standards in 40 CFR 268.48. This mass reduction can come from:

(*1*) Treating nonhazardous portions of the injectate;

(*2*) Recycling before ultimate injection; or

(*3*) Engaging in pollution prevention practices (such as equipment or technology modifications, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control).

(B) The compliance alternative in paragraph (d)(2)(iii)(A) of this section is demonstrated by comparing the injected baseline (determined by multiplying the volume/day of characteristically hazardous waste generated and injected) times the concentration of hazardous constituents before the treatment/recycling/pollution prevention measure, with the mass allowance obtained by multiplying the volume/day of a hazardous constituent generated and injected times the universal treatment standard for that constituent. The baseline cannot include practices initiated before the year 1990. (Recordkeeping requirements for this alternative are found at 40 CFR 268.9(d)(3).)

3. Section 148.3 is revised to read as follows:

§ 148.3 Dilution prohibited as a substitute for treatment.

(a) The provisions of 40 CFR 268.3 shall apply to owners or operators of Class I wells used to inject a waste which is hazardous at the point of generation whether or not the waste is hazardous at the point of injection.

(b) Owners or operators of Class I nonhazardous waste injection wells which inject waste formerly exhibiting a hazardous characteristic which has been removed by dilution, may address underlying hazardous constituents by treating the hazardous waste, obtaining an exemption pursuant to a petition filed under § 148.20, or complying with the provisions set forth in 40 CFR 268.9.

4. Section 148.4 is revised to read as follows:

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

The owner or operator of a Class I hazardous or nonhazardous waste injection well may submit an application to the Administrator for an extension of the effective date of any applicable prohibition established under subpart B of this part according to the procedures of 40 CFR 268.5.

5. Section 148.18 is added to subpart B to read as follows:

§ 148.18 Waste specific prohibitions—Newly Identified Wastes.

(a) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–387, U389–U396, U400–U404, U407, and U409–U411 are prohibited from underground injection.

(b) On January 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste number K088 is prohibited from underground injection.

(c) On April 8, 1998, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers D018–043, and Mixed TC/Radioactive wastes, are prohibited from underground injection.

(d) On April 8, 1998, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers D001–D003 are prohibited from underground injection.

6. Section 148.20 is amended by revising paragraph (a) introductory text to read as follows:

§ 148.20 Petitions to allow injection of a waste prohibited under subpart B.

(a) Any person seeking an exemption from a prohibition under subpart B of this part for the injection of a restricted hazardous waste, including a hazardous waste exhibiting a characteristic and containing underlying hazardous constituents at the point of generation, but no longer exhibiting a characteristic when injected into a Class I injection well or wells, shall submit a petition to the Director demonstrating that, to a reasonable degree of certainty, there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. This demonstration requires a showing that:

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

7. 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

8. Section 268.1 is amended in paragraph (e)(3) by removing the period at the end of the paragraph and adding "; or" in its place, by revising paragraph (e)(4) and by removing paragraph (e)(5) to read as follows:

§ 268.1 Purpose, scope and applicability.

* * * * *

(e) * * *

(4) *De minimis* losses of characteristic wastes to wastewaters are not considered to be prohibited wastes and are defined as:

(i) Losses from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; rinsate from empty containers or from containers that are rendered empty by that rinsing; and laboratory wastes not exceeding one per cent of the total flow of wastewater into the facility's headworks on an annual basis, or with a combined annualized average concentration not exceeding one part per million in the headworks of the facility's wastewater treatment or pretreatment facility; or

(ii) Decharacterized wastes which are injected into Class I nonhazardous wells which wastes combined volume is less than one per cent of the total flow at the wellhead on an annualized basis, is no greater than 10,000 gallons per day, and in 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.

* * * * *

9. Section 268.2 is amended by revising paragraphs (f) and (i), and by adding paragraphs (j), (k), and (l) to read as follows:

§ 268.2 Definitions applicable in this part.

* * * * *

(f) *Wastewaters* are wastes that contain less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS).

* * * * *

(i) *Underlying hazardous constituent* means any constituent listed in § 268.48, Table UTS—Universal Treatment Standards, except fluoride, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standards.

(j) *Inorganic metal-bearing waste* is one for which EPA has established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content as described in § 268.3(b)(1), and is specifically listed in appendix XI of this part.

(k) *End-of-pipe* refers to the point where effluent is discharged to the environment.

(l) *Stormwater impoundments* are surface impoundments which receive wet weather flow, and only receive process waste during wet weather events.

10. Section 268.3 is revised to read as follows:

§ 268.3 Dilution prohibited as a substitute for treatment.

(a) No generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with subpart D of this part, to circumvent the effective date of a prohibition in subpart C of this part, to otherwise avoid a prohibition in subpart C of this part, or to circumvent a land disposal prohibition imposed by RCRA section 3004.

(b) Dilution of wastes that are hazardous only because they exhibit a hazardous characteristic in a treatment system which treats wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Clean Water Act (CWA), or which treats wastes for the purposes of pretreatment requirements under section 307 of the CWA, or zero discharge systems with wastewater treatment equivalent to these systems, is not impermissible dilution, so long as the § 268.48 universal treatment standards are met at the point of discharge, or at a prior point of compliance specified under a CWA permit, for all underlying hazardous constituents reasonably expected to be present at the point of generation of the hazardous waste.

(c) Combustion of the hazardous waste codes listed in Appendix XI of this part is prohibited, unless the waste, at the point of generation, or after any bona fide treatment such as cyanide destruction prior to combustion, can be demonstrated to comply with one or more of the following criteria (unless otherwise specifically prohibited from combustion):

(1) the waste contains hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard found in § 268.48;

(2) The waste consists of organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste;

(3) The waste, at point of generation, has reasonable heating value such as greater than or equal to 5000 BTU per pound;

(4) The waste is co-generated with wastes for which combustion is a required method of treatment;

(5) The waste is subject to Federal and/or State requirements necessitating reduction of organics (including biological agents); or

(6) The waste contains greater than 1% Total Organic Carbon (TOC).

11. Section 268.7 is amended by revising the last sentence of paragraph (a) introductory text, paragraphs (a)(1)(ii), (a)(2)(i)(B), (a)(3)(ii), (b)(4)(ii), (b)(5)(iv), by removing "268.45';" at the end of paragraph (a)(1)(iv) and adding "268.45'; and" in its place, by removing "; and," at the end of paragraph (a)(1)(v) and adding a period in its place, by removing paragraph (a)(1)(vi), and by adding paragraph (b)(5)(v) to read as follows:

§ 268.7 Waste analysis and recordkeeping.

(a) * * * If the generator determines that his waste exhibits the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by CMBST or RORGS of § 268.42, Table 1), and/or the characteristic of corrosivity (D002), and/or reactivity (D003), and/or the characteristic of organic toxicity (D012–D043), and is prohibited under § 268.37, § 268.38, and § 268.39, the generator must determine the underlying hazardous constituents (as defined in § 268.2, in the D001, D002, D003, or D012–D043 wastes.

(1) * * *

(ii) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001–F005, F039, D001, D002, D003, and D012–D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in § 268.2 (d) and (f), and indicate the subcategory of the waste (such as "D003 reactive cyanide"), if applicable;

* * * * *

(2) * * *

(i) * * *

(B) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001–F005, F039, D001, D002, D003, and D012–D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in § 268.2(d) and (f)) and indicate the subcategory of the waste (such as "D003 reactive cyanide"), if applicable;

* * * * *

(3) * * *

(ii) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001–F005, F039, D001, D002, D003, and D012–D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in § 268.2(d) and (f)), and indicate the subcategory of the waste (such as "D003 reactive cyanide"), if applicable;

* * * * *

(b) * * *

(4) * * *

(ii) The waste constituents to be monitored, if monitoring will not include all regulated constituents, for wastes F001–F005, F039, D001, D002, D003, and D012–D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in § 268.2(d) and (f), and indicate the subcategory of the waste (such as D003 reactive cyanide), if applicable;

* * * * *

(5) * * *

(iv) For characteristic wastes D001, D002, D003, and D012–D043 that are: subject to the treatment standards in § 268.40 (other than those expressed as a required method of treatment); that are reasonably expected to contain underlying hazardous constituents as defined in § 268.2(i); are treated on-site to remove the hazardous characteristic; and are then sent off-site for treatment of underlying hazardous constituents, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(v) For characteristic wastes D001, D002, D003 and D012–D043 that contain underlying hazardous constituents as defined in § 268.2(i) that are treated on-site to remove the hazardous characteristic and to treat underlying hazardous constituents to levels in § 268.48 Universal Treatment Standards, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic, and that underlying hazardous constituents, as defined in § 268.2, have been treated on-site to meet the § 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

* * * * *

§ 268.8 [Removed and reserved]

12. Section 268.8 is removed and reserved.

13. Section 268.9 is amended by revising paragraphs (a), (d) introductory text, (d)(1)(i), and (d)(1)(ii), and by adding paragraphs (d)(3), (e), (f), and (g) 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 this part 268, the waste will carry the waste code for any applicable listing under 40 CFR part 261, subpart D. In addition, the waste will carry one or more of the waste codes under 40 CFR part 261, subpart C, where the waste exhibits a characteristic, except in the case when the treatment standard for the waste code listed in 40 CFR part 261, subpart D operates in lieu of the standard for the waste code under 40 CFR part 261, subpart C, as specified in paragraph (b) of this section. If the generator determines that his waste displays a hazardous characteristic (and the waste is not a D004—D011 waste, a High TOC D001, or is not treated by CMBST, or RORGS of § 268.42, Table 1), the generator must determine what underlying hazardous constituents (as defined in § 268.2), are reasonably expected to be present above the universal treatment standards found in § 268.48.

* * * * *

(d) Wastes that exhibit a characteristic are also subject to § 268.7 requirements, except that once the waste is no longer hazardous, a one-time notification and certification must be placed in the generators or treaters files and sent to the EPA region or authorized state, except for those facilities discussed in paragraph (f) of this section. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the Subtitle D facility receiving the waste changes. However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later than December 31.

(1) * * *

(i) For characteristic wastes other than those managed on site in a wastewater treatment system subject to the Clean Water Act (CWA), zero-dischargers engaged in CWA-equivalent treatment, or Class I nonhazardous injection wells, the name and address of the Subtitle D facility receiving the waste shipment; and

(ii) For all characteristic wastes, a description of the waste as initially generated, including the applicable EPA Hazardous Waste Number(s), treatability group(s), and underlying hazardous constituents.

* * * * *

(3) For characteristic wastes whose ultimate disposal will be into a Class I nonhazardous injection well, and compliance with the treatment standards found in § 268.48 for underlying hazardous constituents is achieved through pollution prevention that meets the criteria set out at 40 CFR 148.1(d), the following information must also be included:

(i) A description of the pollution prevention mechanism and when it was implemented if already complete;

(ii) The mass of each underlying hazardous constituent before pollution prevention;

(iii) The mass of each underlying hazardous constituent that must be removed, adjusted to reflect variations in mass due to normal operating conditions; and

(iv) The mass reduction of each underlying hazardous constituent that is achieved.

(e) For decharacterized wastes managed on-site in a wastewater treatment system subject to the Clean Water Act (CWA) or zero-dischargers engaged in CWA-equivalent treatment, compliance with the treatment standards found at § 268.48 must be monitored quarterly, unless the treatment is aggressive biological treatment, in which case compliance must be monitored annually. Monitoring results must be kept in on-site files for 5 years.

(f) For decharacterized wastes managed on-site in a wastewater treatment system subject to the Clean Water Act (CWA) for which all underlying hazardous constituents (as defined in § 268.2), are addressed by a CWA permit, this compliance must be documented and this documentation must be kept in on-site files.

(g) For characteristic wastes whose ultimate disposal will be into a Class I nonhazardous injection well which qualifies for the *de minimis* exclusion described in § 268.1, information supporting that qualification must be kept in on-site files.

§§ 268.10–268.12 [Removed and Reserved]

14. Sections 268.10 through 268.12 are removed and reserved.

15. Section 268.39 is added to subpart C to read as follows:

§ 268.39 Waste specific prohibitions—End-of-pipe CWA, CWA-equivalent, and Class I nonhazardous injection well treatment standards; spent aluminum potliners; and carbamate wastes.

(a) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K156–K161; and in 40 CFR 261.33 as EPA Hazardous Waste numbers P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, and U409–U411 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

(b) On July 8, 1996 the wastes identified in 40 CFR 261.23 as D003 that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. This prohibition does not apply to unexploded ordnance and other explosive devices which have been the subject of an emergency response (such D003 wastes are prohibited unless they meet the treatment standard of DEACT before land disposal (see § 268.40)).

(c) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste number K088 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

(d) On April 8, 1998, decharacterized wastes managed in surface impoundments whose discharge is regulated under the Clean Water Act (CWA), or decharacterized wastes managed by zero dischargers in surface impoundments or tanks that engage in CWA-equivalent treatment before ultimate land disposal are prohibited from land disposal. The following are exceptions to this requirement:

(1) Surface impoundments which are permitted under subtitle C of RCRA;

(2) Storm water impoundments as defined in § 268.2;

(3) Surface impoundments which are part of facilities in the pulp, paper, and paperboard industrial category.

(e) On April 8, 1998, Radioactive wastes mixed with K088, K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, and U407, U409–U411 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

(f) Between July 8, 1996 and April 8, 1998, the wastes included in paragraphs (a), (b), (c), and (e) of this section 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).

(g) The requirements of paragraphs (a), (b), (c), (d), and (e) 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;

(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.

(h) 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 in excess of the applicable Subpart D levels, the waste is prohibited from land disposal, and all requirements of this part 268 are applicable, except as otherwise specified.

16. Section 268.40 is amended by revising paragraph (e) and the table at the end of § 268.40 to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

(e) For characteristic wastes (D001–D043) that are 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.

(1) When these wastes are managed in wastewater treatment systems regulated by the Clean Water Act (CWA), compliance with the treatment standards must be achieved no later than "end-of-pipe" as defined in § 268.2(k); or

(2) When these wastes are managed in CWA-equivalent treatment systems and tank-based systems that discharge onto the land, compliance with the treatment standards must be achieved no later than the point the wastewater is released to the land (e.g., spray irrigation, discharge to dry river beds, placed into evaporation ponds); or

(3) When these wastes are managed in Class I nonhazardous injection wells, compliance with the treatment standards must be achieved no later than the well head; or

(4) For all other, compliance with the treatment standard must be met prior to land disposal as defined in § 268.2(c).

* * * * *

Treatment Standards for Hazardous Wastes

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent: Common name	Regulated hazardous constituent: CAS[2] No.	Wastewaters: Concentration in mg/l[3]; or technology code[4]	Nonwastewaters: Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
D001	Ignitable Characteristic Wastes, except for the § 261.21(a)(1) High TOC Subcategory.	NA	NA	DEACT and meet § 268.48 standards; or RORGS; or CMBST[8]	DEACT and meet § 268.48 standards; or RORGS; or CMBST[8]
	High TOC Ignitable Characteristic Liquids Subcategory based on 40 CFR 261.21(a)(1)—Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only).	NA	NA	NA	RORGS; or CMBST
D002	Corrosive Characteristic Wastes.	NA	NA	DEACT and meet § 268.48 standards[8]	DEACT and meet § 268.48 standards[8]
D002, D004, D005, D006, D007, D008, D009, D010, D011.	Radioactive high level wastes generated during the reprocessing of fuel rods. (Note: This subcategory consists of nonwastewaters only).	Corrosivity (pH)	NA	NA	HLVIT
		Arsenic	7440–38–2	NA	HLVIT
		Barium	7440–39–3	NA	HLVIT
		Cadmium	7440–43–9	NA	HLVIT
		Chromium (Total)	7440–47–3	NA	HLVIT
		Lead	7439–92–1	NA	HLVIT
		Mercury	7439–97–6	NA	HLVIT
		Selenium	7782–49–2	NA	HLVIT
		Silver	7440–22–4	NA	HLVIT
D003	Reactive Sulfides Subcategory based on 261.23(a)(5).	NA	NA	DEACT and meet § 268.48 standards[8]	DEACT and meet § 268.48 standards[8]
	Explosives Subcategory based on 261.23(a) (6), (7) and (8).	NA	NA	DEACT and meet § 268.48 standards[8]	DEACT and meet § 268.48 standards[8]
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Other Reactives Subcategory based on 261.23(a)(1).	NA	NA	DEACT and meet § 268.48 standards[8]	DEACT and meet § 268.48 standards[8]
	Water Reactive Subcategory based on 261.23(a) (2), (3), and (4). (Note: This subcategory consists of nonwastewaters only).	NA	NA	NA	DEACT and meet § 268.48 standards[8]
	Reactive Cyanides Subcategory based on 261.23(a)(5).	Cyanides (Total)[7]	57–12–5	Reserved	590
		Cyanides (Amendable)[7]	57–12–5	0.86	30
D004	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic based on the extraction procedure (EP) in SW846 Methods 1310.	Arsenic	7440–38–2	5.0	5.0 mg/l EP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
		Arsenic; alternate[6] standard for nonwastewaters only.	7440–38–2	NA	5.0 mg/l TCLP
D005	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium based on the extraction procedure (EP) in SW846 Method 1310.	Barium	7440–39–3	100	100 mg/l TCLP
D006	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium based on the extraction procedure (EP) in SW846 Method 1310.	Cadmium	7440–43–9	1.0	1.0 mg/l TCLP
	Cadmium Containing Batteries Subcategory. (Note: This subcategory consists of nonwastewaters only).	Cadmium	7440–43–9	NA	RTHRM
D007	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium based on the extraction procedure (EP) in SW846 Method 1310.	Chromium (Total)	7440–47–3	5.0	5.0 mg/l TCLP
D008	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead based on the extraction procedure (EP) in SW846 Method 1310.	Lead	7439–92–1	5.0	5.0 mg/l EP
		Lead; alternate[6] standard for nonwastewaters only.	7439–92–1	NA	5.0 mg/l TCLP
	Lead Acid Batteries Subcategory (Note: This standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of 40 CFR 268 or exempted under other EPA regulations (see 40 CFR 266.80). This subcategory consists of nonwastewaters only.).	Lead	7439–92–1	NA	RLEAD
	Radioactive Lead Solids Subcategory (Note: these lead solids include, but are not limited to, all forms of lead shielding and other elemental forms of lead. These lead solids do not include treatment residuals such as hydroxide sludges, other wastewater treatment residuals, or incinerator ashes that can undergo conventional pozzolanic stabilization, nor do they include organo-lead materials that can be incinerated and stabilized as ash. This subcategory consists of nonwastewaters only).	Lead	7439–92–1	NA	MACRO

D009	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory.).	Mercury	7439–97–6	NA	IMERC; OR RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory.).	Mercury	7439–97–6	NA	RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; 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	0.20	NA
	Elemental mercury contaminated with radioactive materials. (Note: This subcategory consists of nonwastewaters only.).	Mercury	7439–97–6	NA	AMLGM
	Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory. (Note: This subcategory consists of nonwastewaters only.).	Mercury	7439–97–6	NA	IMERC
D010	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium based on the extraction procedure (EP) in SW846 Method 1310.	Selenium	7782–49–2	1.0	5.7 mg/l TCLP
D011	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver based on the extraction procedure (EP) in SW846 Method 1310.	Silver	7440–22–4	5.0	5.0 mg/l TCLP
D012	Wastes that are TC for Endrin based on the TCLP in SW846 Method 1311.	Endrin	72–20–8	BIODG; or CMBST [8]	0.13 and meet § 268.48 standards [8]
		Endrin aldehyde	7421–93–4	BIODG; or CMBST [8]	0.13 and meet § 268.48 standards [8]
D013	Wastes that are TC for Lindane based on the TCLP in SW846 Method 1311.).	alpha-BHC	319–84–6	CARBN; or CMBST [8]	0.066 and meet § 268.48 standards [8]
		beta–BHC	319–85–7	CARBN; or CMBST [8]	0.066 and meet § 268.48 standards [8]
		delta-BHC	319–86–8	CARBN; or CMBST [8]	0.066 and meet § 268.48 standards [8]
		gamma-BHC (Lindane)	58–89–9	CARBN; or CMBST [8]	0.066 and meet § 268.48 standards [8]
D014	Wastes that are TC for Methoxychlor based on the TCLP in SW846 Method 1311.	Methoxychlor	72–43–5	WETOX or CMBST [8]	0.18 and meet § 268.48 standards [8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
D015	Wastes that are TC for Toxaphene based on the TCLP in SW846 Method 1311.	Toxaphene	8001–35–2	BIODG or CMBST[8]	2.6 and meet § 268.48 standards[8]
D016	Wastes that are TC for 2,4-D (2,4-Dichlorophenoxyacetic acid) based on the TCLP in SW846 Method 1311.	2,4-D (2,4-Dichlorophenoxyacetic acid).	94–75–7	CHOXD, BIODG, or CMBST[8]	10 and meet § 268.48 standards[8]
D017	Wastes that are TC for 2,4,5-TP (Silvex) based on the TCLP in SW846 Method 1311.	2,4,5-TP (Silvex)	93–72–1	CHOXD or CMBST[8]	7.9 and meet § 268.48 standards[8]
D018	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311.	Benzene	71–43–2	0.14 and meet § 268.48 standards[8]	10 and meet § 268.48 standards[8]
D019	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311.	Carbon tetrachloride	56–23–5	0.057 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D020	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311.	Chlordane (alpha and gamma isomers).	57–74–9	0.0033 and meet § 268.48 standards[8]	0.26 and meet § 268.48 standards[8]
D021	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311.	Chlorobenzene	108–90–7	0.057 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D022	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311.	Chloroform	67–66–3	0.046 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D023	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311.	o-Cresol	95–48–7	0.11 and meet § 268.48 standards[8]	5.6 and meet § 268.48 standards[8]
D024	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311.	m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77 and meet § 268.48 standards[8]	5.6 and meet § 268.48 standards[8]
D025	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311.	p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77 and meet § 268.48 standards[8]	5.6 and meet § 268.48 standards[8]
D026	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311.	Cresol-mixed isomers (Cresylic acid)(sum of o-, m-, and p-cresol concentrations).	1319–77–3	0.88 and meet § 268.48 standards[8]	11.2 and meet § 268.48 standards[8]
D027	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311.	p-Dichlorobenzene (1,4-Dichlorobenzene).	106–46–7	0.090 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D028	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311.	1,2-Dichloroethane	107–06–2	0.21 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D029	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311.	1,1-Dichloroethylene	75–35–4	0.025 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]

D030	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311.	2,4-Dinitrotoluene	121–14–2	0.32 and meet § 268.48 standards [8]	140 and meet § 268.48 standards [8]
D031	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311.	Heptachlor	76–44–8	0.0012 and meet § 268.48 standards [8]	0.066 and meet § 268.48 standards [8]
		Heptachlor epoxide	1024–57–3	0.016 and meet § 268.48 standards [8]	0.066 and meet § 268.48 standards [8]
D032	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311.	Hexachlorobenzene	118–74–1	0.055 and meet § 268.48 standards [8]	10 and meet § 268.48 standards [8]
D033	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311.	Hexachlorobutadiene	87–68–3	0.055 and meet § 268.48 standards [8]	5.6 and meet § 268.48 standards [8]
D034	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311.	Hexachloroethane	67–72–1	0.055 and meet § 268.48 standards [8]	30 and meet § 268.48 standards [8]
D035	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311.	Methyl ethyl ketone	78–93–3	0.28 and meet § 268.48 standards [8]	36 and meet § 268.48 standards [8]
D036	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311.	Nitrobenzene	98–95–3	0.068 and meet § 268.48 standards [8]	14 and meet § 268.48 standards [8]
D037	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311.	Pentachlorophenol	87–86–5	0.089 and meet § 268.48 standards [8]	7.4 and meet § 268.48 standards [8]
D038	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311.	Pyridine	110–86–1	0.014 and meet § 268.48 standards [8]	16 and meet § 268.48 standards [8]
D039	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	Tetrachloroethylene	127–18–4	0.056 and meet § 268.48 standards [8]	6.0 and meet § 268.48 standards [8]
D040	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311.	Trichloroethylene	79–01–6	0.054 and meet § 268.48 standards [8]	6.0 and meet § 268.48 standards [8]
D041	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,5-Trichlorophenol	95–95–4	0.18 and meet § 268.48 standards [8]	7.4 and meet § 268.48 standards [8]
D042	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,6-Trichlorophenol	88–06–2	0.035 and meet § 268.48 standards [8]	7.4 and meet § 268.48 standards [8]
D043	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311.	Vinyl chloride	75–01–4	0.27 and meet § 268.48 standards [8]	6.0 and meet § 268.48 standards [8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
F001, F002, F003, F004, & F005	F001, F002, F003, F004, and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluorethane, trichloroethane, trichloromonofluouromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in § 261.31.	Acetone	67–64–1	0.28	160
		Benzene	71–42–2	0.14	10
		n-Butyl alcohol	71–36–3	5.6	2.6
		Carbon disulfide	75–15–0	3.8	NA
		Carbon tetrachloride	56–23–5	0.057	6.0
		Chlorobenzene	108–90–7	0.057	6.0
		o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations.	1319–77–3	0.88	11.2
		Cyclohexanone	108–94–1	0.36	NA
		o-Dichlorobenzene	95–50–1	0.088	6.0
		Ethyl acetate	141–78–6	0.34	33
		Ethyl benzene	100–41–4	0.057	10
		Ethyl ether	60–29–7	0.12	160
		Isobutyl alcohol	78–83–1	5.6	170
		Methanol	67–56–1	5.6	NA
		Methylene chloride	75–9–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Methyl isobutyl ketone	108–10–1	0.14	33
		Nitrobenzene	98–95–3	0.068	14
		Pyridine	110–86–1	0.014	16
		Tetrachloroethylene	127–18–4	0.056	6.0
		Toluene	108–88–3	0.080	10
		1,1,1-Trichlorethane	71–55–6	0.054	6.0
		1,1,2-Trichloroethane	79–00–5	0.054	6.0

		1,1,2-Trichloro-1,2,2-trifluoroethane.	76–13–1	0.057	30
		Trichloroethylene	79–01–6	0.054	6.0
		Trichloromonofluoromethane	75–69–4	0.020	30
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations.	1330–20–7	0.32	30
	F003 and/or F005 solvent wastes that contain any combination of one or more of the following three solvents as the only listed F001–5 solvents: carbon disulfide, cyclohexanone, and/or methanol. (formerly 268.41(c)).	Carbon disulfide	75–15–0	3.8	4.8 mg/1 TCLP
		Cyclohexanone	108–94–1	0.36	0.75 mg/l TCLP
		Methanol	67–56–1	5.6	0.75 mg/l TCLP
	F005 solvent waste containing 2-Nitropropane as the only listed F001–5 solvent..	2-Nitropropane	79–46–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
	F005 solvent waste containing 2—Ethoxyethanol as the only listed F001–5 solvent..	2-Ethoxyethanol	110–80–5	BIODG; or CMBST	CMBST
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum..	Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amendable) [7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	0.43	0.30 mg/l TCLP
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440–43–9	0.69	0.19 mg/1 TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30

F020, F021, F022, F023, F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives, excluding wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F020); (2) pentachlorophenol, or of intermediates used to produce its derivatives (i.e., F021); (3) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F022); and from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenols, excluding wastes from equipment used only for the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F023); (2) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F026).	HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzo-furans).	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.000035	0.001
		Pentachlorophenol	87–86–5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans).	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95–95–4	0.18	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.).	All F024 wastes	NA	CMBST	CMBST
		2-Chloro-1,3-butadiene	126–99–8	0.057	0.28
		3-Chloropropylene	107–05–1	0.036	30
		1,1-Dichloroethane	75–34–3	0.059	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,2-Dichloropropane	78–87–5	0.85	18
		cis-1,3-Dichloropropylene	10061–01–5	0.036	18
		trans-1,3-Dichloropropylene	10061–02–6	0.036	18
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Hexachloroethane	67–72–1	0.055	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
F025	Condensed light ends from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,1-Dichloroethylene	75–35–4	0.025	6.0
		Methylene chloride	75–9–2	0.089	30
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
		Vinyl chloride	75–01–4	0.27	6.0
	Spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. F025—Spent Filters/Aids and Desiccants Subcategory.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachloroethane	67–72–1	0.055	30
		Methylene chloride	75–9–2	0.089	30
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
		Vinyl chloride	75–01–4	0.27	6.0
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component).	HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.059	NA
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.059	3.4
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.14	10
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.059	3.4
		Pentachlorophenol	87–86–5	0.061	3.4

		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.28	28
		TCDFs (All Tetracholorodibenzofurans).	NA	0.059	3.4
		2,4,5-Trichlorophenol	95–95–4	0.057	28
		2,4,6-Trichlorophenol	88–06–2	0.057	10
		2,3,4,6-Tetrachlorophenol	58–90–2	0.059	NA
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Wastes Nos. F020, F021, F023, F026, and F027.	HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.059	5.6
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.059	5.6
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.039	6.2
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.067	8.2
		Pentachlorophenol	87–86–5	0.080	10
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.32	30
		TCDFs (All Tetrachlorodibenzofurans).	NA	2.77	0.86 mg/l TCLP
		2,4,5-Trichlorophenol	95–95–4	1.2	590
		2,4,6-Trichlorophenol	88–06–2	0.69	NA
		2,3,4,6-Tetrachlorophenol	58–90–2	3.98	5.0 mg/l TCLP
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oil cooling waters, sludges generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.	Acenaphthene	83–32–9	0.059	NA
		Anthracene	120–12–7	0.059	3.4
		Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Chrysene	218–01–9	0.059	3.4
		Di-n-butyl phthalate	84–74–2	0.057	28
		Ethylbenzene	100–41–4	0.057	10
		Fluorene	86–73–7	0.059	NA
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air floatation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological units) and F037, K048, and K051 are not included in this listing.	Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Chrysene	218–01–9	0.059	3.4
		Di-n-butyl phthalate	84–74–2	0.057	28
		Ethylbenzene	100–41–4	0.057	10
		Fluorene	86–73–7	0.059	NA
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP

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.).	Acenaphthylene	208–96–8	0.059	3.4
		Acenaphthene	83–32–9	0.059	3.4
		Acetone	67–64–1	0.28	160
		Acetonitrile	75–05–8	5.6	38
		Acetophenone	96–86–2	0.010	9.7
		2-Acetylaminofluorene	53–96–3	0.059	140
		Acrolein	107–02–8	0.29	NA
		Acrylonitrile	107–13–1	0.24	84
		Aldrin	309–00–2	0.021	0.066
		4-Aminobiphenyl	92–67–1	0.13	NA
		Aniline	62–53–3	0.81	14
		Anthracene	120–12–7	0.059	3.4
		Aramite	140–57–8	0.36	NA
		alpha-BHC	319–84–6	0.00014	0.066
		beta-BHC	319–85–7	0.00014	0.066
		delta-BHC	319–86–8	0.023	0.066
		gamma-BHC	58–89–9	0.0017	0.066
		Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene.	205–99–2	0.11	6.8
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene.	207–08–9	0.11	6.8
		Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Bromodichloromethane	75–27–4	0.35	15
		Methyl bromide (Bromomethane)	74–83–9	0.11	15
		4-Bromophenyl phenyl ether	101–55–3	0.055	15
		n-Butyl alcohol	71–36–3	5.6	2.6
		Butyl benzyl phthalate	85–68–7	0.017	28
		2-sec-Butyl-4,6-dinitrophenol (Dinoseb).	88–85–7	0.066	2.5
		Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP
		Carbon tetrachloride	56–23–5	0.057	6.0
		Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26
		p-Chloroaniline	106–47–8	0.46	16
		Chlorobenzene	108–90–7	0.057	6.0
		Chlorobenzilate	510–15–6	0.10	NA
		2-Chloro-1,3-butadiene	126–99–8	0.057	0.28
		Chlorodibromomethane	124–48–1	0.057	15
		Chloroethane	75–00–3	0.27	6.0
		bis(2-Chloroethoxy)methane	111–91–1	0.036	7.2
		bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
		Chloroform	67–66–3	0.046	6.0
		bis(2-Chloroisopropyl)ether	39638–32–9	0.055	7.2
		p-Chloro-m-cresol	59–50–7	0.018	14
		Chloromethane (Methyl chlorida)	74–87–3	0.19	30
		2-Chloronaphthalene	91–58–7	0.055	5.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
		2-Chlorophenol	95–57–8	0.044	5.7
		3-Chloropropylene	107–05–1	0.036	30
		Chrysene	218–01–9	0.059	3.4
		o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		Cyclohexanone	108–94–1	0.36	0.75 mg/l TCLP
		1,2-Dibromo-e-chloropropane	96–12–8	0.11	15
		Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
		Dibromomethane	74–95–3	0.11	15
		2,4-D (2,4-Dichlorophenoxyacetic acid).	94–75–7	0.72	10
		o,p′-DDD	53–19–0	0.023	0.87
		p,p′-DDD	72–54–8	0.023	0.087
		o,p′-DDE	3424–82–6	0.031	0.087
		p,p′-DDE	72–55–9	0.031	0.087
		o,p′-DDT	789–02–6	0.0039	0.087
		p,p′-DDT	50–29–3	0.0039	0.087
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Dibenz(a,e)pyrene	192–65–4	0.061	NA
		m-Dichlorobenzene	541–73–1	0.036	6.0
		o-Dichlorobenzene	95–50–1	0.088	6.0
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Dichlorodifluoromethane	75–71–8	0.23	7.2
		1,1-Dichloroethane	75–34–3	0.059	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,1-Dichloroethylene	75–35–4	0.025	6.0
		trans-1,2-Dichloroethylene	156–60–5	0.054	30
		2,4-Dichlorophenol	120–83–2	0.044	14
		2,6-Dichlorophenol	87–65–0	0.044	14
		1,2-Dichloropropane	78–87–5	0.85	18
		cis-1,3-Dichloropropylene	10061–01–5	0.036	18
		trans-1,3-Dichloropropylene	10061–02–6	0.036	18
		Dieldrin	60–57–1	0.017	0.13
		Diethyl phthalate	84–66–2	0.20	28
		2-4-Dimethyl phenol	105–67–9	0.036	14
		Dimethyl phthalate	131–11–3	0.047	28
		Di-n-butyl phthalate	84–74–2	0.057	28
		1,4-Dinitrobenzene	100–25–4	0.32	2.3
		4,6-Dinitro-o-cresol	534–52–1	0.28	160
		2,4-Dinitrophenol	51–28–5	0.12	160
		2,4-Dinitrotoluene	121–14–2	0.32	140
		2,6-Dinitrotoluene	606–20–2	0.55	28
		Di-n-octyl phthalate	117–84–0	0.017	28
		Di-n-propylnitrosamine	621–64–7	0.40	14

1,4-Dioxane	123–91–1	0.22	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine).	122–39–4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine).	86–30–6	0.92	13
1,2-Diphenylhydrazine	122–66–7	0.087	1.5
Disulfoton	298–04–4	0.017	6.2
Endosulfan I	939–98–8	0.023	0.066
Endosulfan II	33213–6–5	0.029	0.13
Endosulfan sulfate	1–31–07–8	0.029	0.13
Endrin	72–20–8	0.0028	0.13
Endrin aldehyde	7421–93–4	0.025	0.13
Ethyl acetate	141–78–6	0.34	33
Ethyl cyanide (Propanenitrile)	107–12–0	0.24	360
Ethyl benzene	100–41–4	0.057	10
Ethyl ether	60–29–7	0.12	160
bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
Ethyl methacrylate	97–63–2	0.14	160
Ethylene oxide	75–21–8	0.12	NA
Famphur	52–85–7	0.017	15
Fluoranthene	206–44–0	0.068	3.4
Fluorene	86–73–7	0.059	3.4
Heptachlor	76–44–8	0.0012	0.066
Heptachlor epoxide	1024–57–3	0.016	0.066
Hexachlorobenzene	118–74–1	0.055	10
Hexachlorobutadiene	87–68–3	0.055	5.6
Hexachlorocyclopentadiene	77–47–4	0.057	2.4
HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans).	NA	0.000063	0.001
Hexachloroethane	67–72–1	0.055	30
Hexachloropropylene	1888–71–7	0.035	30
Indeno (1,2,3-c,d) pyrene	193–39–5	0.0055	3.4
Iodomethane	74–88–4	0.19	65
Isobutyl alcohol	78–83–1	5.6	170
Isodrin	465–73–6	0.021	0.066
Isosafrole	120–58–1	0.081	2.6
Kepone	143–50–8	0.0011	0.13
Methacrylonitrile	126–98–7	0.24	84
Methanol	67–56–1	5.6	0.75 mg/l TCLP
Methapyrilene	91–80–5	0.081	1.5
Methoxychlor	72–43–5	0.25	0.18
3-Methylcholanthrene	56–49–5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101–14–4	0.50	30
Methylene chloride	75–09–2	0.089	30
Methyl ethyl ketone	78–93–3	0.28	36
Methyl isobutyl ketone	108–10–1	0.14	33
Methyl methacrylate	80–62–6	0.14	160
Methyl methansulfonate	66–27–3	0.018	NA
Methyl parathion	298–00–0	0.014	4.6
Naphthalene	91–20–3	0.059	5.6
2-Naphthylamine	91–59–8	0.52	NA
p-Nitroaniline	100–01–6	0.028	28
Nitrobenzene	98–95–3	0.068	14
5-Nitro-o-toluidine	99–55–8	0.32	28
p-Nitrophenol	100–02–7	0.12	29
N-Nitrosodiethylamine	55–18–5	0.40	28
N–Nitrosodimethylamine	62–75–9	0.40	2.3

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
		N-Nitroso-di-n-butylamine	924–16–3	0.40	17
		N-Nitrosomethylethylamine	10595–95–6	0.40	2.3
		N-Nitrosomorpholine	59–89–2	0.40	2.3
		N-Nitrosopiperidine	100–75–4	0.013	35
		N-Nitrosophyrrolidine	930–55–2	0.013	35
		Parathion	56–38–2	0.014	4.6
		Total PCBs (sum of all PCB isomer, or all Aroclors).	1336–36–3	0.10	10
		Pentachlorobenzene	608–93–5	0.055	10
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.000035	0.001
		Pentachloronitrobenzene	82–68–8	0.055	4.8
		Pentachlorophenol	87–86–5	0.089	7.4
		Phenacetin	62–44–2	0.081	16
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Phorate	298–02–2	0.021	4.6
		Phthalic anhydride	85–44–9	0.055	28
		Pronamide	23950–58–5	0.093	1.5
		Pyrene	129–00–0	0.067	8.2
		Pyridine	110–86–1	0.014	16
		Safrole	94–59–7	0.081	22
		Silvex (2,4,5-TP)	93–72–1	0.72	7.9
		2,4,5-T	93–76–5	0.72	7.9
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans).	NA	0.000063	0.001
		1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
		1,1,1,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
		Toluene	108–88–3	0.080	10
		Toxaphene	8001–35–2	0.0095	2.6
		Bromoform (Tribromomethane)	75–25–2	0.63	15
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
		Trichloromonofluoromethane	75–69–4	0.020	30
		2,4,5-Trichlorophenol	95–95–4	0.18	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
		1,2,3-Trichloropropane	96–18–4	0.85	30
		1,1,2-Trichloro-1,2,2-trifluoroethane.	76–13–1	0.057	30

		tris(2,3-Dibromopropyl) phosphate	126–72–7	0.11	0.10
		Vinyl chloride	75–01–4	0.27	6.0
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Antimony	7440–36–0	1.9	2.1 mg/l TCLP
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Barium	7440–39–3	1.2	7.6 mg/l TCLP
		Beryllium	7440–41–7	0.82	0.014 mg/l TCLP
		Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
		Fluoride	16964–48–8	35	48
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Mercury	7439–97–6	0.15	0.025 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	0.82	0.16 mg/l TCLP
		Silver	7440–22–4	0.43	0.30 mg/l TCLP
		Sulfide	8496–25–8	14	NA
		Thallium	7440–28–0	1.4	0.078 mg/l TCLP
		Vanadium	7440–62–2	4.3	0.23
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol..	Naphthalene	91–20–3	0.059	5.6
		Pentachlorophenol	87–86–5	0.089	7.4
		Phenanthrene	85–01–8	0.059	5.6
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K005	Wastewater treatment sludge from the production of chrome green pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	NA
	Wastewater treatment sludge from the production of chrome oxide green pigments (hydrated).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K007	Wastewater treatment sludge from the production of iron blue pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
K008	Oven residue from the production of chrome oxide green.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l
		Lead	7439–92–1	0.69	0.37 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent: Common name	Regulated hazardous constituent: CAS[2] No.	Wastewaters: Concentration in mg/l[3]; or technology code[4]	Nonwastewaters: Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	Chloroform	67–66–3	0.046	6.0
K010	Distillation side cuts from the procduction of acetaldehyde from ethylene.	Chloroform	67–66–3	0.046	6.0
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	Acetonitrile	75–05–8	5.6	38
		Acrylonitrile	107–13–1	0.24	84
		Acrylamide	79–06–1	19	23
		Benzene	71–43–2	0.14	10
		Cyanide (Total)	57–12–5	1.2	590
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile..	Acetonitrile	75–05–8	5.6	38
		Acrylonitrile	107–13–1	0.24	84
		Acrylamide	79–06–1	19	23
		Benzene	71–43–2	0.14	10
		Cyanide (Total)	57–12–5	1.2	590
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	Acetonitrile	75–05–8	5.6	38
		Acrylonitrile	107–13–1	0.24	84
		Acrylamide	79–06–1	19	23
		Benzene	71–43–2	0.14	10
		Cyanide (Total)	57–12–5	1.2	590
K015	Still bottoms from the distillation of benzyle chloride..	Anthracene	120–12–7	0.059	3.4
		Benzal chloride	98–87–3	0.055	6.0
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene.	205–99–2	0.11	6.8
		Benzo(k)fluroanthene (difficult to distinguish from benzo(b) fluoranthene.	207–08–9	0.11	6.8
		Phenanthrene	85–01–8	0.059	5.6
		Toluene	108–88–3	0.080	10
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	Hexachlorobenzene	118–74–1	0.055	10
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachlorocyclopentadiene	77–47–4	0.057	2.4
		Hexachloroethane	67–72–1	0.055	30
		Tetrachloroethylene	127–18–4	0.056	6.0
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
		1,2-Dichloropropane	78–87–5	0.85	18
		1,2,3-Trichloropropane	96–18–4	0.85	30
K018	Heavy ends from the fractionation column in ethyl chloride production.	Chloroethane	75–00–3	0.27	6.0
		Chloromethane	74–87–3	0.19	NA

		1,1-Dichloroethane	75–34–3	0.059	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachloroethane	67–72–1	0.055	30
		Pentachloroethane	76–01–7	NA	6.0
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production..	bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
		Chlorobenzene	108–90–7	0.057	6.0
		Chloroform	68–66–3	0.046	6.0
		p-Dichlorobenzene	106–46–7	0.090	NA
		1,2-Dichloroethane	107–06–2	0.21	6.0
		Fluorene	86–73–7	0.059	NA
		Hexachloroethane	67–72–1	0.055	30
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	NA
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	1,2-Dichloroethane	107–06–2	0.21	6.0
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Antimony	7440–36–0	1.9	2.1 mg/l TCLP
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	Toluene	108–88–3	0.080	10
		Acetophenone	96–86–2	0.010	9.7
		Diphenylamine (difficult to distinguish from diphenylnitrosamine).	122–39–4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine).	86–30–6	0.92	13
		Phenol	108–95–2	0.039	6.2
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	85–44–9	0.055	28
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	85–44–9	0.055	28
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	NA	NA	LLEXT fb SSTRP fb CARBN; or CMBST	CMBST
K026	Stripping still tails from the production of methyl ethyl pyridines.	NA	NA	CMBST	CMBST
K027	Centrifuge and distillation residues from toluene diisocyanate production.	NA	NA	CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	1,1-Dichloroethane	75–34–3	0.059	6.0
		trans-1,2-Dichloroethylene	156–60–5	0.054	30
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachloroethane	67–72–1	0.055	30
		Pentachloroethane	76–01–7	NA	6.0
		1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Cadmium	7440–43–9	0.69	NA
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	Chloroform	67–66–3	0.046	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,1-Dichloroethylene	75–35–4	0.025	6.0
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
		Vinyl chloride	75–01–4	0.27	6.0
K030	Column bodies or heavy ends from the combined production of trichloroethylene and perchloroethylene.	o-Dichlorobenzene	95–50–1	0.088	NA
		p-Dichlorobenzene	106–46–7	0.090	NA
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachloroethane	67–72–1	0.055	30
		Hexachloropropylene	1888–71–7	NA	30
		Pentachlorobenzene	608–93–5	NA	10
		Pentachloroethane	76–01–7	NA	6.0
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
K031	By-product salts generated in the production of MSMA and cacodylic acid.	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
K032	Wastewater treatment sludge from the production of chlordane.	Hexachlorocyclopentadiene	77–47–4	0.057	2.4
		Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26
		Heptachlor	76–44–8	0.0012	0.066
		Heptachlor epoxide	1024–57–3	0.016	0.066
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	Hexachlorocyclopentadiene	77–47–4	0.057	2.4
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	Hexachlorocylopentadiene	77–47–4	0.057	2.4

K035	Wastewater treatment sludges generated in the production of creosote.	Acenaphthene	83–32–9	NA	3.4
		Anthracene	120–12–7	NA	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
		o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		Dibenz(a,h)anthracene	53–70–3	NA	8.2
		Fluoranthene	206–44–0	0.068	3.4
		Fluorene	86–73–7	NA	3.4
		Indeno(1,2,3-cd)pyrene	193–39–5	NA	3.4
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	Disulfoton	298–04–4	0.017	6.2
K037	Wastewater treatment sludges from the production of disulfoton.	Disulfoton	298–04–4	0.017	6.2
		Toluene	108–88–3	0.080	10
K038	Wastewater from the washing and stripping of phorate production.	Phorate	298–02–2	0.021	4.6
K039	Filter cake from the filtration of diethylphosphorodithioc acid in the production of phorate.	NA	NA	CARBN, or CMBST	CMBST
K040	Wastewater treatment sludge from the production of phorate.	Phorate	298–02–2	0.021	4.6
K041	Wastewater treatment sludge from the production of toxaphene.	Toxaphene	8001–35–2	0.0095	2.6
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	o-Dichlorobenzene	95–50–1	0.088	6.0
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	2,4-Dichlorophenol	120–83–2	0.044	14
		2,6-Dichlorophenol	187–65–0	0.044	14
		2,4,5-Trichlorophenol	95–95–4	0.18	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
		Pentachlorophenol	87–86–5	0.089	7.4
		Tetrachloroethylene	127–18–4	0.056	6.0
		HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent: Common name	Regulated hazardous constituent: CAS[2] No.	Wastewaters: Concentration in mg/l[3]; or technology code[4]	Nonwastewaters: Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
		TCDFs (All Tetrachlorodibenzofurans).	NA	0.000063	0.001
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	NA	NA	DEACT	DEACT
K045	Spent carbon from the treatment of wastewater containing explosives.	NA	NA	DEACT	DEACT
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	Lead	7439–92–1	0.69	0.37 mg/l TCLP
K047	Pink/red water from TNT operations	NA	NA	DEACT	DEACT
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Chrysene	218–01–9	0.059	3.4
		Di-n-butyl phthalate	84–74–2	0.057	28
		Ethylbenzene	100–41–4	0.057	10
		Fluorene	86–73–7	0.059	NA
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–33	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K049	Slop oil emulsion solids from the petroleum refining industry.	Anthracene	120–12–7	0.059	3.4
		Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Carbon disulfide	75–15–0	3.8	NA
		Chrysene	2218–01–9	0.059	3.4
		2,4-Dimethylphenol	105–67–9	0.036	NA
		Ethylbenzene	100–41–4	0.057	10
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30

		Cyanides (Total)[7]	57–12–5	1.2	590
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Benzo(a)pyrene	50–32–8	0.061	3.4
		Phenol	108–95–2	0.039	6.2
		Cyanides (Total)[7]	57–12–5	1.2	590
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K051	API separator sludge from the petroleum refining industry.	Acenaphthene	83–32–9	0.059	NA
		Anthracene	120–12–7	0.059	3.4
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Chrysene	2218–01–9	0.059	3.4
		Di-n-butyl phthalate	105–67–9	0.057	28
		Ethylbenzene	100–41–4	0.057	10
		Fluorene	86–73–7	0.059	NA
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Cyanides (Total)[7]	57–12–5	1.2	590
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K052	Tank bottoms (leaded) from the petroleum refining industry.	Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		2,4-Dimethylphenol	105–67–9	0.036	NA
		Ethylbenzene	100–41–4	0.057	10
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Toluene	108–88–3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K060	Ammonia still lime sludge from coking operations	Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Naphthalene	91–20–3	0.059	5.6
		Phenol	108–95–2	0.039	6.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
		Cyanides (Total)[7]	57–12–5	1.2	590
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	Antimony	7440–36–0	NA	2.1 mg/l TCLP
		Arsenic	7440–38–2	NA	5.0 mg/l TCLP
		Barium	7440–39–3	NA	7.6 mg/l TCLP
		Beryllium	7440–41–7	NA	0.014 mg/l TCLP
		Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Mercury	7439–97–6	NA	0.025 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	NA	0.16 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
		Thallium	7440–28–0	NA	0.078 mg/l TCLP
		Zinc	7440–66–6	NA	5.3 mg/l TCLP
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K069	Emission control dust/sludge from secondary lead smelling.—Calcium Sulfate (Low Lead) Subcategory.	Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
	Emission control dust/sludge from secondary lead smelling—Non-Calcium Sulfate (High Lead) Subcategory.	NA	NA	NA	RLEAD
K071	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used) nonwastewaters that are residues from RMERC.	Mercury	7439–97–6	NA	0.02 mg/l TCLP
	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used) nonwastewaters that are not residues from RMERC.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All K071 wastewaters	Mercury	7439–97–6	0.15	NA
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Hexachloroethane	67–72–1	0.055	30
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
K083	Distillation bottoms from aniline production	Aniline	62–53–3	0.81	14
		Benzene	71–43–2	0.14	10
		Cyclohexanone	108–94–1	0.36	NA

		Diphenylamine (difficult to distinguish from diphenylnitrosamine).	122–39–4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine).	86–30–6	0.92	13
		Nitrobenzene	98–95–3	0.068	14
		Phenol	108–95–2	0.039	6.2
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	Benzene	71–43–2	0.14	10
		Chlorobenzene	108–90–7	0.057	6.0
		m-Dichlorobenzene	541–73–1	0.036	6.0
		o-Dichlorobenzene	95–50–1	0.088	6.0
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Total PCBs (sum of all PCB isomers, or all Aroclors).	1336–36–3	0.10	10
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
K086	Solvent wastes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	Acetone	67–64–1	0.28	160
		Acetophenone	96–86–2	0.010	9.7
		bis(2-Ethylhexyl phthalate	117–81–7	0.28	28
		n-Butyl alcohol	71–36–3	5.6	2.6
		Butylbenzyl phthalate	85–68–7	0.017	28
		Cyclohexanone	108–94–1	0.36	NA
		o-Dichlorobenzene	95–50–1	0.088	6.0
		Diethyl phthalate	84–66–2	0.20	28
		Dimethyl phthalate	131–11–3	0.047	28
		Di-n-butyl phthalate	84–74–2	0.057	28
		Di-n-octyl phthalate	117–84–0	0.017	28
		Ethyl acetate	141–78–6	0.34	33
		Ethylbenzene	100–41–4	0.057	10
		Menthanol	67–56–1	5.6	NA
		Methyl ethyl ketone	78–93–3	0.28	36
		Methyl isobutyl ketone	108–10–1	0.14	33
		Methylene chloride	75–09–2	0.089	30
		Naphthalene	91–20–3	0.059	5.6
		Nitrobenzene	98–95–3	0.068	14
		Toluene	108–88–3	0.080	10
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
		Xylenes-mixed isomers (sum of o-,m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K087	Decanter tank tar sludge from coking operations	Acenaphthylene	208–96–8	0.059	3.4
		Benzene	71–43–2	0.14	10
		Chrysene	218–01–9	0.059	3.4
		Fluoranthene	206–44–0	0.068	3.4
		Indeno(1,2,3-cd)pyrene	193–39–5	0.0055	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K088	Spent potliners from primary aluminum reduction	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
		Benzo(b)fluoranthene	205–99–2	0.11	6.8
		Benzo(k)fluoranthene	207–08–9	0.11	6.8
		Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Fluoranthene	206–44–0	0.068	3.4
		Indeno(1,2,3-c,d)pyrene	193–39–5	0.0055	3.4
		Phenanthrene	85–01–8	0.059	5.6
		Pyrene	129–00–0	0.067	8.2
		Antimony	7440–36–0	1.9	2.1 mg/l TCLP
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Barium	7440–39–3	1.2	7.6 mg/l TCLP
		Beryllium	7440–41–7	0.82	0.014 mg/l TCLP
		Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Mercury	7439–97–6	0.15	0.025 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	0.82	0.16 mg/l TCLP
		Silver	7440–22–4	0.43	0.30 mg/l TCLP
		Cyanide (Total)	57–12–5	1.2	590
		Cyanide (Amenable)	57–12–5	0.86	30
		Fluoride	16984–48–8	35	48 mg/l TCLP
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	85–44–9	0.055	28
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	85–44–9	0.055	28

K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	Hexachloroethane	67–72–1	0.055	30
		Pentachloroethane	76–01–7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	m-Dichlorobenzene	541–73–1	0.036	6.0
		Pentachloroethane	76–01–7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26
		Heptachlor	76–44–8	0.0012	0.066
		Heptachlor epoxide	1024–57–3	0.016	0.066
		Hexachlorocyclopentadiene	77–47–4	0.057	2.4
K098	Untreated process wastewater from the production of toxaphene.	Toxaphene	8001–35–2	0.0095	2.6
K099	Untreated wastewater from the production of 2,4-D	2,4-Dichlorophenoxyacetic acid	94–75–7	0.72	10
		HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans).	NA	0.000063	0.001
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitroaniline	88–74–4	0.27	14
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Cadmium	7440–43–9	0.69	NA
		Lead	7439–92–1	0.69	NA
		Mercury	7439–97–6	0.15	NA
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitrophenol	88–75–5	0.028	13
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Cadmium	7440–43–9	0.69	NA
		Lead	7439–92–1	0.69	NA
		Mercury	7439–97–6	0.15	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
K103	Process residues from aniline extraction from the production of aniline.	Aniline	62–53–3	0.81	14
		Benzene	71–43–2	0.14	10
		2,4-Dinitrophenol	51–28–5	0.12	160
		Nitrobenzene	98–95–3	0.068	14
		Phenol	108–95–2	0.039	6.2
K104	Combined wastewater streams generated from nitrobenzene/aniline production.	Aniline	62–53–3	0.81	14
		Benzene	71–43–2	0.14	10
		2,4-Dinitrophenol	51–28–5	0.12	160
		Nitrobenzene	98–95–3	0.068	14
		Phenol	108–95–2	0.039	6.2
		Cyanides (Total)[7]	57–12–5	1.2	590
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	Benzene	71–43–2	0.14	10
		Chlorobenzene	108–90–7	0.057	6.0
		2-Chlorophenol	95–57–8	0.044	5.7
		o-Dichlorobenzene	95–50–1	0.088	6.0
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Phenol	108–95–2	0.039	6.2
		2,4,5-Trichlorophenol	95–95–4	0.18	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
K106	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439–97–6	NA	RMERC
	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain less than 260 mg/kg total mercury that are residues from RMERC.	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	Other K106 nonwastewaters that contain less than 260 mg/kg total mercury and are not residues from RMERC.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All K106 wastewaters	Mercury	7439–97–6	0.15	NA
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K109	Spent filter cartridges from product purification from the production of 1,1-dimethyhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST

K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethyhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene.	2,4-Dinitrotoluene	121–1–2	0.32	140
		2,6-Dinitrotoluene	606–20–2	0.55	28
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; or CMBST	CMBST
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; or CMBST	CMBST
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		NA	NA	CARBN; or CMBST	CMBST
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	NA	NA	CARBN; or CMBST	CMBST
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74–83–9	0.11	15
		Chloroform	67–66–3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
K118	Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74–83–9	0.11	15
		Chloroform	67–66–3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	Methyl bromide (Bromomethane)	74–83–9	0.11	15

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	Methyl bromide (Bromomethane)	74–83–9	0.11	15
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74–83–9	0.11	15
		Chloroform	67–66–3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
K140	Waste solids and filter cartridges from the production of 2,4,6-tribromophenol.	2,4,6-Tribromophenol	118–79–6	0.035	7.4
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).	Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–2–8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Indeno(1,2,3–cd)pyrene	193–39–5	0.0055	3.4
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	Benzene	71–43–2	0.14	10
		Benz(a)anthracene	50–32–8	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Indeno(1,2,3–cd)pyrene	193–39–5	0.0055	3.4
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4

		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k) fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Benzene	71–43–2	0.14	10
		Chrysene	218–01–9	0.059	3.4
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.	Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Benzene	71–43–2	0.14	10
		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
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Naphthalene	91–20–3	0.059	5.6
K147	Tar storage tank residues from coal tar refining	Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193–39–5	0.0055	3.4
K148	Residues from coal tar distillation, including, but not limited to, still bottoms.	Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193–39–5	0.0055	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent: Common name	CAS[2] No.	Wastewaters: Concentration in mg/l[3]; or technology code[4]	Nonwastewaters: Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillations of benzyl chloride.).	Chlorobenzene	108–90–7	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Chloromethane	74–87–3	0.19	30
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		Toluene	108–88–3	0.080	10
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Chloromethane	74–87–3	0.19	30
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		1,1,2,2-Tetrachlorotehane	79–34–5	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Benzene	71–43–2	0.14	10
		Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		Tetrachloroethylene	127–18–4	0.056	6.0
		Toluene	108–88–3	0.080	10
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.	Acetone	67–64–1	0.28	160
		Acetonitrile	75–05–8	5.6	1.8
		Acetophenone	96–86–2	0.010	9.7
		Aniline	62–53–3	0.81	14
		Benomyl	17804–35–2	0.056	1.4
		Benzene	71–43–2	0.14	10
		Carbaryl	63–25–21	0.006	0.14
		Carbenzadim	10605–21–7	0.056	1.4
		Carbofuran	1563–66–2	0.006	0.14
		Carbosulfan	55285–14–8	0.028	1.4
		Chlorobenzene	108–90–7	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		o-Dichlorobenzene	95–50–1	0.088	6.0
		Hexane	110–54–3	0.611	10
		Methomyl	16752–77–5	0.028	0.14
		Methylene chloride	75–09–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Methyl isobutyl ketone	108–10–1	0.14	33
		Naphthalene	91–20–3	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyridine	110–86–1	0.014	16

		Toluene	108–88–3	0.080	10
		Triethylamine	121–44–8	0.081	1.5
		Xylenes (total)	1330–20–7	0.32	30
K157..	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.	Acetone	67–64–1	0.28	160
		Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Chloromethane	74–87–3	0.19	30
		Methanol	67–56–1	5.6	0.75 mg/l TCLP
		Methomyl	16752–77–5	0.028	0.14
		Methylene chloride	75–09–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Methyl isobutyl ketone	108–10–1	0.14	33
		o-Phenylenediamine	95–54–5	0.056	5.6
		Pyridine	110–86–1	0.014	16
		Triethylamine	121–44–8	0.081	1.5
K158..	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes.	Benomyl	17804–35–2	0.056	1.4
		Benzene	71–43–2	0.14	10
		Carbenzadim	10605–21–7	0.056	1.4
		Carbofuran	1563–66–2	0.006	0.14
		Carbosulfan	55285–14–8	0.028	1.4
		Chloroform	67–66–3	0.046	6.0
		Hexane	110–54–3	0.611	10
		Methanol	67–56–1	5.6	0.75 mg/l TCLP
		Methylene chloride	75–09–2	0.089	30
		Phenol	108–95–2	0.039	6.2
		Xylenes (total)	1330–20–7	0.32	30
K159..	Organics from the treatment of thiocarbamate wastes.	Benzene	71–43–2	0.14	10
		Butylate	2008–41–5	0.003	1.5
		EPTC (Eptam)	759–94–4	0.003	1.4
		Molinate	2212–67–1	0.003	1.4
		Pebulate	1114–71–2	0.003	1.4
		Thiocarbamate, N.O.S.	NA	0.003	1.4
		Vernolate	1929–77–7	0.003	1.4
K160..	Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes.	Butylate	2008–41–5	0.003	1.5
		EPTC (Eptam)	759–94–4	0.003	1.4
		Molinate	2212–67–1	0.003	1.4
		Pebulate	1114–71–2	0.003	1.4
		Thiocarbamate, N.O.S.	NA	0.003	1.4
		Toluene	108–88–3	0.080	10
		Vernolate	1929–77–7	0.003	1.4
		Xylenes (total)	1330–20–7	0.32	30
K161..	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts.	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
		Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP
		Dithiocarbamates, total	NA	0.028	28
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	0.82	016 mg/l TCLP
		Xylenes (total)	1330–20–7	0.32	30
P001	Warfarin, & salts, when present at concentrations greater than 0.3%.	Warfarin	81–81–2	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
P002	1-Acetyl-2-thiourea	1-Acetyl-2-thiourea	591–08–2	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P003	Acrolein	Acrolein	107–02–8	0.29	CMBST
P004	Aldrin	Aldrin	309–00–2	0.021	0.066
P005	Allyl alcohol	Allyl alcohol	107–18–6	(WETOX or CHOXD) fb CARBN. or CBMST	CMBST
P006	Aluminum phosphide	Aluminum phosphide	20859–73–8	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P007	5-Aminomethyl e-isoxazoloe	5-Aminomethyl e-isoxazoloe	2763–96–4	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P008	4-Aminopyridine	4-Aminopyridine	504–24–5	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P009	Ammonium picrate	Ammonium picrate	131–74–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P010	Arsenic acid	Arsenic	7440–38–2	1.4	50 mg/l TCLP
P011	Arsenic pentoxide	Arsenic	7440–38–2	1.4	50 mg/l TCLP
P012	Arsenic trioxide	Arsenic	7440–38–2	1.4	50 mg/l TCLP
P013	Barium cyanide	Barium	7440–39–3	NA	7.6 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P014	Thiophenol (Benzene thiol)	Thiophenol (Benzene thiol)	108–98–5	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P015	Beryllium dust	Beryllium	7440–41–7	RMETL, or RTHRM	RMETL; or RTHRM
P016	Dichloromethyl ether (Bis(chloromethyl)ether)	Dichloromethyl ether	542–88–1	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P017	Bromoacetone	Bromoacetone	598–31–2	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P018	Brucine	Brucine	357–57–3	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST

P020	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	2-sec-Butyl-4,6-dinitrophenol (Dinoseb).	88–85–7	0.066	2.5
P021	Calcium cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P022	Carbon disulfide	Carbon disulfide	75–15–0	3.8	CMBST
		Carbon disulfide; alternate[6] standard for nonwastewaters only.	75–15–0	NA	4.8 mg/l TCLP
P023	Choloracetaldehyde	Choloracetaldehyde	107–20–0	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P024	p-Chloroaniline	p-Chloroaniline	106–47–8	0.46	16
P026	1-(o-Cholorphenyl)thiourea	1-(o-Cholorphenyl)thiourea	5344–82–1	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P027	3-Chloropropionitrile	3-Chloropropionitrile	542–76–7	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P028	Benzyl chloride	Benzyl chloride	100–44–7	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P029	Copper cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P030	Cyanides (soluble salts and complexes)	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P031	Cyanogen	Cyanogen	460–19–5	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P033	Cyanogen chloride	Cyanogen chloride	506–77–4	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P034	2-Cyclohexly-4,6-dinitrophenol	2-Cyclohexly-4,6-dinitrophenol	131–89–5	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P036	Dichlorophenylarsine	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
P037	Dieldrin	Dieldrin	60–57–1	0.017	0.13
P038	Diethylarsine	Arsenic	7440–38–2	1.4	50 mg/l TCLP
P039	Disulfoton	Disulfoton	298–04–4	0.017	6.2
P040	0,0-Diethyl O-pyrazinyl phosphorothioate	0,0-Diethyl O-pyrazinyl phosphorothioate.	297–97–2	CARBN; or CMBST	CMBST
P041	Diethyl-p-nitrophenyl phosphate	Diethyl-p-nitrophenyl phosphate	311–45–5	CARBN; or CMBST	CMBST
P042	Epinephrine	Epinephrine	51–43–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P043	Diisopropylfluorophosphate (DFP)	Diisopropylfluorophosphate (DFP)	55–91–4	CARBN; or CMBST	CMBST
P044	Dimethoate	Dimethoate	60–51–5	CARBN; or CMBST	CMBST
P045	Thiofanox	Thiofanox	39196–18–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent: Common name	Regulated hazardous constituent: CAS[2] No.	Wastewaters: Concentration in mg/l[3]; or technology code[4]	Nonwastewaters: Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
P046	alpha, alpha-Dimethylphenethylamine	alpha, alpha-Dimethylphenethylamine.	122–09–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P047	4,6-Dinitro-o-cresol	4,6-Dinitro-o-cresol	543–52–1	0.28	160
	4,6-Dinitro-o-cresol salts	NA	NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P048	2,4-Dinitrophenol	2,4-Dinitrophenol	51–28–5	0.12	160
P049	Dithiobiuret	Dithiobiuret	541–53–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P050	Endosulfan	Endosulfan I	939–98–8	0.023	0.066
		Endosulfan II	33213–6–5	0.029	0.13
		Endosulfan sulfate	1031–07–8	0.029	0.13
P051	Endrin	Endrin	72–20–8	0.0028	0.13
		Endrin aldehyde	7421–93–4	0.025	0.13
P054	Aziridine	Aziridine	151–56–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P056	Fluorine	Fluorine (measured in wastewaters only).	16964–48–8	35	ADGAS fb NEUTR
P057	Fluoroacetamide	Fluoroacetamide	640–19–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P058	Fluoroacetic acid, sodium salt	Fluoroacetic acid, sodium salt	62–74–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P059	Heptachlor	Heptachlor	76–44–8	0.0012	0.066
		Heptachlor epoxide	1024–57–3	0.016	0.066
P060	Isodrin	Isodrin	465–73–6	0.021	0.066
P062	Hexaethyl tetraphosphate	Hexaethyl tetraphosphate	757–58–4	CARBN; or CMBST	CMBST
P063	Hydrogen cyanide	Cyandies (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P064	Isocyanic acid, ethyl ester	Isocyanic acid, ethyl ester	624–83–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P065	Mercury fulminate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439–97–6	NA	IMERC

	Mercury fulminate nonwastewaters that are either incinerator residues or are residues from RMERC; and contain greater than or equal to 260 mg/kg total mercury.	Mercury	7339–97–6	NA	RMERC
	Mercury fulminate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	Mercury fulminate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All mercury fulminate wastewaters	Mercury	7439–97–6	0.15	NA
P066	Methomyl	Methomyl	16752–77–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P067	2-Methyl-aziridine	2-Methyl-aziridine	75–55–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P068	Methyl hydrazine	Methyl hydrazine	60–34–4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P069	2-Methyllactonitrile	2-Methyllactonitrile	75–86–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P070	Aldicarb	Aldicarb	116–06–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P071	Methyl parathion	Methyl parathion	298–00–0	0.014	4.6
P072	1-Naphthyl–2–thiourea	1-Naphthyl–2–thiourea	86–88–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P073	Nickel carbonyl	Nickel	7440–02–0	3.98	5.0 mg/l TCLP
P074	Nickel-cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Total)[7]	57–12–5	0.86	30
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
P075	Nicotine and salts	Nicotine and salts	54–11–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P076	Nitric oxide	Nitric oxide	10102–43–9	ADGAS	ADGAS
P077	p-Nitroaniline	p-Nitroaniline	100–01–6	0.028	28
P078	Nitrogen dioxide	Nitrogen dioxide	10102–44–0	ADGAS	ADGAS
P081	Nitroglycerin	Nitroglycerin	55–63–0	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P082	N-Nitrosodimethylamine	N-Nitrosodimethylamine	62–75–9	0.40	2.3
P084	N-Nitrosomethylvinylamine	N-Nitrosomethylvinylamine	4549–40–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P085	Octamethylpyrophosphoramide	Octamethylpyrophosphoramide	152–16–9	CARBN; OR CMBST	CMBST
P087	Osmium tectroxide	Osmium tectroxide	20816–12–0	RMETL; or RTHRM	RMETL; or RTHRM

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
P088	Endothall	Endothall	145–73–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P089	Parathion	Parathion	56–38–2	0.014	4.6
P092	Phenyl mercuric acetate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439–97–6	NA	IMERC; or RMERC
	Phenyl mercuric acetate nonwastewaters that are either incinerator residues or are residues from RMERC; and still contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439–97–6	NA	RMERC
	Phenyl mercuric acetate nonwastewaters that are residues from RMERC and contain less than 160 mg/kg total mercury.	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	Phenyl mercuric acetate nonwastewaters that are incinerator residues and contain less then 260 mg/kg total mercury.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All phenyl mercuric acetate wastewaters.	Mercury	7439–97–6	0.15	NA
P093	Phenythiouea	Phenythiouea	103–85–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P094	Phorate	Phorate	298–02–2	0.021	4.6
P095	Phosgene	Phosgene	75–44–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P096	Phosphine	Phosphine	7803–51–2	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P097	Famphur	Famphur	52–85–7	0.017	15
P098	Potassium cyanide.	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	.086	30
	Potasslum silver cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
P099		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Silver	7440–22–4	.043	0.30 mg/l TCLP
P0101	Ethyl cyanide (Propanenitrile)	Ethyl cyanide (Propanenitrile)	107–12–0	0.24	360
P0102	Propargyl alcohol	Propargyl alcohol	107–19–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P0103	Selenourea	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
P0104	Silver cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Silver	7440–22–4	0.43	0.30 mg/l TCLP

P0105	Sodium azide	Sodium azide	26628–22–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P0106	Sodium cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P0108	Strychnine and salts	Strychnine and salts	57–24–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P109	Tetraethyldithiopyrophosphate	Tetraethyldithiopyrophosphate	3689–24–5	CARBN; or CMBST	CMBST
P110	Tetraethyl lead	Lead	7439–92–1	0.69	0.37 mg/l TCLP
P111	Tetraethylpyrophosphate	Tetraethylpyrophosphate	107–49–3	CARBN; or CMBST	CMBST
P112	Tetranitromethane	Tetranitromethane	509–14–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P113	Thallic oxide	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
P114	Thallium selenite	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
P115	Thallium (I) sulfate	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
P116	Thiosemicarbazide	Thiosemicarbazide	79–19–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P118	Trichloromethanethiol	Trichloromethanethiol	75–70–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P119	Ammonium vanadate	Vanadium (measured in wastewaters only).	7440–62–2	4.3	STABL
P120	Vandium pentoxide	Vanadium (measured in wastewaters only).	7440–62–2	4.3	STABL
P121	Zinc cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P122	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%.	Zinc Phosphide	1314–84–7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P123	Toxaphene	Toxaphene	8001–35–2	0.0095	2.6
P127	Carbofuran	Carbofuran	1563–66–2	0.006	0.14
P128	Mexacarbate	Mexacarbate	315–18–4	0.056	1.4
P185	Tirpate	Tirpate	26419–73–8	0.056	0.28
P187	Bendiocarb	Bendiocarb	22781–23–3	0.056	1.4
P188	Physostigimine salicylate	Physostigmine salicylate	57–64–7	0.056	1.4
P189	Carbosulfan	Carbosulfan	55285–14–8	0.028	1.4
P190	Metolcarb	Metolcarb	1129–41–5	0.056	1.4
P191	Dimetilan	Dimetilan	644–64–4	0.056	1.4
P192	Isolan	Isolan	119–38–0	0.056	1.4
P193	Thiophanate-methyl	Thiophanate-methyl	23564–05–8	0.056	1.4
P194	Oxamyl	Oxamyl	23135–22–0	0.056	0.28
P195	Thiodicarb	Thiodicarb	59669–26–0	0.019	1.4
P196	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
P197	Formparanate	Formparanate	17702–57–7	0.056	1.4
P198	Formetanate hydrochloride	Formetanate hydrochloride	23422–53–9	0.056	1.4
P199	Methiocarb	Methiocarb	2032–65–7	0.056	1.4
P200	Propoxur	Propoxur	114–26–1	0.056	1.4
P201	Promecarb	Promecarb	2631–37–0	0.056	1.4
P202	Hercules AC–5727	Hercules AC–5727	64–00–6	0.056	1.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
P203	Aldicarb sulfone	Aldicarb sulfone	1646–88–4	0.056	0.28
P204	Physostigmine	Physostigmine	57–47–6	0.056	1.4
P205	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U001	Acetaldehyde	Acetaldehyde	75–07–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U002	Acetone	Acetone	67–64–1	0.28	160
U003	Acetonitrile	Acetonitrile	75–05–8	5.6	CMBST
		Acetonitrile; alternate[6] standard for nonwastewaters only.	75–05–8	NA	1.8
U004	Acetophenone	Acetophenone	98–86–2	0.010	9.7
U005	2-Acetylaminofluorene	2-Acetylaminofluorene	53–96–3	0.059	140
U006	Acetyl chloride	Acetyl Chloride	75–36–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U007	Acrylamide	Acrylamide	79–06–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U008	Acrylic acid	Acrylic acid	79–10–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U009	Acrylonitrile	Acrylonitrile	107–13–1	0.24	84
U010	Mitomycin C	Mitomycin C	50–07–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U011	Amitrole	Amitrole	61–82–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U012	Aniline	Aniline	62–53–3	0.81	14
U014	Auramine	Auramine	492–80–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U015	Azaserine	Azaserine	115–02–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U016	Benz(c)acridine	Benz(c)acridine	225–51–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U017	Benzal chloride	Benzal chloride	98–87–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U018	Benz(a)anthracene	Benz(a)anthracene	56–55–3	0.059	3.4
U019	Benzene	Benzene	71–43–2	0.14	10
U020	Benzenesulfonyl chloride	Benzenesulfonyl chloride	98–09–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U021	Benzidine	Benzidine	92–87–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U022	Benzo(a)pyrene	Benzo(a)pyrene	50–32–8	0.061	3.4
U023	Benzotrichloride	Benzotrichloride	98–07–7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U024	bis(2-Chloroethoxy)methane	bis(2-Chloroethoxy)methane	111–91–1	0.036	7.2
U025	bis(2-Chloroethyl)ether	bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
U026	Chlornaphazine	Chlornaphazine	494–03–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U027	bis(2-Chloroisopropyl)ether	bis(2-Chloroisopropyl)ether	39638–32–9	(WETOX or CHOXD) fb CARBN; or CMBST	7.2
U028	bis(2-Ethylhexyl) phthalate	bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
U029	Methyl bromide (Bromomethane)	Methyl bromide (Bromomethane)	74–83–9	0.11	15
U030	4-Bromophenyl phenyl ether	4-Bromophenyl phenyl ether	101–55–3	0.055	15
U031	n-Butyl alcohol	n-Butyl alcohol	71–36–3	5.6	2.6
U032	Calcium chromate	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
U033	Carbon oxyfluoride	Carbon oxyfluoride	353–50–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U034	Trichloroacetaldehyde (Chloral)	Trichloroacetaldehyde (Chloral)	75–87–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U035	Chlorambucil	Chlorambucil	305–03–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U036	Chlordane	Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26
U037	Chlorobenzene	Chlorobenzene	108–90–7	0.057	6.0
U038	Chlorobenzilate	Chlorobenzilate	510–15–6	0.10	CMBEST
U039	p-Chloro-m-cresol	p-Chloro-m-cresol	59–50–7	0.018	14
U041	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	Epichlorohydrin (1-Chloro-2,3-epoxypropane).	106–89–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U042	2-Chloroethyl vinyl ether	2-Chloroethyl vinyl ether	110–75–8	0.062	CMBST
U043	Vinyl chloride	Vinyl chloride	75–01–4	0.27	6.0
U044	Chloroform	Chloroform	67–66–3	0.046	6.0
U045	Chloromethane (Methyl chloride)	Chloromethane (Methyl chloride)	74–87–3	0.19	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
U046	Chloromethyl methyl ether	Chloromethyl methyl ether	107–30–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U047	2-Chloronaphthalene	2-Chloronaphthalene	91–58–7	0.055	5.6
U048	2-Chlorophenol	2-Chlorophenol	95–57–8	0.044	5.7
U049	4-Chloro-o-toluidine hydrochloride	4-Chloro-o-toluidine hydrochloride	3165–93–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U050	Chrysene	Chrysene	218–01–9	0.059	3.4
U051	Creosote	Naphthalene	91–20–3	0.059	5.6
		Pentachlorophenol	87–86–5	0.089	7.4
		Phenanthrene	85–01–8	0.059	5.6
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
U052	Cresols (Cresylic acid)	o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations).	1319–77–3	0.88	11.2
U053	Crotonaldehyde	Crotonaldehyde	4170–30–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U055	Cumene	Cumene	98–82–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U056	Cyclohexane	Cyclohexane	110–82–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U057	Cyclohexanone	Cyclohexanone	108–94–1	0.36	CMBST
		Cyclohexanone; alternate[6] standard for nonwastewaters only.	108–94–1	NA	0.75 mg/l TCLP
U058	Cyclophosphamide	Cyclophosphamide	50–18–0	CARBN; or CMBST	CMBST

U059	Daunomycin	Daunomycin	20830–81–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U060	DDD	o,p'-DDD	53–19–0	0.023	0.087
		p,p'-DDD	72–54–8	0.023	0.087
U061	DDT	o,p'-DDT	789–02–6	0.0039	0.087
		p,p'-DDT	50–29–3	0.0039	0.087
		o,p'-DDD	53–19–0	0.023	0.087
		p,p'-DDD	72–54–8	0.023	0.087
		o,p'-DDE	3424–82–6	0.031	0.087
		p,p'-DDE	72–55–9	0.031	0.087
U062	Diallate	Diallate	2303–16–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U063	Dibenz(a,h)anthracene	Dibenz(a,h)anthracene	53–70–3	0.055	8.2
U064	Dibenz(a,i)pyrene	Dibenz(a,i)pyrene	189–55–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U066	1,2-Dibromo-3-chloropropane	1,2-Dibromo-3-chloropropane	96–12–8	0.11	15
U067	Ethylene dibromide (1,2-Dibromoethane)	Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
U068	Dibromomethane	Dibromomethane	74–95–3	0.11	15
U069	Di-n-butyl phthalate	Di-n-butyl phthalate	84–74–2	0.057	28
U070	o-Dichlorobenzene	o-Dichlorobenzene	95–50–1	0.088	6.0
U071	m-Dichlorobenzene	m-Dichlorobenzene	541–73–1	0.036	6.0
U072	p-Dichlorobenzene	p-Dichlorobenzene	106–46–7	0.090	6.0
U073	3,3'-Dichlorobenzidine	3,3'-Dichlorobenzidine	91–94–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U074	1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1476–11–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		trans-1,4-Dichloro-2-butene	764–41–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U075	Dichlorodifluoromethane	Dichlorodifluoromethane	75–71–8	0.23	7.2
U076	1,1-Dichloroethane	1,1-Dichloroethane	75–34–3	0.059	6.0
U077	1,2-Dichloroethane	1,2-Dichloroethane	107–06–2	0.21	6.0
U078	1,1-Dichloroethylene	1,1-Dichloroethylene	75–35–4	0.025	6.0
U079	1,2-Dichloroethylene	trans-1,2-Dichloroethylene	156–60–5	0.054	30
U080	Methylene chloride	Methylene chloride	75–09–2	0.089	30
U081	2,4-Dichlorophenol	2,4-Dichlorophenol	120–83–2	0.044	14
U082	2,6-Dichlorophenol	2,6-Dichlorophenol	87–65–0	0.044	14
U083	1,2-Dichloropropane	1,2-Dichloropropane	78–87–5	0.85	18
U084	1,3-Dichloroproplyene	cis-1,3-Dichloroproplyene	10061–01–5	0.036	18
		trans-1,3-Dichloroproplyene	10061–02–6	0.036	18
U085	1,2:3,4-Diepoxybutane	1,2:3,4-Diepoxybutane	1464–53–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
U086	N,N′-Diethylhydrazine	N,N′-Diethylhydrazine	1615–80–1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U087	O,O-Diethyl S-methyldithiophosphate	O,O-Diethyl S-methyldithiophosphate.	3288–58–2	CARBN; CMBST	CMBST
U088	Diethyl phthalate	Diethyl phthalate	84–66–2	0.20	28
U089	Diethyl stilbestrol	Diethyl stilbestrol	56–53–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U090	Dihydrosafrole	Dihydrosafrole	94–58–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U091	3,3′-Dimethoxybenzidine	3,3′-Dimethoxybenzidine	119–90–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U092	Dimethylamine	Dimethylamine	124–40–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U093	p-Dimethylaminoazobenzene	p-Dimethylaminoazobenzene	60–11–7	0.13	CMBST
U094	7,12-Dimethylibenz(a)anthracene	7,12-Dimethylbenz(a)anthracene	57–97–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST CMBST
U095	3,3′-Dimethylbenzidine	3,3′-Dimethylbenzidine	119–93–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U096	alpha, alpha-Dimethyl benzyl hydroperoxide	alpha, alpha-Dimethyl benzyl hydroperoxide.	80–15–9	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U097	Dimethylcarbamoyl chloride	Dimethylcarbamoyl chloride	79–44–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U098	1,1-Dimethylhydrazine	1,1-Dimethylhydrazine	57–14–7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST

U099	1,2-Dimethylhydrazine	1,2-Dimethylhydrazine	540–73–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST CHOXD, CHRED; or CMBST
U101	2,4-Dimethylphenol	2,4-Dimethylphenol	105–67–9	0.036	14
U102	Dimethyl phthalate	Dimethyl phthalate	131–11–3	0.047	28
U103	Dimethyl sulfate	Dimethyl sulfate	77–78–1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U105	2,4-Dinitrotoluene	2,4-Dinitrotoluene	121–14–2	0.32	140
U106	2,6-Dinitrotoluene	2,6-Dinitrotoluene	606–20–2	0.55	28
U108	1,4-Dioxane	1,4-Dioxane	123–91–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		1,4-Dioxane; alternate [6] standard for nonwastewaters only.	123–91–1	NA	170
U109	1,2-Diphenylhydrazine	1,2-Diphenylhydrazine	122–66–7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
		1,2-Diphenylhydrazine; alternate [6] standard for wastewaters only.	122–66–7	0.087	NA
U110	Dipropylamine	Dipropylamine	142–84–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U111	Di-n-propylnitrosamine	Di-n-propylnitrosamine	621–64–7	0.40	14
U112	Ethyl acetate	Ethyl acetate	141–78–6	0.34	33
U113	Ethyl acrylate	Ethyl acrylate	140–88–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U114	Ethylenebisdithiocarbamic acid salts and esters	Ethylenebisdithiocarbamic acid	111–54–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U115	Ethylene oxide	Ethylene oxide	75–21–8	(WETOX or CHOXD) fb CARBN; or CMBST	CHOXD; or CMBST
		Ethylene oxide; alternate [6] standard for wastewaters only.	75–21–8	0.12	NA
U116	Ethylene thiourea	Ethylene thiourea	96–45–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U117	Ethyl ether	Ethyl ether	60–29–7	0.12	160
U118	Ethyl methacrylate	Ethyl methacrylate	97–63–2	0.14	160
U119	Ethyl methane sulfonate	Ethyl methane sulfonate	62–50–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U120	Fluoranthene	Fluoranthene	206–44–0	0.068	3.4
U121	Trichloromonofluoromethane	Trichloromonofluoromethane	75–69–4	0.020	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
U122	Formaldehyde	Formaldehyde	50–00–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U123	Formic acid	Formic acid	64–18–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U124	Furan	Furan	110–00–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U125	Furfural	Furfural	98–01–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U126	Glycidylaldehyde	Glycidylaldehyde	765–34–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U127	Hexachlorobenzene	Hexachlorobenzene	118–74–1	0.055	10
U128	Hexachlorobutadiene	Hexachlorobutadiene	87–68–3	0.055	5.6
U129	Lindane	alpha-BHC	319–84–6	0.00014	0.066
		beta-BHC	319–85–7	0.00014	0.066
		delta-BHC	319–86–8	0.023	0.066
		gamma-BHC (Lindane)	58–89–9	0.0017	0.066
U130	Hexachlorocyclopentadiene	Hexachlorocyclopentadiene	77–47–4	0.057	2.4
U131	Hexachloroethane	Hexachloroethane	67–72–1	0.055	30
U132	Hexachlorophene	Hexachlorophene	70–30–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U133	Hydrazine	Hydrazine	302–01–2	CHOXD; CHRED; CARBN; DIODG; or CMBST	CHOXD; CHRED; or CMBST
U134	Hydrogen fluoride	Fluoride (measured in wastewaters only).	16964–48–8	35	ADGAS fb NEUTR; or NEUTR
U135	Hydrogen Sulfide	Hydrogen Sulfide	7783–06–4	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U136	Cacodylic acid	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
U137	Indeno(1,2,3-c,d)pyrene	Indeno(1,2,3-c,d)pyrene	193–39–5	0.0055	3.4
U138	Iodomethane	Iodomethane	74–88–4	0.19	65
U140	Isobutyl alcohol	Isobutyl alcohol	78–83–1	5.6	170
U141	Isosafrole	Isosafrole	120–58–1	0.081	2.6
U142	Kepone	Kepone	143–50–8	0.0011	0.13

U143	Lasiocarpine	Lasiocarpine	303–34–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U144	Lead acetate	Lead	7439–92–1	0.69	0.37 mg/l TCLP
U145	Lead phosphate	Lead	7439–92–1	0.69	0.37 mg/l TCLP
U146	Lead subacetate	Lead	7439–92–1	0.69	0.37 mg/l TCLP
U147	Maleic anhydride	Maleic anhydride	108–31–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U148	Maleic hydrazide	Maleic hydrazide	123–33–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U149	Malononitrile	Malononitrile	109–77–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U150	Melphalan	Melphalan	148–82–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U151	U151 (mercury) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439–97–6	NA	RMERC
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are residues from RMERC only.	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are not residues from RMERC.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All U151 (mercury) wastewaters	Mercury	7439–97–6	0.15	NA
	Elemental Mercury Contaminated with Radioactive materials.	Mercury	7439–97–6	NA	AMLGM
U152	Methacrylonitrile	Methacrylonitrile	126–98–7	0.24	84
U153	Methanethiol	Methanethiol	74–93–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U154	Methanol	Methanol	67–56–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Methanol, alternate[6] set of standards for both wastewaters and nonwastewaters.	67–56–1	5.6	0.75 mg/l TCLP
U155	Methapyrilene	Methapyrilene	91–80–5	0.081	1.5
U156	Methyl chlorocarbonate	Methyl chlorocarbonate	79–22–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U157	3-Methylcholanthrene	3-Methylcholanthrene	56–49–5	0.0055	15
U158	4,4'-Methylene bis(2-chloroaniline)	4,4'-Methylene bis(2-chloroaniline)	101–14–4	0.50	30
U159	Methyl ethyl ketone	Methyl ethyl ketone	78–93–3	0.28	36
U160	Methyl ethyl ketone peroxide	Methyl ethyl ketone peroxide	1338–23–4	CHOXD; CHRED; CARBN; BIODG; OR CMBST	CHOXD; CHRED; OR CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
U161	Methyl isobutyl ketone	Methyl isobutyl ketone	108–10–1	0.14	33
U162	Methyl methacrylate	Methyl methacrylate	80–62–6	0.14	160
U163	N-Methyl N'-nitro N-nitrosoguanidine	N-Methyl N'-nitro N-nitrosoguanidine.	70–25–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U164	Methylthiouracil	Methylthiouracil	56–04–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U165	Naphthalene	Naphthalene	91–20–3	0.059	5.6
U166	1,4-Naphthoquinone	1,4-Naphthoquinone	130–15–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U167	1-Naphthlyamine	1-Naphthlyamine	134–32–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U168	2-Naphthlyamine	2-Naphthlyamine	91–59–8	0.52	CMBST
U169	Nitrobenzene	Nitrobenzene	98–95–3	0.068	14
U170	p-Nitrophenol	p-Nitrophenol	100–02–7	0.12	29
U171	2-Nitropropane	2-Nitropropane	79–46–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U172	N-Nitrosodi-n-butylamine	N-Nitrosodi-n-butylamine	924–16–3	0.40	17
U173	N-Nitrosodiethylamine	N-Nitrosodiethanolamine	1116–54–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U174	N-Nitrosodiethanolamine	N-Nitrosodiethylamine	55–18–5	0.40	28
U176	N-Nitroso-N-ethylurea	N-Nitroso-N-ethylurea	759–73–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U177	N-Nitroso-N-methylurea	N-Nitroso-N-methylurea	684–93–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U178	N-Nitroso-N-methylurethane	N-Nitroso-N-methylurethane	615–53–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U179	N-Nitrosopiperidine	N-Nitrosopiperidine	100–75–4	0.013	35
U180	N-Nitrosopyrrolidine	N-Nitrosopyrrolidine	930–55–2	0.013	35
U181	5-Nitro-o-toluidine	5-Nitro-o-toluidine	99–55–8	0.32	28

U182	Paraldehyde	Paraldehyde	123–63–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U183	Pentachlorobenzene	Pentachlorobenzene	608–93–5	0.055	10
U184	Pentachloroethane	Pentachloroethane	76–01–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Pentachloroethane; alternate[6] standards for both wastewaters and nonwastewaters.	76–01–7	0.055	6.0
U185	Pentachloronitrobenzene	Pentachloronitrobenzene	82–68–8	0.055	4.8
U186	1,3-Pentadiene	1,3-Pentadiene	504–60–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U187	Phenacetin	Phenacetin	62–44–2	0.081	16
U188	Phenol	Phenol	108–95–2	0.039	6.2
U189	Phosphorus sulfide	Phosphorus sulfide	1314–80–3	CHOXD, CHRED, or CMBST	CHOXD, CHRED, or CMBST
U190	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride	85–44–9	0.055	28
U191	2-Picoline	2-Picoline	109–06–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U192	Pronamide	Pronamide	23950–58–5	0.093	1.5
U193	1,3-Propane sultone	1,3-Propane sultone	1120–71–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U194	n-Propylamine	n-Propylamine	107–10–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U196	Pyridine	Pyridine	110–86–1	0.014	16
U197	p-Benzoquinone	p-Benzoquinone	106–51–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U200	Reserpine	Reserpine	50–55–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U201	Resorcinol	Resorcinol	108–46–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U202	Saccharin and salts	Saccharin	81–07–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U203	Safrole	Safrole	94–59–7	0.081	22
U204	Selenium dioxide	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
U205	Selenium sulfide	Selenium	7782–49–2	0.82	0.16 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent: Common name	Regulated hazardous constituent: CAS[2] No.	Wastewaters: Concentration in mg/l[3]; or technology code[4]	Nonwastewaters: Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
U206	Streptozotocin	Streptozotocin	18883–66–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U207	1,2,4,5-Tetrachlorobenzene	1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
U208	1,1,1,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
U209	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	79–34–5	0.057	6.0
U210	Tetrachloroethylene	Tetrachloroethylene	127–18–4	0.056	6.0
U211	Carbon tetrachloride	Carbon tetrachloride	56–23–5	0.057	6.0
U213	Tetrahydrofuran	Tetrahydrofuran	109–99–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U214	Thallium (I) acetate	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
U215	Thallium (I) carbonate	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
U216	Thallium (I) chloride	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
U217	Thallium (I) nitrate	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
U218	Thioacetamide	Thioacetamide	62–55–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U219	Thiourea	Thiourea	62–56–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U220	Toluene	Toluene	108–83–3	0.080	10
U221	Toluenediamine	Toluenediamine	25376–45–8	CARBN; or CMBST	CMBST
U222	o-Toluidine hydrochloride	o-Toluidine hydrochloride	636–21–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U223	Toluene diisocyanate	Toluene diisocyanate	26471–62–5	CARBN; or CMBST	CMBST
U225	Bromoform (Tribromomethane)	Bromoform (Tribromomethane)	75–25–2	0.63	15
U226	1,1,1-Trichloroethane	1,1,1-Trichloroethane	71–55–6	0.054	6.0
U227	1,1,2-Trichloroethane	1,1,2-Trichloroethane	79–00–5	0.054	6.0
U228	Trichloroethylene	Trichloroethylene	79–01–6	0.054	6.0
U234	1,3,5-Trinitrobenzene	1,3,5-Trinitrobenzene	99–35–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U235	tris-(2,3-Dibromoprophyl)-phosphate	tris-(2,3-Dibromoprophyl)-phosphate.	126–72–7	0.11	0.10
U236	Trypan Blue	Trypan Blue	72–57–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U237	Uracil mustard	Uracil mustard	66–75–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U238	Urethane (Ethyl carbamate)	Urethane (Ethyl carbamate)	51–79–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U239	Xylenes	Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
U240	2,4-D (2,4-Dichlorophenoxyacetic acid)	2,4–D (2,4-Dichlorophenoxyacetic acid).	94–75–7	0.72	10
	2,4-D (2,4-Dichlorophenoxyacetic acid) salts and esters.		NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U243	Hexachloropropylene	Hexachloropropylene	1888–71–7	0.035	30
U244	Thiram	Thiram	137–26–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U246	Cyanogen bromide	Cyanogen bromide	506–68–3	CHOXD; WETOX; or CMBST	CHOXD, WETOX; or CMBST
U247	Methoxychlor	Methoxychlor	72–43–5	0.25	0.18
U248	Warfarin, & salts, when present at concentrations of 0.3% or less.	Warfarin	81–81–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U249	Zinc phosphide, Zn_3P_2, when present at concentrations of 10% or less.	Zinc Phosphide	1314–84–7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U271	Benomyl	Benomyl	17804–35–2	0.056	1.4
U277	Sulfallate	Sulfallate	95–06–7	0.056	1.4
U279	Carbaryl	Carbaryl	63–25–2	0.006	0.14
U280	Barban	Barban	101–27–9	0.056	1.4
U328	o-Toluidine	o-Toluidine	95–53–4	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN.	CMBST
U353	p-Toluidine	p-Toluidine	106–49–0	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN.	CMBST
U359	2-Ethoxyethanol	2-Ethoxyethanol	110–80–5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

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
U360	Carbamates, N.O.S	Carbamates, N.O.S	NA	0.056	1.4
U361	Carbamoyl Oximes, N.O.S	Carbamoyl Oximes, N.O.S	NA	0.056	0.28
U362	Thiocarbamates, N.O.S	Thiocarbamates, N.O.S	NA	0.003	1.4
U363	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Antimony	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
	Lead	Lead	7439–92–1	0.69	0.37 mg/l TCLP
	Nickel	Nickel	7440–02–0	3.98	5.0 mg/l TCLP
	Selenium	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
U364	Bendiocarb phenol	Bendiocarb phenol	22961–82–6	0.056	1.4
U365	Molinate	Molinate	2212–67–1	0.003	1.4
U366	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U367	Carbofuran phenol	Carbofuran phenol	1563–38–8	0.056	1.4
U368	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Antimony	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
U369	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Antimony	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
U370	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U371	Hexazinone intermediate	Hexazinone intermediate	65086–85–3	0.056	1.4
U372	Carbendazim	Carbendazim	10605–21–7	0.056	1.4
U373	Propham	Propham	122–42–9	0.056	1.4
U374	U9069	U9069	112006–94–7	0.056	1.4
U375	Troysan Polyphase	Troysan Polyphase	55406–53–6	0.056	1.4
U376	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Selenium	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
U377	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U378	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U379	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U380	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U381	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U382	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U383	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U384	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U385	Vernolate	Vernolate	1929–77–7	0.003	1.4
U386	Cycloate	Cycloate	1134–23–2	0.003	1.4
U387	Prosulfocarb	Prosulfocarb	52888–80–9	0.003	1.4
U388	Esprocarb	Esprocarb	85785–20–2	0.003	1.4
U389	Triallate	Triallate	2303–17–5	0.003	1.4
U390	Eptam	Eptam	759–94–4	0.003	1.4
U391	Pebulate	Pebulate	1114–71–2	0.003	1.4
U392	Butylate	Butylate	2008–41–5	0.003	1.4
U393	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U394	A2213	A2213	30558–43–1	0.003	1.4
U395	Reactacrease 4–DEG	Reactacrease 4–DEG	5952–26–1	0.056	1.4
U396	Ferbam	Ferbam	14484–64–1	0.056	1.4
U397	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Lead	Lead	7439–92–1	0.69	0.37 mg/l TCLP
U398	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28

U399	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Nickel	Nickel	7440–02–0	3.98	5.0 mg/l TCLP
U400	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U401	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U402	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U403	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U404	Triethylamine	Triethylamine	121–44–8	0.081	1.5
U405	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U406	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U407	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U408	2,4,6-Tribromophenol	2,4,6-Tribromophenol	118–79–6	0.035	7.4

Notes to Table:

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish betweenapplicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264, Subpart O, or Part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[6] Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[8] As an alternative to these standards, the underlying hazardous constituents in the waste must meet a CWA limitation, which can include a toxic pollutant indicator for the constituent; Pretreatment Standards for Existing Sources; Pretreatment Standards for New Sources; local limitations based upon a pass-through determination; or a Fundamentally Different Factors variance under 40 CFR 125.30–125.32.

17. In § 268.42 Table 1. is amended by revising the entry "CMBST" to read as follows:

§ 268.42 Treatment standards expressed as specified technologies.

* * * * *

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

Technology code	Description of technology-based standards
* * *	* * * *
CMBST:	High temperature organic destruction technologies, such as combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264, subpart O, or 40 CFR part 265, subpart O, or 40 CFR part 266, subpart H, and in other units operated in accordance with applicable technical operating requirements; and certain non-combustive technologies, such as the Catalytic Extraction Process.
* * *	* * * *

* * * * *

18. Section 268.44 is amended by revising paragraph (a) to read as follows:

§ 268.44 Variance from a treatment standard.

(a) Where the treatment standard is expressed as a concentration in a waste or waste extract and a waste cannot be treated to the specified level, or where the treatment technology is not appropriate to the waste, the generator or treatment facility may petition the Administrator for a variance from the treatment standard. The petitioner must demonstrate that because the physical or chemical properties of the waste differs significantly from wastes analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods. The petitioner may also demonstrate that it is treating underlying hazardous constituents in characteristically hazardous wastewaters by sending the waste to a properly designed and operated BAT/PSES system, which may not be achieving the treatment standards found in § 268.48.

* * * * *

19. In § 268.48 the table in paragraph (a) is revised to read as follows:

§ 268.48 Universal treatment standards.

(a) * * *

UNIVERSAL TREATMENT STANDARDS

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
I. Organic constituents:			
A2213	30558–43–1	0.003	1.4
Acenaphthene	83–32–9	0.059	3.4
Acenaphthylene	208–96–8	0.059	3.4
Acetone	67–64–1	0.28	160
Acetonitrile	75–05–8	5.6	38
Acetophenone	96–86–2	0.010	9.7
2-Acetylaminofluorene	53–96–3	0.059	140
Acrolein	107–02–8	0.29	NA
Acrylamide	79–06–1	19	23
Acrylonitrile	107–13–1	0.24	84
Aldicarb sulfone	1646–88–4	0.056	0.28
Aldrin	309–00–2	0.021	0.066
4-Aminobiphenyl	92–67–1	0.13	NA
Aniline	62–53–3	0.81	14
Anthracene	120–12–7	0.059	3.4
Aramite	140–57–8	0.36	NA
Barban	101–27–9	0.056	1.4
Bendiocarb	22781–23–3	0.056	1.4
Bendiocarb phenol	22961–82–6	0.056	1.4
Benomyl	17804–35–2	0.056	1.4
Benz(a)anthracene	56–55–3	0.059	3.4
Benzal chloride	98–87–3	0.055	6.0
Benzene	71–43–2	0.14	10
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205–99–2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207–08–9	0.11	6.8
Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
Benzo(a)pyrene	50–32–8	0.061	3.4

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
alpha-BHC	319–84–6	0.00014	0.066
beta-BHC	319–85–7	0.00014	0.066
delta-BHC	319–86–8	0.023	0.066
gamma-BHC	58–89–9	0.0017	0.066
Bromodichloromethane	75–27–4	0.35	15
Bromomethane/Methyl bromide	74–83–9	0.11	15
4-Bromophenyl phenyl ether	101–55–3	0.055	15
n-Butyl alcohol	71–36–3	5.6	2.6
Butyl benzyl phthalate	85–68–7	0.017	28
Butylate	2008–41–5	0.003	1.4
2-sec-Butyl-4,6-dinitrophenol/Dinoseb	88–85–7	0.066	2.5
Carbaryl	63–25–2	0.006	0.14
Carbenzadim	10605–21–7	0.056	1.4
Carbofuran	1563–66–2	0.006	0.14
Carbofuran phenol	1563–38–8	0.056	1.4
Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56–23–5	0.057	6.0
Carbosulfan	55285–14–8	0.028	1.4
Chlordane (alpha and gamma isomers)	57–74–9	0.0033	0.26
p-Chloroaniline	106–47–8	0.46	16
Chlorobenzene	108–90–7	0.057	6.0
Chlorobenzilate	510–15–6	0.10	NA
2-Chloro-1,3-butadiene	126–99–8	0.057	0.28
Chlorodibromomethane	124–48–1	0.057	15
Chloroethane	75–00–3	0.27	6.0
bis(2-Chloroethoxy)methane	111–91–1	0.036	7.2
bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
2-Chloroethyl vinyl ether	110–75–8	0.062	NA
Chloroform	67–66–3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638–32–9	0.055	7.2
p-Chloro-m-cresol	59–50–7	0.018	14
Chloromethane/Methyl chloride	74–87–3	0.19	30
2-Chloronaphthalene	91–58–7	0.055	5.6
2-Chlorophenol	95–57–8	0.044	5.7
3-Chloropropylene	107–05–1	0.036	30
Chrysene	218–01–9	0.059	3.4
o-Cresol	95–48–7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol)	108–39–4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106–44–5	0.77	5.6
m-Cumenyl methylcarbamate	64–00–6	0.056	1.4
Cycloate	1134–23–2	0.003	1.4
Cyclohexanone	108–94–1	0.36	0.75 mg/l TCLP
o,p′-DDD	53–19–0	0.023	0.087
p,p′-DDD	72–54–8	0.023	0.087
o,p′-DDE	3424–82–6	0.031	0.087
p,p′-DDE	72–55–9	0.031	0.087
o,p′-DDT	789–02–6	0.0039	0.087
p,p′-DDT	50–29–3	0.0039	0.087
Dibenz(a,h)anthracene	53–70–3	0.055	8.2
Dibenz(a,e)pyrene	192–65–4	0.061	NA
1,2-Dibromo-3-chloropropane	96–12–8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106–93–4	0.028	15
Dibromomethane	74–95–3	0.11	15
m-Dichlorobenzene	541–73–1	0.036	6.0
o-Dichlorobenzene	95–50–1	0.088	6.0
p-Dichlorobenzene	106–46–7	0.090	6.0
Dichlorodifluoromethane	75–71–8	0.23	7.2
1,1-Dichloroethane	75–34–3	0.059	6.0
1,2-Dichloroethane	107–06–2	0.21	6.0
1,1-Dichloroethylene	75–35–4	0.025	6.0
trans-1,2-Dichloroethylene	156–60–5	0.054	30
2,4-Dichlorophenol	120–83–2	0.044	14
2,6-Dichlorophenol	87–65–0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94–75–7	0.72	10
1,2-Dichloropropane	78–87–5	0.85	18

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
cis-1,3-Dichloropropylene	10061–01–5	0.036	18
trans-1,3-Dichloropropylene	10061–02–6	0.036	18
Dieldrin	60–57–1	0.017	0.13
Diethyl phthalate	84–66–2	0.20	28
Diethylene glycol, dicarbamate	5952–26–1	0.056	1.4
p-Dimethylaminoazobenzene	60–11–7	0.13	NA
2-4-Dimethyl phenol	105–67–9	0.036	14
Dimethyl phthalate	131–11–3	0.047	28
Dimetilan	644–64–4	0.056	1.4
Di-n-butyl phthalate	84–74–2	0.057	28
1,4-Dinitrobenzene	100–25–4	0.32	2.3
4,6–Dinitro-o-cresol	534–52.1	0.28	160
2,4-Dinitrophenol	51–28–5	0.12	160
2,4-Dinitrotoluene	121–14–2	0.32	140
2,6-Dinitrotoluene	606–20–2	0.55	28
Di-n-octyl phthalate	117–84–0	0.017	28
Di-n-propylnitrosamine	621–64–7	0.40	14
1,4-Dioxane	123–91–1	12.0	170
Diphenylamine (difficult to distinguish from diphenylitrosamine)	122–39–4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86–30–6	0.92	13
1,2-Diphenylhydrazine	122–66–7	0.087	NA
Disulfoton	298–04–3	0.017	6.2
Dithiocarbamates (total)	137–30–4	0.028	28
Endosulfan I	959–98–8	0.023	0.066
Endosulfan II	33213–65–9	0.029	0.13
Endosulfan sulfate	1031–07–8	0.029	0.13
Endrin	72–20–8	0.0028	0.13
Endrin aldehyde	7421–93–4	0.025	0.13
EPTC	759–94–4	0.003	1.4
Ethyl acetate	141–78–6	0.34	33
Ethyl benzene	100–41–4	0.057	10
Ethyl cyanide/Propanenitrile	107–12–0	0.24	360
Ethyl ether	60–29–7	0.12	160
Ethyl methacrylate	97–63–2	0.14	160
Ethylene oxide	75–21–8	0.12	NA
bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
Famphur	52–85–7	0.017	15
Fluoranthene	206–44–0	0.068	3.4
Fluorene	86–73–7	0.059	3.4
Formetanate hydrochloride	23422–53–9	0.056	1.4
Formparanate	17702–57–7	0.056	1.4
Heptachlor	76–44–8	0.0012	0.066
Heptachlor epoxide	1024–57–3	0.016	0.066
Hexachlorobenzene	118–74–1	0.055	10
Hexachlorobutadiene	87–68–3	0.055	5.6
Hexachlorocyclopentadiene	77–47–4	0.057	2.4
Hexachloroethane	67–72–1	0.055	30
Hexachloropropylene	1888–71–7	0.035	30
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
Indeno (1,2,3-c,d) pyrene	193–39–5	0.0055	3.4
Iodomethane	74–88–4	0.19	65
3-Iodo-2-propynyl n-butylcarbamate	55406–53–6	0.056	1.4
Isobutyl alcohol	78–83–1	5.6	170
Isodrin	465–73–6	0.021	0.066
Isolan	119–38–0	0.056	1.4
Isosafrole	120–58–1	0.081	2.6
Kepone	143–50–0	0.0011	0.13
Methacrylonitrile	126–98–7	0.24	84
Methanol	67–56–1	5.6	0.75 mg/l TCLP
Methapyrilene	91–80–5	0.081	1.5
Methiocarb	2032–65–7	0.056	1.4
Methomyl	16752–77–5	0.028	0.14
Methoxychlor	72–43–5	0.25	0.18
Methyl ethyl ketone	78–93–3	0.28	36

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
Methyl isobutyl ketone	108–10–1	0.14	33
Methyl methacrylate	80–62–6	0.14	160
Methyl methansulfonate	66–27–3	0.018	NA
Methyl parathion	298–00–0	0.014	4.6
3-Methylchlolanthrene	56–49–5	0.0055	15
4,4-Methylene bis(2-chloroaniline	101–14–4	0.50	30
Methylene chloride	75–09–2	0.089	30
Metolcarb	1129–41–5	0.056	1.4
Mexacarbate	315–18–4	0.056	1.4
Molinate	2212–67–1	0.003	1.4
Naphthalene	91–20–3	0.059	5.6
2-Naphthylamine	91–59–8	0.52	NA
o-Nitroaniline	88–74–4	0.27	14
p-Nitroaniline	100–01–6	0.028	28
Nitrobenzene	98–95–3	0.068	14
5-Nitro-o-toluidine	99–55–8	0.32	28
o-Nitrophenol	88–75–5	0.028	13
p-Nitrophenol	100–02–7	0.12	29
N-Nitrosodiethylamine	55–18–5	0.40	28
N-Nitrosodimethylamine	62–75–9	0.40	2.3
N-Nitroso-di-n-butylamine	924–16–3	0.40	17
N-Nitrosomethylethylamine	10595–95–6	0.40	2.3
N-Nitrosomorpholine	59–89–2	0.40	2.3
N-Nitrosopiperidine	100–75–4	0.013	35
N-Nitrosopyrrolidine	930–55–2	0.013	35
Oxamyl	23135–22–0	0.056	0.28
Parathion	56–38–2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors)	1336–36–3	0.10	10
Pebulate	1114–71–2	0.003	1.4
Pentachlorobenzene	608–93–5	0.055	10
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
Pentachloroethane	76–01–7	0.055	6.0
Pentachloronitrobenzene	82–68–8	0.055	4.8
Pentachlorophenol	87–86–5	0.089	7.4
Phenacetin	62–44–2	0.081	16
Phenanthrene	85–01–8	0.059	5.6
Phenol	108–95–2	0.039	6.2
o-Phenylenediamine	95–54–5	0.056	5.6
Phorate	298–02–2	0.021	4.6
Phthalic acid	100–21–0	0.055	28
Phthalic anhydride	85–44–9	0.055	28
Physostigmine	57–47–6	0.056	1.4
Physostigmine salicylate	57–64–7	0.056	1.4
Promecarb	2631–37–0	0.056	1.4
Pronamide	23950–58–5	0.093	1.5
Propham	122–42–9	0.056	1.4
Propoxur	114–26–1	0.056	1.4
Prosulfocarb	52888–80–9	0.003	1.4
Pyrene	129–00–0	0.067	8.2
Pyridine	110–86–1	0.014	16
Safrole	94–59–7	0.081	22
Silvex/2,4,5-TP	93–72–1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
1,1,2,2-Tetrachloroethane	79–34–5	0.057	6.0
Tetrachloroethylene	127–18–4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
Thiodicarb	59669–26–0	0.019	1.4
Thiophanate-methyl	23564–05–8	0.056	1.4
Tirpate	26419–73–8	0.056	0.28
Toluene	108–88–3	0.080	10
Toxaphene	8001–35–2	0.0095	2.6

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent/common name	CAS[1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l[2]	Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Triallate	2303–17–5	0.003	1.4
Tribromomethane/Bromoform	75–25–2	0.63	15
1, 2, 4-Trichlorobenzene	120–82–1	0.055	19
1,1,1-Trichlorethane	71–55–6	0.054	6.0
1,1,2-Trichlorethane	79–00–5	0.054	6.0
Trichloroethylene	79–01–6	0.054	6.0
Trichloromonofluoromethane	75–69–4	0.020	30
2,4,5-Trichlorophenol	95–95–4	0.18	7.4
2,4,6-Trichlorophenol	88–06–2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93–.76–5	0.72	7.9
1,2,3-Trichloropropane	96–18–4	0.85	30
1,1,2-Trichloro-2,2,2-trifluoroethane	76–13–1	0.057	30
Triethylamine	101–44–8	0.081	1.5
tris-(2,3-Dibromopropyl) phosphate	126–72–7	0.11	0.10
Vernolate	1929–77–7	0.003	1.4
Vinyl chloride	75–01–4	0.27	6.0
Xylenes-mixed isomers (sum of o-,m-, and p-xylene concentrations)	1330–20–7	0.32	30
II. Inorganic Constituents:			
Antimony	7440–36–0	1.9	2.1 mg/l TCLP
Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
Barium	7440–39–3	1.2	7.6 mg/l TCLP
Beryllium	7440–41–7	0.82	0.014 mg/l TCLP
Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
Cyanides (Total)[4]	57–12–5	1.2	590
Cyanides (Amenable)[4]	57–12–5	0.86	30
Fluoride[5]	16984–48–8	35	NA
Lead	7439–92–1	0.69	0.37 mg/l TCLP
Mercury—Nonwastewater from Retort	7439–97–6	NA	0.20 mg/l TCLP
Mercury—All Others	7439–97–6	0.15	0.25 mg/l TCLP
Nickel	7440–02–0	3.98	5.0 mg/l TCLP
Selenium	7782–49–2	0.82	0.16 mg/l TCLP
Silver	7440–22–4	0.43	0.30 mg/l TCLP
Sulfide	18496–25–8	14	NA
Thallium	7440–28–0	1.4	0.78 mg/l TCLP
Vanadium[4]	7440–62–2	4.3	0.23 mg/l TCLP
Zinc[5]	7440–66–6	2.61	5.3 mg/l TCLP

Notes to table:

[1] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.

[2] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[3] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[4] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[5] These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at § 268.2(i).

20. Appendix XI is added to part 268 to read as follows:

APPENDIX XI TO PART 268—METAL BEARING WASTES PROHIBITED FROM DILUTION IN A COMBUSTION UNIT ACCORDING TO 40 CFR 268.3(c)[1]

Waste code	Waste description
D004	Toxicity Characteristic for Arsenic.
D005	Toxicity Characteristic for Barium.
D006	Toxicity Characteristic for Cadmium.
D007	Toxicity Characteristic for Chromium.
D008	Toxicity Characteristic for Lead.
D009	Toxicity Characteristic for Mercury.
D010	Toxicity Characteristic for Selenium.
D011	Toxicity Characteristic for Silver.

APPENDIX XI TO PART 268—METAL BEARING WASTES PROHIBITED FROM DILUTION IN A COMBUSTION UNIT ACCORDING TO 40 CFR 268.3(C) [1]—Continued

Waste code	Waste description
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.
F007	Spent cyanide plating bath solutions from electroplating operations.
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.
F010	Quenching bath residues from oil baths from metal treating operations where cyanides are used in the process.
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum car washing when such phosphating is an exclusive conversion coating process.
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003	Wastewater treatment sludge from the production of molybdate orange pigments.
K004	Wastewater treatment sludge from the production of zinc yellow pigments.
K005	Wastewater treatment sludge from the production of chrome green pigments.
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K007	Wastewater treatment sludge from the production of iron blue pigments.
K008	Oven residue from the production of chrome oxide green pigments.
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.
K069	Emission control dust/sludge from secondary lead smelting.
K071	Brine purification muds from the mercury cell processes in chlorine production, where separately prepurified brine is not used.
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.
K106	Sludges from the mercury cell processes for making chlorine.
P010	Arsenic acid H_3AsO_4
P011	Arsenic oxide As_2O_5
P012	Arsenic trioxide
P013	Barium cyanide
P015	Beryllium
P029	Copper cyanide Cu(CN)
P074	Nickel cyanide $Ni(CN)_2$
P087	Osmium tetroxide
P099	Potassium silver cyanide
P104	Silver cyanide
P113	Thallic oxide
P114	Thallium (I) selenite
P115	Thallium (I) sulfate
P119	Ammonium vanadate
P120	Vanadium oxide V_2O_5
P121	Zinc cyanide.
U032	Calcium chromate.
U145	Lead phosphate.
U151	Mercury.
U204	Selenious acid.
U205	Selenium disulfide.
U216	Thallium (I) chloride.
U217	Thallium (I) nitrate.

[1] A combustion unit is defined as any thermal technology subject to 40 CFR part 264, subpart O; Part 265, subpart O; and/or 266, subpart H.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

21. 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

22. 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
* *	* *	* *	*
April 8, 1996	Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Aluminum Potliners in § 268.39..	61 FR [Insert page numbers].	July 8, 1996.
* *	* *	* *	*

* * * * *

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

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
* *	* *	*	* *
July 8, 1996	Prohibition on land disposal of carbamate wastes..	3004(m).	April 8, 1996, 61 FR [Insert page numbers].
* *	* *	*	* *
October 8, 1996	Prohibition on land disposal of K088 wastes. .	3004(m).	April 8, 1998, 61 FR [Insert page numbers].
April 8, 1996		3004(m)	April 8, 1996, 61 FR [Insert page numbers].
* *	* *	*	* *

* * * * *

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

23. The authority citation for part 403 continues to read as follows:

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

24. In § 403.5, paragraphs (c) heading, (c)(1) and (d) are revised to read as follows:

§ 403.5 National pretreatment standards: Prohibited discharges.

* * * * *

(c) *Development of specific limits by POTW.* (1) Each POTW developing a POTW Pretreatment Program pursuant to § 403.8 shall develop and enforce specific limits to implement the prohibitions listed in paragraphs (a)(1) and (b) of this section. Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits. In addition, the POTW may establish such limits as necessary to address the land disposal restrictions at 40 CFR 268.40.

* * * * *

(d) *Local limits.* Where specific prohibitions or limits on pollutants or pollutant parameters are developed by a POTW in accordance with paragraph (c) of this section, including those standards established to address land disposal restrictions at 40 CFR 268.40, such limits shall be deemed Pretreatment Standards for the purposes of section 307(d) of the Act.

* * * * *

[FR Doc. 96–7597 Filed 4–5–96; 8:45 am]

BILLING CODE 6560–50–P

---

40 CFR Parts 148, 268 and 403

[EPA # 530–Z–96–002; FRL–5452–7]

RIN 2050–AD38

Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

AGENCY: Environmental Protection Agency (EPA).

ACTION: Partial withdrawal and amendment of final rule.

SUMMARY: Elsewhere in this **Federal Register**, EPA is promulgating a final rule which, among other things, revises treatment standards for hazardous wastewaters that exhibit the characteristic of ignitability, corrosivity, reactivity, or toxicity. The revised treatment standards were promulgated to implement the mandate of the opinion of the Circuit Court of Appeals for the District of Columbia Circuit in *Chemical Waste Management (CWM)* v. *EPA*, 976 F. 2d 2 (D.C. Cir. 1992) cert. denied 507 U.S. 1057 (1993). On March 26, 1996, President Clinton signed into law the Land Disposal Program Flexibility Act of 1996 which, among other things, provides that the wastes in question are no longer prohibited from land disposal so long as they are not hazardous wastes at the point they are land disposed. By operation of the statute, this provision is made effective immediately and therefore essentially overrules this portion of the CWM opinion. EPA accordingly is incorporating the statutory provision into the regulations by amending and/or withdrawing the portions of the regulations that are superseded by the new legislation. The amendment/withdrawal of these standards does not affect any other part of the final rule; and the effective dates of the other actions in the final rule likewise will not change. Furthermore, EPA is amending parts of the LDR Phase II final rule, published on September 19, 1994 (59 FR 47982) which are also overruled by the legislation.

EFFECTIVE DATE: April 5, 1996.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at 800–424–9346 (toll-free) or 703–412–9810 locally. For specific information on the LDR Phase III rule