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Environmental Protection Agency

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Part II

**Environmental  
Protection Agency**

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40 CFR Part 264 et al.

Land Disposal Restrictions for Ignitable  
and Corrosive Characteristic Wastes  
Whose Treatment Standards Were  
Vacated; Interim Final Rule

# ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264, 265, 268, 270, and 271

[FRL 4656-7]

## Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated

AGENCY: Environmental Protection Agency (EPA).

ACTION: Interim final rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is today amending the treatment standards under the land disposal restrictions (LDR) program for wastes displaying the characteristic of ignitability (EPA Hazard Code D001) other than those ignitable wastes containing greater than 10 percent total organic carbon (i.e., D001 high TOC subcategory), and corrosivity (EPA Hazard Code D002) that are managed in systems other than those regulated under the Clean Water Act (CWA), those zero dischargers treating wastewater by CWA-equivalent treatment prior to ultimate land disposal, and those injecting into Class I deep wells regulated under the Safe Drinking Water Act (SDWA). This action is being taken to comply with the September 25, 1992 decision of the U.S. Court of Appeals in *Chemical Waste Management v. EPA*, 976 F.2d 2 (D.C. Cir. 1992). The underlying rule at issue in the opinion was signed on May 8, 1990, and published on June 1, 1990 (55 FR 22520). In the court's decision, the deactivation treatment standards for certain ignitable and corrosive wastes were vacated. Because land disposal of these wastes would be prohibited if no treatment standard is in place, EPA is replacing the vacated treatment standard before the court's mandate becomes effective to avoid an absolute ban on land disposal of these wastes.

**DATES:** This interim final rule is effective on May 10, 1993.

Comments may be submitted on or before July 9, 1993.

**ADDRESSES:** The public must send an original and two copies of their written comments to the EPA RCRA Docket (OS-305), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. Place the Docket Number F-93-TTCF-FFFFF on your comments. The official record for this rulemaking is also located in the RCRA Docket, room 2427, at the above address. It is open from 9 a.m. to 4 p.m., Monday through Friday, except on

Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. A maximum of 100 pages from the docket may be copied at no cost. Additional copies cost \$.15 per page.

**FOR FURTHER INFORMATION CONTACT:** For general information, contact the RCRA Hotline at (800) 424-9346 (toll free) or (703) 412-9810 locally. For information on specific aspects of this rule, contact Rhonda Craig, and for technical information about treatment standards, contact Lisa Jones, Office of Solid Waste (OS-322W), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, telephone (703) 308-8434. For information on capacity determinations, contact Bengie Carroll, Office of Solid Waste (OS-321W), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, telephone (703) 308-8440.

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##### I. Background

##### A. Summary of the Hazardous and Solid Waste Amendments of 1984

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA),

enacted on November 8, 1984, allow hazardous wastes to be land disposed only if they satisfy either of two conditions: (1) They are treated, or otherwise satisfy the requirement of RCRA section 3004(m), which provision requires EPA 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; or, (2) they can be land disposed in units satisfying the no-migration standard in sections 3004(d)(1), (e)(1), and (g)(5). Land disposal includes any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave. RCRA section 3004(k).

EPA was required to promulgate land disposal prohibitions and treatment standards under a congressionally-mandated schedule. Treatment standards had to be promulgated by May 8, 1990, for all wastes that were either listed or identified as hazardous at the time of the 1984 amendments to avoid a ban on land disposal of those hazardous wastes, a task EPA completed within the statutory time frame (although certain of those standards were later vacated by the D.C. Circuit, necessitating today's emergency interim final rule). RCRA section 3004 (d), (e), and (g).

The land disposal restrictions are effective upon promulgation. RCRA section 3004(h)(1). However, the Administrator may grant a national capacity variance from the effective date of the prohibition and establish a later effective date (not to exceed two years) based on the earliest date on which adequate alternative treatment, recovery, or disposal capacity which protects human health and the environment will be available. RCRA section 3004(h)(2). The Administrator may also grant a case-by-case extension of the effective date for up to one year, renewable once for up to one additional year, when an applicant successfully makes certain demonstrations. RCRA section 3004(h)(3).

In addition to prohibiting land disposal of hazardous wastes, Congress prohibited storage of any waste which is prohibited from land disposal unless such storage is solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal. RCRA section 3004(j). The provision applies, of course, only to

storage which is not also defined as land disposal in section 3004(k).

#### *B. Summary of Third Third Standards for Ignitable, Corrosive and Reactive Characteristic Wastes*

On May 8, 1990, EPA promulgated regulations addressing the last of five congressionally-mandated prohibitions on land disposal of hazardous wastes for those wastes that were either listed or identified as hazardous at the time of the 1984 amendments (the third one-third of the schedule of restricted hazardous wastes, hereafter referred to as the Third Third). Among other things in the Third Third final rule, the Agency promulgated treatment standards and prohibitions for hazardous wastes that exhibited one or more of the following characteristics: ignitability, corrosivity, reactivity, or EP toxicity (40 CFR 261.21-261.24). The Third Third rule established treatment standards for the characteristic wastes in one of four forms: (1) A concentration level for hazardous constituents equal to, or greater than, the characteristic level; (2) a concentration level for hazardous constituents less than the characteristic level; (3) a specified treatment technology (e.g., for ignitable wastes containing high levels of total organic carbon); and, (4) a treatment standard of "deactivation" which allowed the use of any technology, including dilution, to remove the characteristic property. For ignitable, corrosive, and reactive wastes, consideration was given to the hazardous constituents in the waste only when the Agency had information that such constituents were present (e.g., reactive cyanide wastes); otherwise, only the hazardous property of the characteristic waste had to be addressed.

The Agency also evaluated the applicability of certain provisions of the land disposal restrictions' framework with respect to characteristic wastes, including wastes regulated under the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA) Underground Injection Control (UIC) programs. This was done in an effort to ensure the successful integration of these programs with the LDR regulations, as required by section 1006 of RCRA which specifies that the Administrator shall integrate RCRA for purpose of administration and enforcement and shall avoid duplication to the maximum extent practicable. See generally 55 FR 22653-59 (June 1, 1990). Specifically, the Agency considered the appropriateness of the dilution prohibition for each of the characteristic waste streams, and the

applicability of treatment standards expressed as specified methods.

The Agency found, generally, that mixing waste streams to eliminate certain characteristics was appropriate and permissible for corrosive wastewaters, or in some cases, reactive or ignitable wastewaters. Furthermore, EPA stated that the dilution prohibition did not normally apply to characteristic wastewaters that are managed in treatment trains which include surface impoundments where the ultimate discharge is subject to regulation under the pretreatment and National Pollutant Discharge Elimination System (NPDES) programs under sections 307(b) and 402 of the CWA, or in Class I underground injection well systems regulated under the SDWA. In particular, the Agency stated that the treatment requirements and associated dilution rules under the CWA are generally consistent with the dilution rules under RCRA, and therefore decided to regulate these wastes exclusively under the existing CWA provisions. However, the Agency also singled out certain particularly toxic wastewaters or wastewaters not readily amenable to centralized wastewater management to which the dilution prohibition still applies notwithstanding management in CWA systems. 40 CFR 268.3(b).

Similarly, EPA stated that the regulatory program for Class I wells under the SDWA adequately protects drinking water sources. Class I deep wells inject below the lowermost geologic formation containing an underground drinking water source and are subject to federal location, construction, and operation requirements. The Agency stated that application of the dilution prohibition to these wastes would not further minimize threats to human health and the environment, so that it was permissible to inject wastes that were decharacterized by dilution into Class I wells.

#### *C. Summary of the D.C. Circuit's Opinion*

On September 25, 1992, the United States Court of Appeals for the District of Columbia Circuit ruled on the various petitions for review filed against the Third Third rule. *Chemical Waste Management, Inc. et al. v. EPA*, 976 F. 2d 2. The principal holdings of the case with respect to characteristic wastes, under EPA's initial reading of the opinion, are that: (1) EPA may require treatment under RCRA section 3004(m) to more stringent levels than those at which wastes are identified as hazardous so long as the level defining the waste as hazardous was above the

level at which threats to human health and the environment are minimized, 976 F. 2d at 12-14; (2) section 3004(m) requires that treatment standards address both short-term and long-term potential harms posed by hazardous wastes, and consequently must result in destruction, removal or immobilization of hazardous constituents as well as removal of the characteristic property, *id.* at 16, 17, 23; as a consequence, dilution is permissible as an exclusive method of treatment only for those characteristic wastes that do not contain hazardous constituents "in sufficient concentrations to pose a threat to human health or the environment" (i.e., the minimize threat level in section 3004(m)), *id.* at 16; and, (3) situations where characteristic hazardous wastes are diluted, lose their characteristic(s) and are then managed in centralized wastewater management land disposal units (i.e., subtitle D surface impoundments or Class I injection wells) are legal only if it can be demonstrated that hazardous constituents are reduced, destroyed or immobilized to the same extent as they would be pursuant to otherwise-applicable RCRA treatment standards, *id.* at 7.

As a consequence of these holdings, the court held that the deactivation standard for ignitable and corrosive wastes did not fully comply with RCRA section 3004(m). This was because that standard could be achieved by dilution, and dilution fails to destroy, remove, or immobilize the hazardous constituents that can be present in the wastes. *Id.* The court further held that dilution was ordinarily a permissible means of removing the ICR property of the wastes, but stated that it could be an impermissible means of removing ignitability and reactivity. This was because the court thought the emission of volatile organic constituents (VOCs) might be greater during the process of diluting ignitable wastes than when they are treated by other means, and that the risks of explosion of reactive wastes might be greater when those wastes are treated by dilution to remove the reactivity property. 976 F. 2d at 17, 18.

(It should be noted that the court also addressed several other issues that the Agency is not required to respond to in this interim final rule, either because it denied the petitioner's request for review, or because certain rules were remanded rather than vacated. For instance, the court remanded the lead and chromium treatment standards because EPA appeared to have relied on data that does not support its conclusion, and it denied review of a

petition for review of test compliance procedures.)

#### D. Response to the Court Decision

EPA filed a petition for rehearing with the D.C. Circuit on November 9, 1992. In its petition, EPA requested clarification of whether the provisions of the Third Third rule that allowed dilution of wastes going to CWA/SDWA units were vacated or remanded, suggesting that these provisions were more appropriately remanded. EPA also requested a 90-day stay of the mandate.

In a separate action, industry petitioners filed an unopposed motion seeking a 90-day stay of the mandate. On November 24, the D.C. Circuit issued an order partially granting industry's motion, staying the mandate through January 5, 1993. Then on January 5, industry petitioners filed a petition with the U.S. Supreme Court seeking a writ of certiorari. The government's response opposing grant of that motion was filed on April 8, 1993.

The Court denied EPA's request for rehearing on January 11, 1993, stating, however, that the Third Third treatment standards were vacated only insofar as expressly indicated in the September 25 opinion. On January 19, EPA published a Notice of Data Availability requesting comments and data on options for responding to the court decision (58 FR 4972).

Industry's petition for certiorari continued the stay of mandate issued by the D.C. Circuit pending action by the Supreme Court. On April 26, 1993, the Supreme Court denied certiorari, and the D.C. Circuit's mandate issues on May 10, 1993.

#### 1. Options Prepared for the Notice of Data Availability

As mentioned above, on January 19, 1993, EPA published a Notice of Data Availability to solicit as many comments as possible on all issues in the court opinion (58 FR 4972). The Agency prepared a Supplemental Information Report that was distributed to the public that set out the Agency's options for complying with the court's decision.

The report included options for establishing treatment standards for the underlying hazardous constituents in ignitable, corrosive and reactive (ICR) wastes that would have to be met prior to land disposal (including disposal in UIC wells). Two approaches were set out, along with the Agency's views on possible advantages and disadvantages of each. Under approach one, the Agency discussed the possibility of adopting concentration limits for underlying hazardous constituents.

Under approach two, the Agency discussed specifying required treatment technologies. The Agency discussed how these possible approaches might apply to ICR wastes that are not managed in CWA centralized wastewater treatment systems. Furthermore, the applicability of LDR treatment standards to CWA facilities, and possible implementation scenarios under the CWA were also discussed.

Additional issues involving the establishment of treatment standards were also discussed: options for addressing potential volatile organic constituent (VOC) emissions during dilution of ignitable wastes, and potential violent reactions during dilution of reactive wastes were presented.

The Agency discussed options for how to determine the equivalency of CWA treatment systems with treatment under RCRA. The "equivalency" discussion included possible options for addressing air emissions, leaks, and sludges from CWA treatment surface impoundments. Also mentioned were other Agency efforts such as the Hazardous Organic NESHAPs being developed by the Office of Air, and information being gathered by the Office of Solid Waste from existing databases on the management of nonhazardous industrial wastes as possibly being useful for addressing equivalency of CWA treatment impoundments.

The Agency also discussed possible alternative means of compliance with the treatment standards for the underlying hazardous constituents once they were developed. Options included the possible use of risk-based standards being developed for the Hazardous Waste Identification Rule (HWIR) to "cap" LDR treatment standards; meeting treatment standards before land disposal in a treatment surface impoundment; compliance with requirements of RCRA section 3005(j)(11) (i.e., installing double liners, groundwater monitoring, and leachate collection systems and removing sludge not meeting LDR standards annually for further treatment); and, the possibility of performing waste minimization as a means of meeting the requirements of treatability, and possibly capacity, variances.

Miscellaneous issues were also discussed, such as: does the opinion apply when characteristic wastes are treated by means other than dilution? Should *de minimis* losses of characteristic wastes sent to wastewater treatment systems be prohibited? Applicability of the decision to RCRA Subtitle C surface impoundments; and possible revisions to the principle

established in the Third Third rule that a change in treatability group constituted a new point of generation for characteristic wastes.

Preliminary capacity determinations were also presented for comment, as well as the legal basis for possibly granting a national capacity variance. Finally, preliminary regulatory impact screening analyses for surface disposed and underground injected wastes were also presented.

## 2. Solicitation of Comments on the Supplemental Information Report

The Agency solicited comments on various aspects of the options in the Supplemental Information Report. Approximately 60 public comments were received in response to the Notice of Data Availability. The Agency's response to issues that pertain to today's interim final rule have, in some cases, been included in the preamble discussion; the remainder of the Agency's responses may be found in the Response to Comments Background Document, available in the RCRA Docket. Other issues raised in the public comments that pertain to remanded portions of the court's opinion will be considered when the Agency prepares proposed approaches in future rulemakings.

## E. Rules Compelled by the Opinion to be Issued on An Emergency Basis

EPA is issuing this interim final rule on an emergency basis only with respect to those treatment standards that were vacated (as opposed to remanded) by the court. The distinction between vacated and remanded rules is that vacated rules are no longer in effect (once the court's mandate issues), whereas remanded rules remain in force until the Agency acts to replace them. This distinction has considerable significance with respect to LDR treatment standards. If there is no treatment standard for a prohibited waste (for example, as a result of a vacatur), that waste is prohibited from land disposal, because it has not been treated to meet the treatment standard established by EPA, and (presumably) is not being disposed in a no-migration unit. RCRA sections 3004 (d), (e), and (g)(5). A remanded treatment standard, on the other hand, would remain in effect and disposal of prohibited wastes treated pursuant to that standard is legal until the standard is amended.

In its November 9 request for rehearing to the court, EPA specifically requested that the Court clarify if it intended to remand, not vacate, the rules addressing dilution and subsequent land disposal of certain

decharacterized wastes being managed in Class I injection wells or in subtitle D surface impoundments whose ultimate discharge is subject to the CWA. The Court indicated in its January 11, 1993 response that the RCRA treatment standards were vacated only insofar as expressly indicated in the September 25 opinion.

In light of this order, the Agency's opinion is that the rules dealing with centralized wastewater management involving land disposal (§§ 268.1(c)(3) and 268.3(b)) were remanded, not vacated. (See 976 F. 2d at 7, 19-26 where these rules are discussed and not expressly vacated.) This means that the only wastes to which today's rule applies are those ignitable and corrosive wastes for which the treatment standard was deactivation (since the deactivation standard for these wastes was vacated) and which are not managed in the types of centralized wastewater management systems covered by the remanded rules cited above. Today's rule would thus apply, for example, to corrosive wastes that are being incinerated.

An issue exists under this interpretation as to whether centralized wastewater management systems receiving decharacterized ignitable or corrosive wastewaters would have to meet the treatment standards for those wastes promulgated in today's rule. The Agency does not read the opinion as requiring this result. In the first place, it seems clear from the structure of the opinion that the court was considering all issues relating to centralized wastewater management as essentially one single issue, see 976 F. 2d at 19-26, and did not vacate the rules affecting those systems.

Second, by not vacating the rules allowing treatment standards to be achieved through dilution where centralized wastewater management is involved, if EPA were to apply the amended ignitable and corrosive treatment standards to these centralized wastewater management situations, facilities could still dilute to meet the standards. Such a result makes no sense as a policy matter, and so does not appear to reflect the court's intent.

Third, the remanded rule relating to Class I injection wells allows injection of decharacterized wastes provided the wastes do not exhibit a characteristic at the point of injection. Consequently, ignitable and corrosive wastes could continue to be decharacterized (by any means) and injected in Class I deep wells without meeting the treatment standards for those wastes (since § 268.1(c)(3) was remanded). Section 268.3(b), on the other hand, is drafted somewhat differently to provide that

characteristic wastes that are managed in wastewater treatment systems whose discharge is ultimately subject to the CWA and that involve some type of land disposal can be diluted to meet the treatment standards. Although this language, unlike the parallel provision in 268.1 respecting Class I deep wells, does not expressly allow wastes not exhibiting a characteristic at the point of disposal to be managed in such systems, it would be anomalous to read the opinion as requiring more stringent rules to apply to CWA systems than to UIC systems, since the CWA systems perform treatment and do not (as the court viewed it) involve permanent land disposal. 976 F.2d at 24, 26. In addition, EPA intended that the provisions allowing dilution for characteristic wastes going to CWA systems and Class I deep wells have the same scope. 55 FR at 22656-58. Consequently, they should have the same scope in assessing the affect of the court's vacatur.

Finally, the opinion does not vacate the treatment standards for wastewaters exhibiting the EP characteristic. Consequently, since the rules on dilution were only remanded, such wastes can continue to be diluted and land disposed in CWA systems, or in Class I deepwells. By extension, it makes sense to allow dilution of ignitable and corrosive wastewaters, which, by definition, would contain EP constituents (if at all) in lower concentrations.<sup>1</sup>

The following discusses those types of centralized wastewater management that could be covered by today's rule, and the circumstances under which they are and are not covered.

## 1. Zero Discharge Facilities

In its Notice of Data Availability, EPA solicited comment on whether facilities that treat wastewater but do not ultimately discharge it to a navigable water or a POTW should be subject to the same standard of equivalent treatment as direct and indirect dischargers (see Supplemental

<sup>1</sup> The Agency also believes that any issues relating to the extent to which the opinion applies to subtitle C impoundments receiving decharacterized ignitable and corrosive wastes do not have to be addressed in today's rule because they arise only with respect to rules that were remanded. EPA solicited comment on the issue of whether subtitle C impoundments receiving decharacterized wastes could be affected by the court's opinion. Supplemental Information, pp. 40-1. The Agency has not resolved these issues. However, the court's opinion does not discuss the issue directly, and it would be anomalous for such facilities to be immediately subject to treatment standards when facilities with subtitle D impoundments are not. Consequently, today's rules do not apply to subtitle C impoundments receiving decharacterized ignitable and corrosive wastes.



Information Report, pp. 38-9). Commenters agreed that the same principles should apply. The Agency also believes that these facilities should be on the same regulatory timetable as direct and indirect dischargers, and consequently that today's treatment standards should not apply to such facilities when they do not apply to direct and indirect dischargers. Based on these comments, and for the reasons set out below, facilities that treat ignitable and corrosive wastes (either in tanks or in land-based units) in the manner described below and then land dispose the wastewaters, for example, by spray irrigation rather than by discharging to a navigable water or a POTW, do not have to meet the treatment standards for ignitable and corrosive wastes adopted today.

The Agency is taking this step in response to commenters who indicated that they treat wastewaters as well as direct or indirect dischargers, but are located in areas where there is no body of water into which to discharge (see, e.g. Comments of Hoechst Celanese). These facilities, in some cases, are subject to federal or state regulatory limitations that are as strict as those that apply to direct and indirect dischargers.

To avoid subjecting zero dischargers that substantially treat their wastewater to regulatory requirements not applicable to similarly-situated direct and indirect dischargers, the emergency rule provides that zero discharge facilities performing treatment equivalent to that performed by facilities subject to CWA limitations and standards are not subject to the emergency rule. This standard of equivalence is not the same as that which the Agency must ultimately address under the opinion regarding the extent of "RCRA-equivalent" treatment that must be performed to allow continued management involving surface impoundments. (Supplemental Information Report, pp. 15-25) Rather, EPA intends that, for purposes of today's rule, facilities that treat ignitable and corrosive wastewaters by the types of treatment that form the technical basis for most of the CWA standards and limitations (as well as the F039 wastewater standards) are not subject to the rule. These types of treatment are biological treatment for organics, reduction of hexavalent chromium, precipitation/sedimentation for metals, alkaline chlorination or ferrous sulfate precipitation of cyanide (to the extent these constituents are present in the untreated influent to wastewater treatment systems), or treatment that the facility can show performs as well or better than these enumerated

technologies. The Agency reiterates that these criteria has limited application only to this interim final rule. It is included because the Agency is promulgating this rule under emergency circumstances and this criteria provides a readily ascertainable way of determining who is and is not affected by today's rule. It is not meant to affect in any way what the appropriate CWA effluent limitation guidelines or individual permit limitations based on permit writers' Best Professional Judgement may be.

In determining whether a facility is performing CWA-equivalent treatment, treatment would need to be performed only for those hazardous constituents in the ignitable or corrosive wastes (for purposes of this evaluation). Cf. Supplementary Information Report, p. 37 (treatment of characteristic wastes, before aggregation, is sufficient to comply with treatment standard, notwithstanding that the same constituents may be present in noncharacteristic streams and thus may be present in the aggregated mixture of the treated characteristic wastes and non-characteristic wastes). Consequently, if a zero-discharge facility has metals found at 40 CFR part 261, appendix VIII in ignitable or corrosive wastes, the only type of treatment it would need to be conducting for purposes of this CWA-equivalent treatment showing would be treatment for the metals, even if other waste streams at the facility contain organics. The Agency, at least at this time, does not believe that the opinion requires treatment of those hazardous constituents not contributed at least in part by the prohibited wastes. Consequently, the demonstration should only concern itself with constituents present in the prohibited wastes.

Although the Agency has no information supporting that such facilities exist, today's rule would apply to zero dischargers who are not treating their wastes to this extent. Examples are facilities that have seepage impoundments or evaporation ponds (without concurrent treatment, as described above), or that spray irrigate without CWA-equivalent treatment of the wastewater. These facilities would not be within either the language or the policy of remanded § 268.3(b), and consequently would have to meet the treatment standards for ignitable and corrosive wastes adopted today before the decharacterized wastes are land disposed.

EPA solicits comment on this approach, in particular, if any more precise definition of CWA-equivalent treatment is needed. The Agency's view

at this time, however, is that attempting to quantify this standard beyond specifying that zero discharge facilities utilize the types of treatment that form the basis of the CWA standards and limitations would unnecessarily complicate an already complex set of regulations to little ultimate benefit.

## 2. Underground Injection Wells Other Than Class I

As discussed above, EPA reads the court's opinion as remanding, rather than vacating, rules pertaining to injection of decharacterized ignitable and corrosive wastes into Class I wells. However, because § 268.1(c)(3) only applies to Class I injection (see the reference in that regulation to 40 CFR 144.6(a)), the treatment standards for ignitable and corrosive wastes promulgated today apply when those wastes are injected into other than Class I wells even if the wastes are decharacterized first. Today's requirements thus may apply to some injection practices, in particular, those involving a limited number of Class V injection wells. These typically are wells injecting nonhazardous wastes above or into underground sources of drinking water. Class II wells, it has been suggested, could also be subject to today's rule if they were to inject decharacterized ignitable and corrosive wastes that are not drilling fluids, produced waters, and other wastes uniquely associated with the exploration, development, or production of crude oil, natural gas or geothermal energy, materials that are not hazardous wastes even at their point of generation (see § 261.4(b)(5) and 268.1(b)). (See discussion of this point in the next preamble section.)

The Agency notes, however, that if the ignitable and corrosive wastes injected into non-Class I wells were to be treated by CWA-equivalent means before injection, today's rule would not apply. Such facilities would be a type of zero discharge facility and, since they are treating by the same means as facilities discharging directly or indirectly, would not be immediately subject to today's rule, as explained above.

## F. Identification of Affected Facilities

Very limited data are available upon which to determine the number and types of facilities that will be impacted by this interim final rule. Estimates have been made, however, based primarily on information available from the states and the Biennial Reporting Survey (BRS) database for 1989. The problem is compounded by the fact that the facilities impacted may not all be

subject to any federal requirement through which information could be gathered.

### 1. Underground Injection Wells

The Agency has limited and conflicting information about how many Class V wells may be impacted, as well as the volumes and types of formerly characteristic waste injected in these wells, making it difficult to fully assess the need for relief, such as national capacity variances for these facilities. An estimate of the number of facilities that could potentially be impacted by this interim final rule is 100. The Agency believes that many of the Class V wells may fall under the Small Quantity Generator (SQG) exclusion and are conditionally exempt from the RCRA requirements, including the LDRs (see 268.1(e)(1)). From information gathered, and comments received on the Notice of Data Availability, EPA further believes that a number of the deep Class V wells treat their wastes prior to injection, and thus would not be affected by this rule if such a practice would qualify them as a CWA-equivalent facility. As an interim measure, however, the Agency is granting a national capacity variance extending the effective date of today's rule for nine months from the date of signature for decharacterized ignitable and corrosive wastes injected into Class V wells that do not engage in CWA-equivalent treatment before injection, in order for the facility to determine if it is impacted, to develop appropriate on-site modifications for alternative treatment, and to obtain off-site treatment or submit petitions for case-by-case capacity variances (see section IV of this preamble). The Agency also solicits additional information on the number of Class V wells, the types of wastes, and the volumes of such wastes injected. The Agency believes that it would be prudent for these Class V, and any other non-Class I, wells to apply for case-by-case extensions of the effective date during this nine-month period.

A number of companies extract elemental bromine from deep geologic formations, recover the bromine through ion exchange processes that change the pH of the brine to less than two, neutralize the pH to that of the original brine and reinject the spent solution into the original geologic formation. Because the reinjection process is classified as a Class V injection well, and because the brine's pH is changed to less than two during the process of extracting bromine, these companies raised the issue in their comments as to whether contemplated rules could affect these practices.

As described in the comments, these practices involve beneficiation and possibly mineral processing operations. (The Agency had insufficient information to determine whether the operations were totally beneficiation or also included some mineral processing.) In either case, the solution injected into the Class V wells would not be affected by today's rule. In particular, if these wastes were generated only from beneficiation operations, they would not be hazardous at the point of generation and thus, not affected by today's rule (see § 268.1(b)). If some of the wastes are generated from mineral processing operations, they still would not be affected by today's rule since these wastes (if hazardous) were not identified as hazardous until after 1984, and thus were not included within the scope of the Third Third rule (55 FR at 22667, June 1, 1990). Rather, treatment standards for these wastes—characteristic mineral processing wastes—will be promulgated in the future. The Agency is also aware of fundamental arguments as to whether brine reinjected in this manner is a solid waste. The Agency is not addressing this issue at this time.

After an examination and evaluation of the comments received on the Notice of Data Availability, the Agency believes that Class II UIC wells (see complete definition of Class II wells under 40 CFR 144.6(b)) injecting oil and gas exploration and production wastes are not newly impacted by this rule. While one commenter indicated that this rule would impact their injection of decharacterized ignitable and corrosive wastes into a Class II UIC well, the Agency disagrees. First, injection into Class II disposal wells of decharacterized wastes not covered by the exemption in § 261.4(b)(5) would violate existing UIC regulations. See § 146.5(b)(1) specifying which wastes may be injected into Class II disposal wells. Because the conduct is already illegal, EPA does not view today's rule as having any further regulatory impact on that conduct.

Second, injection of such wastes into Class II enhanced recovery wells might also be illegal. To be permissible, the injected materials must qualify as an "enhanced recovery fluid." To do so, the fluid "must function primarily to enhance recovery of oil and gas and must be recognized by the Agency as being appropriate for enhanced recovery." \* \* \* In this context, "primarily functions" means that the main reason for injecting the materials is to enhance recovery of oil and gas rather than to serve as a means for disposing of those materials." See Report to Congress;

Management of Wastes from the Exploration, Development, and Production of Crude Oil, Natural Gas, and Geothermal Energy; Volume 1 of 3; Oil and Gas, EPA/530-SW-88-003, December, 1987, p. II-18. The Agency gave produced waters as one example of materials appropriate for enhanced recovery. *Id.* In determining what fluids are appropriate, the Agency is of the view that fluids that are hazardous wastes at the point of injection would never meet the test. Decharacterized fluids might also fail to satisfy the test depending on their composition as well as the motivation for the injection. Since the commenter provided none of this information (or even indicated if the comment referred to injection in disposal or enhanced recovery wells), the Agency is unable to assess further whether today's rule might have any effect on these operations.

### 2. Combustion and Stabilization

Additionally, some of the wastes covered by this rule have been, and will continue to be, managed in combustion and stabilization devices. Upon promulgation of this rule, such facilities must treat the wastes to remove any hazardous characteristic and meet the treatment standards for any underlying hazardous constituents, prior to land disposal. EPA estimates that the number of such facilities that could potentially be impacted by this rule is approximately 340. Submittal of additional data and information characterizing the universe of facilities affected by this rule is encouraged. See section IV of this preamble for more information on these issues.

### G. Future Response to Issues Remanded by the Court Decision

The Agency plans to address issues which have been remanded by the court in future rulemakings. Many of these remanded issues are significantly more complex than those dealt with in this interim final rule regarding the vacated deactivation treatment standards. In addition, the universe of facilities affected by the remanded portions of the Third Third rule is much broader than that covered today, as it will include (among other things) treatment systems regulated under the CWA, Class I injection wells regulated under the SDWA, plus zero discharge facilities that are engaged in treatment that is equivalent to CWA dischargers. Furthermore, the volumes of wastes affected by the remanded rules are much greater than those at issue in this regulation (one estimate is that Class I injection wells dispose more than 6

billion gallons of hazardous waste per year).

It is important that facilities that will be impacted in the future by the remanded portions of the court's decision begin immediately to plan and take actions that will help the facility comply with the new treatment standards for ignitable, corrosive, and reactive wastes consistent with the court's decision. Options for addressing these issues were presented in the Supplemental Information Report prepared for the January 19 Notice of Data Availability. The court vacated the deactivation treatment standard for ignitable and corrosive wastes, instructing EPA to develop treatment standards for the hazardous constituents in ignitable and corrosive (and by natural extension of the logic, in reactive) wastes.

Also, it is clear that the court intends for the Agency to address the special dilution provisions for CWA and SDWA Class I injection wells, specifying that dilution alone is not adequate treatment if an ignitable, corrosive, (and, presumably, reactive) waste contains underlying hazardous constituents. This will potentially greatly impact the injection of these wastes in deep wells, since there are few treatment systems currently in place upstream of the injection well that could treat underlying hazardous constituents, if present. Such facilities seem to have few options for dealing with the court's decision: undertaking substantial waste minimization efforts; installing on-site treatment systems; arranging for off-site transport and treatment; or, applying for, and being granted, a no-migration petition that would allow continued land disposal of untreated wastes. Although commenters suggest that EPA can promulgate a rule that does not require treatment of underlying hazardous constituents, based on a generic finding that injection is a protective practice, the Agency's tentative view is that this is not a viable option (see Supplemental Information Report, pp. 25-7). However, the Agency seeks additional comments on the technical and legal issues raised in this notice.

Probably the biggest issue for CWA wastewater treatment facilities will be that of demonstrating the equivalency of CWA treatment systems with RCRA LDR treatment. Associated issues such as whether the opinion authorizes controls on leakage or volatilization from treatment surface impoundments, or whether sludges generated in impoundments must be treated, may be especially difficult to resolve, even though the court's opinion stated that

RCRA LDR requirements should make some accommodations to allow continued treatment of these wastes in CWA treatment systems. EPA will consider the extensive comments on the equivalency demonstration and associated issues as the Agency develops an approach for future proposed rules.

## II. Overview of the Interim Final Rule

The Agency is promulgating revised treatment standards for certain ignitable and corrosive wastes that are not managed: (1) In centralized wastewater treatment systems subject to the CWA or in Class I underground injection wells subject to the SDWA Underground Injection Control (UIC) program; or, (2) by a zero discharger with a wastewater treatment system equivalent to that utilized by CWA dischargers prior to land disposal. The treatment standards promulgated in this interim rule retain the requirement of deactivation to remove the hazardous characteristic (see DEACT in Table 1, 40 CFR 268.42); however, this rule also sets numerical treatment standards for the underlying hazardous constituents that may be present in the wastes. EPA is also promulgating alternative treatment standards of incineration, fuel substitution, and recovery of organics for ignitable wastes.

In addition, changes have been made in the format of 40 CFR 268.42, Table 2, that simplify the way the treatment standards appear, and thus simplify compliance monitoring. The various D001 and D002 subcategories that have appeared in Table 2 since promulgation of the Third Third rule are combined, so that now there are only three D001 subcategories and two D002 subcategories. In particular, for D001 wastes, EPA has broken the subcategories into: The 40 CFR 261.21(a)(1) High TOC Ignitable Liquids Subcategory (greater than 10% total organic carbon)—the court decision had no impact on this treatability group; D001 wastes that include all descriptions at 40 CFR 261.21 except for the § 261.21(a)(1) High TOC Ignitable Liquids Subcategory managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems; and, D001 wastes that include all descriptions at 40 CFR 261.21 except for the § 261.21(a)(1) High TOC Ignitable Liquids Subcategory managed in managed in CWA/CWA-equivalent/Class I SDWA systems.

Furthermore, new precautionary measures are being established in the LDR regulations in 40 CFR 268 to prevent emissions of volatile organic constituents or violent reactions during the process of diluting ignitable and

reactive wastes. All are described in detail in subsequent sections of this preamble.

Finally, the Agency is granting a three-month national capacity variance that extends the effective date until August 9, 1993, for persons affected by this interim final rule, and an additional extension for those persons who manage ignitable or corrosive wastes and dispose of them in Class V UIC wells, which facilities are not performing CWA-equivalent treatment before injection, that extends the effective date until February 10, 1994. These extensions are necessary because the Agency realizes that even where sufficient treatment capacity exists, it may not be immediately available. See section IV of this preamble for additional information on these capacity extensions.

## III. Treatment Standards for Ignitable and Corrosive Wastes

### A. Overview of Treatment Standards for Ignitable and Corrosive Wastes Not Disposed in CWA or SDWA Facilities or That Do Not Engage in CWA-Equivalent Treatment Prior to Land Disposal

The Agency is promulgating revised treatment standards for certain ignitable (D001) and corrosive (D002) wastes. (See list of applicable waste streams below.) The revised standards retain the requirement to remove the hazardous characteristic (i.e., the deactivation treatment standard (DEACT) remains applicable); it also requires that the waste be treated so that each underlying hazardous constituent in the waste meets the same concentration-based treatment standard promulgated for that constituent in the treatment standards for F039 wastewaters and nonwastewaters. (F039 is the hazardous waste code for liquids that have percolated through land disposed wastes (i.e., leachate) resulting from the disposal of more than one listed hazardous waste. See 40 CFR 261.31.)

By means of incorporating the F039 treatment standards into the treatment standards for certain ignitable (D001) and corrosive (D002) wastes, this rule allows the Agency to address any and all of those constituents regulated elsewhere in the Land Disposal Restrictions program with concentration-based treatment standards. Table III-1 presents these



concentrations for the reader's convenience.

- D001—Ignitable Liquids based on 261.21(a)(1)—Wastewaters.
- D001—Ignitable Liquids based on 261.21(a)(1)—Low TOC Ignitable Liquids Subcategory—Less than 10% total organic carbon (Nonwastewaters).
- D001—Ignitable Reactives based on 261.21(a)(2) (Nonwastewaters).
- D001—Ignitable Compressed Gases based on 261.21(a)(3) (Nonwastewaters).
- D001—Oxidizers based on 261.21(a)(4) (Wastewaters and Nonwastewaters).
- D001—Acid Subcategory based on 261.22(a)(1) with Ph less than or equal to 2 (Wastewaters and Nonwastewaters).
- D002—Alkaline Subcategory based on 261.22(a)(1) with Ph greater than or equal to 12.5 (Wastewaters and Nonwastewaters).
- D002—Other Corrosives based on 261.22(a)(2) (Wastewaters and Nonwastewaters).

#### B. The Basis of the Numerical Treatment Standards

While the Court agreed that deactivation by any means to remove the characteristic property normally was appropriate treatment, the Court held that because hazardous constituents could be present in these wastes at concentrations of concern, the deactivation standard alone did not fully comply with RCRA section 3004(m). Consequently, EPA is now promulgating a treatment standard that retains the requirement of deactivation to remove the hazardous characteristic (i.e., DEACT) and that also sets numerical treatment standards for the hazardous constituents that may be present in D001 and D002 wastes. The numerical treatment standards for organics are established based on whether the residues are wastewaters (with total limits expressed in mg/L) or nonwastewaters (with total limits expressed in mg/Kg). The numerical treatment standards for metals are established based on whether the residues are wastewaters (with total limits expressed in mg/L) or nonwastewaters (with TCLP limits expressed in mg/L). Constituent-specific concentration limits allow a certain degree of freedom in selecting the most effective, practical and economical means of achieving compliance through treatment and/or waste minimization.

The Agency has already promulgated numerical treatment standards for organics that EPA believes are achievable for most RCRA hazardous wastes. The Third Third final rule, along with revisions promulgated on August 18, 1992 (57 FR 37203-37206), established numerical treatment standards for organics that were

essentially applied universally to most RCRA waste codes. The treatment standards promulgated in today's rule for D001 and D002 wastes are based on a transfer of these same treatment data and are represented by the existing standards for F039. As such, the new standards for D001 and D002 wastes are essentially a compilation of all earlier treatment standards and include virtually every RCRA hazardous constituent that can be routinely analyzed by existing analytical methods, (i.e., a set of approximately 200 constituents).<sup>2</sup> Table III-1 at the end of this section tabulates these wastewater and nonwastewater numerical standards.

EPA evaluated treatability data for nonwastewaters and wastewaters that are currently available for each hazardous constituent. The resulting set of treatment standards reflect EPA's preference for data from full-scale operations over data from pilot- or bench-scale units, and for processes treating high concentration, difficult-to-treat wastes. The Final BDAT Background Document for U and P Wastes and Multisource Leachate, Volumes A and C, explain on a constituent-by-constituent basis how each wastewater and nonwastewater standard, respectively, was calculated.

EPA developed the wastewater treatment standards using constituent-specific data from treatment of both RCRA and non-RCRA wastewaters. These performance data were from three major sources: (1) Industrial waste treatment data generated by the Office of Water in the Effluent Guidelines development effort; (2) data from EPA's Office of Research and Development Wastewater Treatment Database, a compilation of treatability research results reported in the technical literature; and, (3) industry-generated data submitted to EPA for the purpose of providing data for the Third Third rule. Activated sludge and other forms of biological treatment were the technologies most frequently used as the basis of the treatment standards for organic constituents. Granulated and powdered activated carbon, steam and air stripping, and wet-air and chemical oxidation were also utilized to establish standards for certain organics. Standards for metals were generally based on lime precipitation followed by sedimentation and filtration.

<sup>2</sup> While the Agency is establishing treatment standards for approximately 200 hazardous constituents, as discussed later in this preamble, compliance with the treatment standards will be met for those hazardous constituents reasonably expected to be present in the ignitable and/or corrosive waste.

EPA developed the nonwastewater treatment standards using constituent-specific data from treatment of primarily RCRA wastes. Most data were from the analysis of ash residues from the incineration of 14 different waste types.

#### C. Alternative Standards for Ignitable Wastes

For D001 wastes, EPA is also promulgating alternative standards of incineration (INCIN), fuel substitution (FSUBS) and recovery of organics (RORGS). EPA previously promulgated these same standards as BDAT for D001 nonwastewaters in the High TOC Ignitable Liquids Subcategory. Therefore, this is simply an extension of an existing provision for these methods to serve as standards for these wastes and does not reflect any change in EPA's preference for establishing constituent-specific concentration levels rather than treatment methods as the LDR treatment standards. Since low TOC nonwastewaters and the D001 wastewaters would necessarily contain lower concentrations of organics than the D001 nonwastewaters in the high TOC Subcategory, treatment methods based on high temperature thermal destruction (i.e., INCIN and FSUBS) would be expected to achieve similar performance for the hazardous organic constituents present in these other D001 wastes. Also, while the recovery of organics from D001 wastewaters that necessarily contain lower concentrations of organics may be technically more difficult and somewhat less economically desirable than recovery from D001 wastes with higher concentrations of organics, the Agency does not want to discourage on-going environmentally sound recovery practices such as steam stripping, oil-water separation, and distillation that are currently being performed. Additionally, all of these specified methods will remove the D001 characteristic of ignitability.

Because the emissions from thermal technologies are regulated under 40 CFR part 264, subpart O, or 40 CFR part 266, subpart H, and the Agency wants to encourage environmentally sound resource conservation, the Agency finds INCIN, RORGS and FSUBS to be acceptable interim alternatives to the numerical treatment standards, notwithstanding the Agency's preference for numerical treatment standards. Therefore INCIN, RORGS and FSUBS are being promulgated in today's rule as an alternative to compliance with the DEACT plus numerical standards until the Agency can complete a more thorough investigation on the need to apply the numerical

standards to the residues. The treater or generator has, for the interim, the option of choosing either regulatory alternative.

There are advantages to either means of compliance. Using the specified methods reduces the need for costly compliance monitoring. Using the numerical standards (along with deactivation of the characteristic) allows more freedom in selecting treatment technologies. As a general matter, the Agency heard in the LDR Evaluation Project Roundtable meeting<sup>3</sup> held January 12-14, 1993, there is a need for more efficient and meaningful monitoring to demonstrate compliance with the numerical treatment standards. EPA is assessing broad-based changes to the LDR monitoring requirements and intends to address this issue in upcoming notices of proposed rulemaking.

#### *D. Alternatives Discussed in the Supplemental Information Report*

EPA considered mandating the use of particular treatment technologies (such as those identified in appendix VI to part 268) as a means of regulating the hazardous constituents for all ignitable, corrosive, and reactive (ICR) wastes. This approach appears unnecessarily complicated and the Agency concluded it would lead to unnecessary and potentially burdensome controls and governmental review. In many cases, specifying treatment methods would require establishing surrogate or

indicator parameters for compliance monitoring to ensure treatment of the hazardous constituents. Then, all the generators and treaters would be required to identify and verify that the surrogate parameters were indeed indicators of treatment for the hazardous constituents present.

In addition, for wastes containing both metal and organic constituents, specifying single types of treatment does not necessarily result in treatment of all of the constituents that are present. While EPA could have designated a treatment train, i.e., a specified sequence of treatment processes, as a method of treatment, situations could arise where wastes containing only a single type of hazardous constituent would, then, be overregulated requiring unnecessary and costly treatment.

EPA also considered specifying the methods that were considered BDAT during the development of the treatment standards for each individual hazardous constituent. However, the above-mentioned problems with specifying methods remained and new ones appeared; for example: specific on-site technical and engineering decisions, including the possibility of Agency review and approval on the proper sequencing of treatment units would have been necessary; additional sequencing decisions dependent upon the types and concentrations of hazardous constituents present would have to have been made; and whenever

new constituents or wastes were introduced, the sequence decisions would have to be reviewed and reapproved.

As such, EPA believes that constituent-specific numerical treatment standards ensure treatment of the hazardous constituents more efficiently (on a regulatory basis) than the approach of mandating the use of specific technologies. Most of the commenters agreed. Although the alternative standards, FSUBS, INCIN and RORGS are appropriate as interim standards pending EPA's subsequent development of treatment standards reflecting a more thorough evaluation of these waste streams, they are a special case reflecting the need to respond promptly to the court by instituting adequate treatment standards for the hazardous constituents in these wastes. Additional reasons supporting the FSUBS, INCIN and RORGS options are discussed in section C immediately preceding this section.

EPA continues to prefer constituent-specific numerical treatment standards whenever possible. Setting numerical standards also provides for the encouragement of innovative technologies and practices to achieve these limits. This also encourages the use of source reduction techniques to reduce the overall loading of hazardous constituents into these wastes as alternative and cost-effective means of compliance.

TABLE III-1.—REGULATED CONSTITUENTS AND STANDARDS

Constituent	Wastewater (mg/l)	Nonwastewater (mg/kg)
Acetone .....	0.28	160
Acenaphthalene .....	0.059	3.4
Acenaphthene .....	0.059	4.0
Acetonitrile .....	0.17	NA
Acetophenone .....	0.010	9.7
2-Acetylaminofluorene .....	0.059	140
Acrolein .....	0.29	NA
Acrylonitrile .....	0.24	84
Aldrin .....	0.021	0.066
4-Aminobiphenyl .....	0.13	NA
Aniline .....	0.810	14
Anthracene .....	0.059	4.0
Aramite .....	0.36	NA
Aroclor 1016 .....	0.013	0.92
Aroclor 1221 .....	0.014	0.92
Aroclor 1232 .....	0.013	0.92
Aroclor 1242 .....	0.017	0.92
Aroclor 1248 .....	0.013	0.92
Aroclor 1254 .....	0.014	1.8
Aroclor 1260 .....	0.014	1.8
alpha-BHC .....	0.00014	0.066
beta-BHC .....	0.00014	0.066

<sup>3</sup> The LDR Evaluation Project Roundtable meeting was held with EPA regional and State regulators, an environmental group, the waste management industry, and the regulated community. The main intention of the meeting was to provide these

persons an opportunity to comment on various aspects of the LDR program, and to offer suggestions on how the program could be improved. A summary of the Roundtable proceedings is available in the RCRA Docket, number F-92-CD2F-SO144.

TABLE III-1.—REGULATED CONSTITUENTS AND STANDARDS—Continued

Constituent	Wastewater (mg/l)	Nonwastewater (mg/kg)
delta-BHC	0.023	0.066
gamma-BHC	0.0017	0.066
Benzene	0.140	36
Benzo (a) anthracene	0.059	8.2
Benzo (b) fluoranthene	0.055	3.4
Benzo (k) fluoranthene	0.059	3.4
Benzo (g,h,i) perylene	0.0055	1.5
Benzo (a) pyrene	0.061	8.2
Bromodichloromethane	0.35	15
Bromoform	0.63	15
Bromomethane (methyl bromide)	0.11	15
4-Bromophenyl phenyl ether	0.055	15
n-Butanol (n-Butyl alcohol)	5.6	2.6
Butyl benzyl phthalate	0.017	7.9
2-sec-Butyl-4,6-dinitrophenol	0.066	2.5
Carbon tetrachloride	0.057	5.6
Carbon disulfide	0.014	NA
Chlordane	0.0033	0.13
p-Chloroaniline	0.46	6
Chlorobenzene	0.057	5.7
Chlorobenzilate	0.10	1A
2-chloro-1,3-butadiene	0.057	1A
Chlorodibromomethane	0.057	15
Chloroethane	0.27	6.0
bis-(2-Chloroethoxy) methane	0.036	7.2
bis-(2-Chloroethyl) ether	0.033	7.2
Chloroform	0.046	3.6
bis-(2-Chloroisopropyl) ether	0.055	7.2
p-Chloro-m-cresol	0.018	4
Chloromethane (methyl chloride)	0.19	33
2-Chloronaphthalene	0.055	5.6
2-Chlorophenol	0.044	5.7
3-Chloropropene	0.036	8
Chrysene	0.059	8.2
o-Cresol	0.11	5.6
Cresol (m- and p- isomers)	0.77	3.2
Cyclohexanone	0.36	1A
1,2-Dibromo-3-Chloropropane	0.11	5
1,2-Dibromoethane (Ethylene dibromide)	0.028	5
Dibromomethane	0.11	5
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.72	10
o,p-DDD	0.023	0.087
p,p-DDD	0.023	0.087
o,p-DDE	0.031	0.087
p,p-DDE	0.031	0.087
o,p-DDT	0.0039	0.087
p,p-DDT	0.0039	0.087
Dibenzo(a,h) anthracene	0.055	8.2
Dibenzo(a,e)pyrene	0.061	NA
m-Dichlorobenzene	0.036	3.2
o-Dichlorobenzene	0.088	3.2
p-Dichlorobenzene	0.090	6.2
Dichlorodifluoromethane	0.23	7.2
1,1-Dichloroethane	0.059	7.2
1,2-Dichloroethane	0.21	7.2
1,1-Dichloroethylene	0.025	33
trans-1,2-Dichloroethylene	0.054	33
2,4-Dichlorophenol	0.044	14
2,6-Dichlorophenol	0.044	14
1,2-Dichloropropane	0.85	18
cis-1,3-Dichloropropene	0.036	18
trans-1,3-Dichloropropene	0.036	18
Dieldrin	0.017	0.13
Diethyl phthalate	0.20	28
2,4-Dimethyl phenol	0.036	14
Dimethyl phthalate	0.047	28
Di-n-butyl phthalate	0.057	28
1,4-Dinitrobenzene	0.32	2.3
4,6-Dinitrocresol	0.28	160
2,4-Dinitrophenol	0.12	160
2,4-Dinitrotoluene	0.32	140
2,6-Dinitrotoluene	0.55	28

TABLE III-1.—REGULATED CONSTITUENTS AND STANDARDS—Continued

Constituent	Wastewater (mg/l)	Nonwastewater (mg/kg)
Di-n-octyl phthalate .....	0.017	28
Di-n-propylnitrosoamine .....	0.40	14
Diphenyl aniline .....	0.52	NA
1,2-Diphenyl hydrazine .....	0.087	NA
Diphenylnitrosamine .....	0.40	NA
1,4-Dioxane .....	0.12	170
Disulfoton .....	0.017	6.2
Endosulfan I .....	0.023	0.066
Endosulfan II .....	0.029	0.13
Endosulfan sulfate .....	0.029	0.13
Endrin .....	0.0028	0.13
Endrin Aldehyde .....	0.025	0.13
Ethyl acetate .....	0.34	33
Ethyl benzene .....	0.057	6.0
Ethyl cyanide .....	0.24	360
Ethyl ether .....	0.12	160
bis-(2-Ethylhexyl) phthalate .....	0.28	28
Ethyl methacrylate .....	0.14	160
Ethylene oxide .....	0.12	NA
Famphur .....	0.017	15
Fluoranthene .....	0.068	8.2
Fluorene .....	0.059	4.0
Fluorotrichloromethane .....	0.020	33
Heptachlor .....	0.0012	0.066
Heptachlor epoxide .....	0.016	0.066
Hexachlorobenzene .....	0.055	37
Hexachlorobutadiene .....	0.055	28
Hexachlorocyclopentadiene .....	0.057	3.6
Hexachlorodibenzo-furans .....	0.000063	0.001
Hexachlorodibenzo-p-dioxins .....	0.000063	0.001
Hexachloroethane .....	0.055	28
Hexachloropropene .....	0.035	28
Indeno (1,2,3-c,d) pyrene .....	0.0055	8.2
Iodomethane .....	0.19	65
Isobutanol .....	5.6	170
Isodrin .....	0.021	0.066
Isosafrole .....	0.081	2.6
Kapone .....	0.0011	0.13
Methacrylonitrile .....	0.24	84
Methanol .....	5.6	NA
Methapyrilene .....	0.081	1.5
Methoxychlor .....	0.25	0.18
3-Methylcholanthrene .....	0.0055	15
4,4-Methylene-Bis-(2-chloroaniline) .....	0.50	35
Methylene chloride .....	0.089	33
Methyl ethyl ketone .....	0.28	36
Methyl isobutyl ketone .....	0.14	33
Methyl methacrylate .....	0.14	160
Methyl methanesulfonate .....	0.018	NA
Methyl parathion .....	0.014	4.6
Naphthalene .....	0.059	3.1
2-Naphthylamine .....	0.52	NA
p-Nitroaniline .....	0.028	28
Nitrobenzene .....	0.068	14
5-Nitro-o-toluidine .....	0.32	28
4-Nitrophenol .....	0.12	29
N-Nitrosodiethylamine .....	0.40	28
N-Nitrosodimethylamine .....	0.40	NA
N-Nitroso-di-n-butylamine .....	0.040	17
N-Nitrosomethylethylamine .....	0.040	2.3
N-Nitrosomorpholine .....	0.040	2.3
N-Nitrosopiperidine .....	0.013	35
N-Nitrosopyrrolidine .....	0.013	35
Parathion .....	0.014	4.6
Pentachlorobenzene .....	0.055	37
Pentachlorodibenzo-furans .....	0.000063	0.001
Pentachlorodibenzo-p-dioxins .....	0.000063	0.001
Pentachloronitrobenzene .....	0.055	4.8
Pentachlorophenol .....	0.089	7.4
Phenacetin .....	0.081	16
Phenanthrene .....	0.059	3.1
Phenol .....	0.039	6.2

TABLE III-1.—REGULATED CONSTITUENTS AND STANDARDS—Continued

Constituent	Wastewater (mg/l)	Nonwastewater (mg/kg)
Phorate .....	0.021	4.6
Phthalic anhydride .....	0.069	NA
Pronamide .....	0.093	1.5
Pyrene .....	0.067	8.2
Pyridine .....	0.014	16
Safrole .....	0.081	22
Silvex (2,4,5-TP) .....	0.72	7.9
2,4,5-T .....	0.72	7.9
1,2,4,5-Tetrachlorobenzene .....	0.055	19
Tetrachlorodibenzo-furans .....	0.000063	0.001
Tetrachlorodibenzo-p-dioxins .....	0.000063	0.001
1,1,1,2-Tetrachloroethane .....	0.057	42
1,1,2,2-Tetrachloroethane .....	0.057	42
Tetrachloroethylene .....	0.056	5.6
2,3,4,6-Tetrachlorophenol .....	0.030	37
Toluene .....	0.080	28
Toxaphene .....	0.0095	1.3
1,2,4-Trichlorobenzene .....	0.055	19
1,1,1-Trichloroethane .....	0.054	5.6
1,1,2-Trichloroethane .....	0.054	5.6
Trichloroethylene .....	0.054	5.6
2,4,5-Trichlorophenol .....	0.18	37
2,4,6-Trichlorophenol .....	0.035	37
1,2,3-Trichloropropane .....	0.85	28
1,1,2-Trichloro-1,2,2-trifluoroethane .....	0.057	28
Tris(2,3-dibromopropyl) phosphate .....	0.11	NA
Vinyl chloride .....	0.27	33
Xylene(s) .....	0.32	28
Cyanides (Total) .....	1.2	1.8
Cyanides (Amenable) .....	0.86	NA
Fluoride .....	35	NA
Sulfide .....	14	NA
Antimony .....	1.9	10.23
Arsenic .....	1.4	15.0
Barium .....	1.2	152
Beryllium .....	0.82	NA
Cadmium .....	0.20	10.066
Chromium (Total) .....	0.37	15.2
Copper .....	1.3	NA
Lead .....	0.28	10.51
Mercury .....	0.15	10.025
Nickel .....	0.55	10.32
Selenium .....	0.82	15.7
Silver .....	0.29	10.072
Thallium .....	1.4	NA
Vanadium .....	0.042	NA
Zinc .....	1.0	NA

<sup>1</sup> These concentrations are expressed in mg/l and are measured through an analysis of TCLP extract; all others measured through a total waste analysis.

#### *E. Changes in Treatability Group Are Not a New Point of Generation for Purposes of Today's Rule*

Treatment of a wastewater often generates a nonwastewater sludge as well as a treated wastewater. Similarly, incineration of a wastewater can generate a nonwastewater (ash) as well as a wastewater (scrubber water) residue. The issue under discussion here is whether these residues that are different treatability groups require further treatment. The Agency has approached this issue differently for listed and characteristic wastes. Under the "derived-from" rule, residues generated from the treatment of listed

wastes are subsequently managed as the listed waste; thus treatment must continue until the LDR treatment standards are achieved as measured in the treatment residue.

No derived-from rule applies to characteristic wastes, however. In the Third Third final rule, EPA stated that for characteristic wastes, each change of treatability group in a treatment train marked a new point of generation for determining if a characteristic waste was prohibited from land disposal (55 FR 22661-62). Thus, if a characteristic wastewater were treated and generated a sludge (a nonwastewater) that did not exhibit a characteristic, the sludge would not be subject to any prohibition.

This issue was discussed in the Supplemental Information Report prepared for the Notice of Data Availability published on January 19, 1993 (see Supplemental Information Report, pp. 41-2). It was explained that this principle made sense in the context of the Third Third rule where the treatment standard for most characteristic wastes was deactivation. Now that the court has directed EPA to set standards for the underlying hazardous constituents in wastes that are deactivated, the Agency is reexamining this principle. EPA solicited comment in the Supplemental Information Report on how much force the change of treatability group



principle retains after the court's opinion.

Several commenters addressed this issue by saying that EPA should reaffirm its prior pronouncements on the rules governing changes in treatability groups. Some suggested that if changes were necessary, they would be better made in the context of changes in the dilution provisions of 40 CFR 268.3, when the remanded portions of the court opinion are considered in the future.

On the other hand, other commenters argued that the only way to be consistent with the court's direction to minimize threats to human health and the environment from hazardous constituents is to apply BDAT standards to treatment residues. They said that such an approach would remove subjectivity and questions about compliance with the LDR treatment standards.

For wastes addressed in this interim final rule and treated in combustion and other devices, the Agency is adopting an approach where the LDR treatment standards attach at the point of generation of the original ignitable or corrosive waste. Residues that derive from the treatment of the original ignitable or corrosive waste would be subject to either the wastewater or nonwastewater F039 treatment standards, based on the physical form of the residue. (There is no requirement, however, to measure residues for D001 waste when a method of treatment has been established as an alternative standard and that method has been used.)

The Agency is taking this approach in today's rule in part because of the exigent need to issue an emergency rule, and the consequent lack of time to try and develop an alternative. In addition, EPA expects that combustion processes will be the principal type of technology utilized to comply with the wastes affected by today's rule, and the principal treatment residue left from combustion treatment is an ash (a nonwastewater), leaving that ash as the only logical thing to test to determine that the treatment standards have been satisfied. To the extent that an ignitable or corrosive wastewater is being disposed in a land disposal unit that is not part of a system regulated under the CWA, a zero discharger that is not treating the wastewater by CWA-equivalent treatment, or injecting in other than a Class I underground injection well system, this also should not be an issue since the treatment standards, including those for the underlying hazardous constituents, must be met before the wastewater is land disposed.

EPA emphasizes that it is making no decision, and establishing no precedent, on the issue of whether nonwastewater residues from wastewater treatment, such as wastewater treatment sludges, require further treatment when such nonwastewater residues are not hazardous waste when they are generated (see Supplemental Information Report, pp. 23-5). As a legal matter, the court did not directly decide the issue, and the Agency's rules established in the Third Third rule were not challenged. In addition, the effectiveness of a wastewater treatment system is most appropriately determined by monitoring the effluent wastewater, unlike the situation with combustion technology where treatment of a wastewater or nonwastewater is most appropriately measured by testing an ash (a nonwastewater).

#### F. Minimize Threat Levels

The treatment standards adopted today are based on the performance of available treatment technologies. This approach to establishing treatment standards was upheld in *Hazardous Waste Treatment Council v. EPA*, 886 F. 2d 355, 361-62 (D.C. Cir. 1989), cert. denied, 111 S. Ct. 139 (1990) (*HWTC III*). The levels of the treatment standards are, of course, constrained by the requirement that the standards not be lower than the level at which threats to human health and the environment are minimized. Section 3004(m)(1); *HWTC III*, 886 F. 2d at 363; *Third Third Opinion*, 976 F. 2d at 14. It was not possible to develop such levels in today's rule because of the need to issue this as an emergency rule. However, the Agency will continue to evaluate various approaches for setting such minimize threat levels and, as appropriate, propose them in future rulemakings. The Agency solicits technical and factual information that could aid in defining the minimize threat levels.

#### G. Compliance Monitoring Requirements

As noted in the Supplemental Information Report, one concern with implementing numerical treatment standards for the ignitable (D001) and corrosive (D002) wastes is which hazardous constituents must be monitored to determine compliance and the frequency of such monitoring. The treatment standards that are being promulgated (in addition to the existing deactivation treatment standard) for D001 wastes (other than the D001 high TOC subcategory, which is unaffected by today's rule), and D002 wastes, set numerical limits for over 200

constituents. Since each facility's ignitable or corrosive wastes likely will contain only a subset of these hazardous constituents, it seems unnecessary and wasteful to routinely require monitoring of all constituents. Therefore, compliance with the treatment standards promulgated in this rule for ignitable and corrosive wastes must be monitored for only those hazardous constituents "reasonably expected to be present" in the hazardous waste.

The determination of "reasonably expected to be present" for compliance purposes may be based on knowledge of the raw materials used, the process, and potential reaction products, or the results of a one-time analysis for the entire list of F039 hazardous constituents that may be present in the untreated hazardous waste. If a one-time analysis of the entire list of F039 hazardous constituents is conducted, subsequent analyses would be required for only those pollutants which would reasonably be expected to be present in the waste as generated, based on the sampling and analysis results.

This approach is similar to that developed in the Third Third final rule for measuring compliance with multi-source leachate (F039) standards (55 FR 22620, 22621). (However, this approach for determining which constituents are present in the waste is not necessarily the approach that will be taken in future rulemakings when the remanded rules are addressed.) If the facility is permitted under RCRA, and the facility's Waste Analysis Plan requires modification to accomplish this, the Plan may be modified through a Class 1 permit modification with prior approval. (See amendment to 40 CFR 270.42 promulgated as part of today's rule. See also 55 FR 22621 explaining why it is reasonable to use Class I modification procedures.) If the facility is not permitted under RCRA, the results of the one-time analysis for all hazardous constituents and any other relevant information should be kept in the facility's files. See 40 CFR 268.9, 268.7(b)(5), and discussion at section I below. Generators covered by the rule utilizing § 262.34 tanks for treating the wastes may also amend their waste analysis plans prepared pursuant to § 268.7(a)(4). Changes in waste generation should be documented in the facility files; furthermore, it is recommended that another analysis of the F039 list of hazardous constituents be made. Commenters generally supported such an approach.

## *H. Addressing Potential VOC Emissions and Violent Reactions During Dilution of Ignitable and Reactive Wastes*

### **1. Potential VOC Emissions During Dilution of Ignitable Wastes— Background and Comments**

The court held that EPA must address the problem of VOC (volatile organic constituents) emissions from ignitable waste during dilution. The court pointed out that the Agency had initially proposed in the Third Third to prohibit dilution of all ignitable wastes because of the risk of VOC emissions during dilution. Furthermore, the court stated that EPA had presented inadequate justification in the final rule not to control emissions during dilution of ignitable wastes. Thus, in vacating the standard, the court invited the Agency to justify non-regulation with evidentiary support or require actions to minimize the risk. 976 F.2d at 17.

As was explained in the Supplemental Information Report, the Agency has reconsidered its premise set forth in the proposed Third Third rule (see Supplemental Information Report, pp. 34-5). In most cases, whatever the risk of VOC emissions from ignitable wastes is, it is not increased during the dilution process. Nor does dilution normally pose a risk of VOC emission greater than that posed by other methods of treating these wastes. In the Supplemental Information Report, the Agency also pointed out, however, that there are instances where diluting certain wastes could cause exothermic reactions that would increase volatilization or acid misting. *Id.* Furthermore, even in situations where emissions are not increased during the dilution process, the wastewater treatment system may still pose risks due to emissions. EPA solicited comments on these issues.

A few commenters responded. The Chemical Manufacturers Association and others agreed with EPA that in most cases the risk of VOC emissions from ignitable wastes is not increased during the dilution process. No commenter disagreed with EPA's tentative conclusion.

### **2. Potential Violent Reactions During Dilution of Reactive Wastes— Background and Comments**

In the proposed Third Third rule, EPA stated that dilution of reactive wastes should not automatically be considered a legitimate form of treatment (54 FR at 48426). The preamble discussion indicated that most reactive wastes cannot be diluted without violent reaction, and thus concluded that dilution is not a viable management

alternative for these wastes. The Agency took a different position in the final rule (i.e., many reactive wastes should be diluted with some type of liquid, such as kerosene, in the case of water reactive wastes, in order to safely transport such wastes to incineration or chemical treatment); however, the court looked primarily at the proposal in reaching its conclusion, saying that while there seemed to be no toxicity concern with these wastes, any treatment standard written for these wastes must curb the risk of violent reaction during treatment. 976 F.2d at 18.

As was explained in the Supplemental Information Report, because of their very nature, reactive wastes are typically handled carefully to avoid violent reaction such as explosion. It is logical that workers are very careful with such wastes and take precautions against any risk of reaction, whether through dilution or other practices, to protect their health and very life. Comments were solicited on whether dilution is any more risky than other waste management practices for reactive wastes. Comments were also solicited on other types of controls that may be in place under OSHA and Department of Transportation requirements, or even under local fire codes, and whether such controls may be adequate to address the potential for violent reactions during dilution.

Commenters stated that in any situation where these wastes are deactivated by reaction with water, generators are already appropriately regulated under other statutes, including the Bureau of Alcohol, Tobacco, and Firearms regulations at 27 CFR 55, OSHA process safety management standards at 29 CFR 1710.119, and the chemical process safety standards of section 304 of the Clean Air Act. In addition, comments provided by members of the Chemical Manufacturers Association (CMA) indicate that reactive wastes are not commonly managed by dilution, and generators are highly motivated to prevent explosions and fires by concerns about employee and community safety, business continuity, and cost. Other commenters pointed out, as EPA did in the final Third Third rule, that dilution of some types of reactive wastes is the best means of removing the reactivity property (55 FR at 22553).

### **3. Final Approach**

The Agency is adopting in this interim final rule an approach to address the potential for increased emissions during the process of dilution of ignitable wastes and for violent

reactions during dilution of reactive wastes, the two principal risks potentially warranting extra control. The Agency is modifying 40 CFR 268 to require that the general facility standards set out at 40 CFR 264.17(b) and 265.17(b) for permitted and interim status facilities be met during dilution of ignitable or reactive characteristic wastes. These standards require persons managing ignitable or reactive wastes to take the necessary precautions to prevent reactions which generate extreme heat or pressure, fire or explosions, or violent reactions, produce uncontrolled toxic mists, fumes, dusts, or gases in harmful concentrations, or produce uncontrolled flammable fumes or gases that could pose risk of fire or explosion. As noted above, facilities not already subject to these requirements should be complying with them by virtue of meeting OSHA requirements, fire codes, or other safety-related requirements.

Dilution of reactive or ignitable wastes could take place in wastewater treatment tanks that are presently exempt from subtitle C regulation pursuant to §§ 264.1(g)(6) and 265.1(c)(10). We are making this exemption contingent on satisfying the performance standard in § 264.17(b) and 265.17(b)). This obviously does not mean that such units become subject to any other type of subtitle C standard. Nor does it mean that these units necessarily lose their subtitle C-exempt status in the unlikely event of an explosion due to lack of precautions when diluting ignitable or reactive wastes. It only means that owners and operators of such units must take precautions when they use them to dilute ignitable and reactive wastes. In addition, because the Agency believes that almost all facilities managing these wastes in exempt tanks will take (and are already taking) proper precautions, and because it will ordinarily be readily apparent when such precautions are not taken, EPA is taking the unusual step of not adopting any type of recordkeeping requirement to document compliance with this new requirement.

### **I. Notification Requirements**

#### **1. Constituents To Be Included on the LDR Notification**

EPA solicited comment in the Supplemental Information Report on how to limit the underlying hazardous constituents to be monitored (and thus, the ones required to be reported on the LDR notifications) (see Supplemental Information Report, pp. 8-10). Commenters on this issue generally said that the regulated community should

only be required to address those constituents which are in the ignitable or corrosive wastes as generated, prior to any subsequent mixing with other wastes, and the generators should monitor only for those hazardous constituents reasonably expected to be present in the I/C waste. This is the approach being adopted for this interim final rule (see section III.G above). The determination of which underlying hazardous constituents are in the waste may be made based on a one-time analysis of the waste to determine which of the F039 hazardous constituents are present, or it may be made based on knowledge of what constituents are reasonably expected to be present in the waste. Supporting documentation for the determination must be kept in the generator's on-site files. This approach for determining which constituents are present in the waste is not necessarily the approach that will be taken in future rulemakings when the remanded rules are addressed.

## 2. Management in Subtitle C—Regulated Facilities

The Agency has information that many of the ignitable and corrosive wastes that are not managed in CWA or SDWA systems are being treated in hazardous waste management units (primarily incinerators) subject to RCRA subtitle C. In such a case, the notification, certification, and recordkeeping requirements set out in 40 CFR 268.7 apply. This means, generally, that a notification would be prepared for each waste shipment sent from the generator to the treatment facility, in the same manner that such paperwork follows a listed waste from "cradle to grave." Once the waste is no longer hazardous, however, the only further recordkeeping and documentation required is set out in 40 CFR 268.9. Section 268.9 requires that the generator/treater (including generators who treat, see 51 FR at 40598, November 7, 1986) prepare a one-time notification which is sent to the EPA Region or authorized state and also kept in the generator or treater's files. The notification must include the name and address of the subtitle D facility receiving a waste shipment, a description of the waste initially generated, and the treatment standard to which the waste is subject (see § 268.9 (d), as amended at 57 FR at 37271 (Aug. 18, 1992)). For wastes covered by today's rule, these treatment standards would be the numerical standards for ignitable and corrosive wastes. These treaters must certify that they are familiar with the treatment process used at their facility and that the process can

successfully treat the waste to meet the treatment standards without impermissible dilution. See § 268.7(b)(5), which applies to persons who treat formerly characteristic wastes (see § 268.9(d)(2)). The Agency believes that, normally, at least some waste analysis is needed to make a good faith showing for the treatment standards in today's rule, given the number of hazardous constituents covered by those standards.

It is important to state that in addition to other waste codes that are currently required to be included on notifications under § 268.7, generators of ignitable and corrosive wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems must identify the underlying hazardous constituents (as defined in § 268.2) along with the corresponding constituent treatment standards.<sup>4</sup>

## 3. Management of Deactivated Ignitable or Corrosive Wastes at a Subtitle D Waste Management Facility

In certain cases, a generator, after removing the characteristic, may send the deactivated ignitable and corrosive waste off-site to a subtitle D waste treatment facility for treatment to address the underlying hazardous constituents. Such a situation points out a gap in the current regulations. Although the initial generator of the waste would have to comply with § 268.9 as explained above, there is no current requirement that the generator notify a subtitle D nonhazardous waste treater of what the treatment standards are, or for the subtitle D treater to verify compliance with those standards or to notify the ultimate disposal facility as to what the standards are. The Agency is aware that these are deficiencies in the notification, certification, and recordkeeping requirements in this interim final rule as they pertain to nonhazardous waste (non-subtitle C) treatment facilities.

EPA is not creating new requirements in this rule to redress these deficiencies because the Agency believes it is unlikely that decharacterized ignitable and corrosive wastes would be treated sequentially at different facilities. (In addition, the same problem already exists for other Third Third wastes. See 55 FR at 22663, column 1.) It seems

<sup>4</sup> An important issue that was discussed at the January 13-14, 1993, LDR Evaluation Project Roundtable meeting was the notification/recordkeeping requirements that are currently in place. Today's rule adds certain requirements to the existing notification/recordkeeping system. In response to the concerns expressed by Roundtable participants, however, the Agency will examine all the notification/recordkeeping requirements of the program to see if they can be simplified.

much more likely that generators that must send their waste off-site will send it to a subtitle-C hazardous waste management facility to have both the characteristic property removed and to treat the underlying hazardous constituents. Generators who decharacterize their ignitable waste on-site may also be equipped to treat the waste to meet the treatment standards for the underlying hazardous constituents. The Agency solicits comment, however, on whether generators will send their decharacterized wastes to a nonhazardous waste treatment facility for treatment of underlying hazardous constituents. If so, additional comments are solicited on what requirements should be imposed on the generator and on the nonhazardous waste treater to adequately document "cradle to grave" waste management or on whether existing liability and contractual agreements will lead the treater to obtain complete information about each waste shipment. For example, if EPA determines that additional federal regulation is necessary, one option that EPA is considering is to require a generator that decharacterizes an ignitable or corrosive waste and sends it off-site to a nonhazardous waste facility for treatment of the underlying hazardous constituents to provide a notification (see 40 CFR 268.7(a)) to inform the treater of the underlying hazardous constituents in the waste and the applicable treatment standards that must be met. Once the waste is treated to meet the treatment standards for the underlying hazardous constituents, the nonhazardous waste treater would provide a one-time notification and certification to the EPA Region or Authorized state (see 40 CFR 268.9, as amended on August 18, 1992, 57 FR 37194). This would include a recordkeeping requirement that a copy of the notification and certification be maintained in the facility's files. Comments are solicited on such an approach.

The disposer of a waste that was hazardous at the point of generation and prohibited from land disposal has the ultimate responsibility for land disposing only wastes that meet LDR treatment standards (see § 268.37 in this interim final rule which implements the RCRA section 3004(g)(5) prohibition). This applies to both subtitle C and subtitle D disposers. The Agency assumes that the nonhazardous waste treater is also likely to be the disposer of the waste. Therefore, EPA recommends that generators provide to the nonhazardous waste treater

information on what underlying hazardous constituents are present in the decharacterized waste, along with the treatment standards. Furthermore, the nonhazardous treater may want to ask the generator for such information as a condition of doing business, particularly if they are also disposing the waste and so are responsible for meeting the LDR treatment standards before disposal.

#### *J. De Minimis Losses of Characteristic Materials Are Not Prohibited*

##### **1. De Minimis Losses of Ignitable (D001), or Corrosive (D002) Commercial Chemical Products or Chemical Intermediates Containing Underlying Hazardous Constituents**

Another issue demanding attention as a result of the court's opinion is that of the status of *de minimis* losses to wastewater treatment systems of commercial chemical products or chemical intermediates that are ignitable (D001), or corrosive (D002), and that contain underlying hazardous constituents.

The Supplemental Information Report discussed whether an approach similar to the mixture rule exception in 40 CFR 261.3(a)(iv)(D) should apply to these *de minimis* losses. The Agency stated that it would seem incongruous for minor leaks of an acid to a wastewater treatment system, which leaks are inevitable as a practical matter and can most responsibly be handled by management in the plant's wastewater treatment system (46 FR 56583, Nov. 17, 1981), to potentially trigger all of the potential consequences of the Third Third opinion (see Supplemental Information Report, pp. 39-40). Moreover, this result would be more stringent than for *de minimis* losses of listed wastes (which tend to be more concentrated, 976 F. 2d at 30), since the mixture rule does not apply to such losses. The Agency stated further that it did not believe that the court considered this type of incidental loss when writing its opinion.

Commenters supported the approach discussed in the Supplemental Information Report. Therefore, for the reasons stated in the Report, the Agency is promulgating an approach whereby *de minimis* losses to wastewater treatment systems of ignitable (D001), or corrosive (D002) commercial chemical products or chemical intermediates containing underlying hazardous constituents are not considered to be prohibited wastes. *De minimis* is defined as 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.

##### **2. Wastewaters From Laboratory Operations**

The Agency also solicited comments on whether the exclusion for wastewaters from laboratory operations presently applicable to listed wastewaters (see 40 CFR

261.3(a)(2)(iv)(E)) should also apply to ignitable and corrosive wastes covered by this interim final rule. As stated in the Supplemental Information Report, it seems logical that this same type of exception is needed for ignitable and corrosive wastes. The mixture rule exception for listed wastes has not been seriously questioned since it was adopted in 1981, and these characteristic wastes will typically contain lower concentrations of hazardous constituents than listed wastes. CF. 976 F. 2d at 29-30. Thus, the Agency believes, *a fortiori*, that the same exception should apply for these characteristic laboratory wastes. Commenters on this issue all favored such an approach.

The Agency, therefore, is promulgating in 40 CFR 268.1 an exclusion that says that land disposal prohibitions do not apply to ignitable and corrosive laboratory wastes that are commingled with other plant wastewaters under designated circumstances: ignitable and corrosive laboratory wastes containing underlying hazardous constituents from laboratory operations, that are mixed with other plant wastewaters at facilities whose ultimate discharge is subject to regulation under the CWA (including wastewaters at facilities which have eliminated the discharge of wastewater), provided that the annualized flow of laboratory wastewater into the facility's headwork does not exceed one percent, or provided that the wastes' combined annualized average concentration does not exceed one part per million in the facility's headwork (the same condition that applies to the existing exemption in 40 CFR 261.3(a)(2)(iv)(E)).

##### **K. Status of Impoundments and Landfills Receiving Decharacterized Ignitable and Corrosive Wastes Subject to a Capacity Variance**

Although prohibited wastes that are subject to a national capacity variance that are going to be disposed in landfills or surface impoundments can ordinarily only be disposed in landfills and

impoundments that satisfy minimum technology requirements (MTR) (§ 268.5(h)(2)), this does not apply to decharacterized prohibited wastes subject to a capacity variance that are disposed in subtitle D units. As the Agency explained in the Third Third rule, the MTR only apply to subtitle C units, and consequently do not apply to subtitle D landfills and impoundments receiving decharacterized wastes. 55 FR at 22664.

#### **IV. Capacity Determinations**

This section presents the capacity analysis for ignitable (D001 or I wastes) and corrosive wastes (D002 or C wastes) for which the deactivation (DEACT) treatment standards promulgated in the Third Third rule were vacated by the court and for which new treatment standards are being promulgated today.

##### **A. Data Sources and Limitations**

In conducting this analysis, EPA became aware of several limitations in its data. First, data from the 1989 Biennial Report reflect generation and management of IC wastes prior to the Third Third rule coming into effect. Second, the quantities of wastes from the 1989 Biennial Reporting System (BRS) may be underestimated if disposed wastes were diluted very shortly after generation and not reported in the survey (commenters have noted that these wastes have not generally been considered IC wastes). Third, data on constituent concentrations in waste streams and in the residuals from the treatment of IC wastes are very limited. Finally, while the Agency expects that much of the unreported diluted IC wastes are disposed in CWA and SDWA-regulated systems, the Agency has very little information on unreported quantities of IC wastes affected by this rule.

In addition, the Agency is promulgating alternative treatment standards expressed as required methods of treatment (incineration, fuel substitution, and solvent recovery) for D001 wastes. These methods are the same as those promulgated in a previous rule for the D001 High TOC subcategory. In the Third Third rule capacity analysis, EPA assigned the entire volume of D001 ignitable liquid nonwastewaters to incineration (both high TOC and low TOC) (55 FR 22635) because these categories could not be distinguished in available data. For this analysis, EPA is able to distinguish between liquid and solid nonwastewaters using BRS data. However, the Agency is still unable to distinguish between high and low TOC D001 ignitable liquid nonwastewaters.

Therefore, by assigning the entire quantity of D001 ignitable liquid nonwastewaters subject to this rule to the D001 wastes covered by this rule, the Agency may be overestimating the required capacity for these wastes.

#### B. Comments on Capacity From the Notice of Data Availability

EPA has received approximately 60 public comments on the Supplemental Information Report prepared for the Notice of Data Availability. Of these, 40 commenters dealt with capacity issues raised in the Supplemental Information Report. However, few commenters addressed issues related to the wastes covered in this rule (i.e., deactivated wastes whose discharges are not regulated under CWA, CWA-equivalence, or Class I SDWA).

Many commenters expressed the need for a capacity variance for wastewater treatment systems in which IC wastes are deactivated. As discussed above, the Agency will address IC wastes managed in CWA/SDWA systems in future rulemakings and will make variance determinations at that time.

Some commenters (e.g., Texaco, Ethyl Corporation) expressed concern that the impact of this rule on Class V injection wells will have significant economic and capacity impacts. Several commenters (e.g., CMA, PMA, Dupont) confirmed that the Biennial Report Survey is likely to underestimate the number of facilities and quantities of wastes potentially affected by this rule because many respondents did not report wastes managed in non-hazardous systems.

#### C. Methodology and Analysis

In conducting its capacity analysis for this rule, the Agency relied primarily on data from the 1989 Biennial Reporting System (BRS), comments to the Notice of Data Availability and discussions with EPA regional and state officials as

well as other knowledgeable persons. The IC wastes potentially affected by this rule are deactivated wastes that are not disposed of in CWA centralized wastewater treatment systems involving impoundments or injected in SDWA-permitted Class I deepwells, or zero discharge facilities performing CWA equivalent treatment of IC wastes before final disposal of those wastes. EPA's capacity analysis thus focused on treatment and treatment residuals of IC wastes that may not meet the standards promulgated in today's rule, which wastes are currently being deactivated in systems that are not regulated under the types of CWA, SDWA, or CWA-equivalent systems described above.

#### 1. Treatment and Treatment Residuals

Treatment and residuals from the treatment of IC wastes may be affected by today's rule and require additional treatment. Tables IV-1 and IV-2 show the quantities of D001 and D002 wastes going to on- and off-site incineration, reuse as fuel, stabilization systems, solvent recovery and evaporation, according to the 1989 Biennial Report. These tables are organized to show the quantities of wastes potentially affected by this rule. Whether IC wastes are affected depends on whether they are managed alone or with other codes and on how they are currently treated.

Table IV-1 shows wastes treated in off-site systems, while Table IV-2 shows wastes treated in on-site systems. The first row of these tables contains the quantities of wastes carrying only the D001 waste code. The second row contains the quantities of wastes carrying only the D001 code, and any D004-11 codes. These waste streams do not carry any listed codes, or other characteristic codes. The third row contains the quantities of wastes carrying the D001 code, any D004-11 code, along with any listed or characteristic codes the stream may also

carry. The fourth row shows the quantities of wastes carrying the D001 code, and a solvent code (F001-5), but no other codes. The fifth row shows the quantities of wastes in wastes streams carrying the D001 code, a solvent code (F001-5), and any other code. The sixth row contains the quantities of wastes only carrying both D001 and D002 codes. The final three rows are similar to the first three, reporting quantities of wastes carrying only D002, D002 with any D004-11, and all streams with D002 and D004-11 as well as any other listed or characteristic codes. It should be noted that the Biennial Report only allows one system code to be checked per waste stream. Therefore, wastes that are incinerated prior to being stabilized are not likely to appear in the stabilization totals. The Agency believes that the majority of D001 waste streams are being treated in combustion systems, and will not be affected by today's rule.

Tables IV-1 and IV-2 show that approximately 7,000 tons of D001 wastes are reported to be stabilized as their primary treatment. By today's rule, these wastes may require incineration, reuse as fuel, or solvent recovery as their initial treatment.

Table IV-2 shows that relatively large quantities of D002 are reported in the Biennial Report as being treated in combustion systems (D001-2 Only, and D002 & D004-11 mixed with other codes). Approximately 300,000 tons of D002 wastes are managed on-site in combustion systems. Of these wastes, 70,000 tons are mixed with metal wastes and other codes. Assuming a 10 percent residuals to waste ratio, EPA expects that approximately 10,000 tons of D002 wastes mixed with metal codes may require additional treatment, provided the constituent concentrations in the ash exceed today's treatment standards.

TABLE IV-1.—QUANTITIES OF WASTES TREATED IN OFF-SITE INCINERATION, REUSE AS FUEL, AND STABILIZATION, SOLVENT RECOVERY AND EVAPORATION SYSTEMS

[tons/year]

	Incineration	Reuse as fuel	Stabilization	Solvent recovery	Evaporation
2D001Only .....	NA	NA	2,379	NA	0
D001 and D004-11 Only .....	NA	NA	429	NA	0
D001 and D004-11 Mixed with other codes .....	NA	NA	462	NA	NA
D001 and F001-5 only .....	NA	NA	118	NA	NA
D001 and F001-5 mixed with other codes .....	NA	NA	11	NA	NA
D001-2 .....	5,066	566	923	1,230	0
D002 Only .....	23,647	370	5,768	13,894	42
D002 and D004-11 Only .....	1,119	663	4,177	239	88



TABLE IV-1.—QUANTITIES OF WASTES TREATED IN OFF-SITE INCINERATION, REUSE AS FUEL, AND STABILIZATION, SOLVENT RECOVERY AND EVAPORATION SYSTEMS—Continued

(tons/year)

	Incineration	Reuse as fuel	Stabilization	Solvent recovery	Evaporation
D002 and D004-11 mixed with other codes .....	9,054	1,779	9,017	45	NA

Source: 1989 Biennial report.  
NA=Not applicable.

TABLE IV-2.—QUANTITIES OF WASTES TREATED IN ON-SITE INCINERATION, REUSE AS FUEL, AND STABILIZATION, SOLVENT RECOVERY AND EVAPORATION SYSTEMS

(tons/year)

	Incineration	Reuse as fuel	Stabilization	Solvent recovery	Evaporation
D001 Only .....	NA	NA	420	NA	1,075
D001 and D004-11 Only .....	NA	NA	2	NA	0
D001 and D004-11 Mixed with other codes .....	NA	NA	1,266	NA	NA
D001 and F001-5 only .....	NA	NA	34	NA	NA
D001 and F001-5 mixed with other codes .....	NA	NA	1,255	NA	NA
D001-2 .....	108,518	124,807	0	548	0
D002 Only .....	5,287	3,372	1,097	38	835
D002 and D004-11 Only .....	16	0	4	0	101
D002 and D004-11 mixed with other codes .....	26,484	46,638	1,277	4	NA

Source: 1989 Biennial report.  
NA=Not applicable.

## 2. IC Wastes Currently Deactivated Covered By This Rule.

In order to estimate the potential quantities of IC wastes affected by this rule, EPA extracted data from the BRS on IC wastes managed in surface impoundments whose discharges are not regulated under CWA or SDWA (as explained above). Data from the BRS indicates that 99.9% of all waste quantities disposed of in surface impoundments are discharged under CWA or in SDWA Class I wells. EPA believes that IC wastes are land disposed in the same proportions as other wastes; therefore, EPA believes that most IC wastes that are placed in surface impoundments are part of a CWA system or sent to Class I wells. The Agency estimates that approximately 1,000 tons of D001 wastes may be managed in evaporation systems—that is, wastes that are subject to today's rule. These wastes may require alternative treatment capacity if the underlying hazardous constituents in these wastes are above F039 standards. EPA has not assigned these quantities to treatment technologies because of the lack of data on constituent composition in these evaporation systems.

The Agency has also become aware of wastewater treatment systems that are not regulated under CWA/SDWA and

that may be impacted by this rule. (As described earlier, only those zero-discharge facilities that do not provide CWA-equivalent treatment would be impacted by today's rule.) These systems are generally state-regulated through zero discharge, land application, or ground-water protection permits. State data received by EPA did not indicate whether the wastes discharged under these systems are IC wastes or contain decharacterized IC wastes or what constituent levels are allowed in the state permits. Furthermore, state standards exist either on a case-by-case basis or in general form and are not necessarily consistent across states.

States generally require treatment of wastes regulated through no-discharge permits. EPA has determined that many of these facilities are providing treatment similar to other facilities whose discharges are regulated under CWA. As explained above, the Agency has determined that such zero discharge systems will be addressed at a future date, along with similar CWA discharge systems. The Agency believes that most of the wastes regulated by states through no-discharge, land application, or ground-water protection permits receive treatment similar to CWA discharge systems and are therefore not covered by this rule.

In addition, deactivated IC wastes that currently are disposed without CWA-equivalent treatment into UIC program injection wells other than Class I wells would be affected by today's rule to the extent that these wastes do not meet F039 standards. In particular, commenters to the Notice of Data Availability voiced concerns about Class II and Class V wells.

As described in section I.F above, after an examination and evaluation of the comments received on the Notice of Data Availability, the Agency believes that Class II UIC wells reinjecting oil and gas primary production wastes are not newly impacted by this rule.

Data available to EPA indicates that there may be up to 200,000 industrial Class V wells. Because of the lack of waste characterization data, it is not known how many of these wells receive deactivated IC wastes or would meet F039 treatment standards before injection. Typical quantities of wastes injected in these wells vary widely between 35 and 1,000 gallons per week. EPA estimates that approximately 15,000 tons per year of wastes injected in Class V wells may contain deactivated IC wastes. This estimate takes into account that some of these wastes receive treatment prior to Class V injection and are either likely to meet F039 standards or to be CWA equivalent

zero dischargers (and thus not be impacted by today's rule).

The Agency suspects that many of these Class V wells fall under the Small Quantity Generator (SQG) exclusion and are conditionally exempt from RCRA requirements, including the LDRs (see 268.1(e)(1)). From the information gathered, and comments received on the Notice of Data Availability, EPA further believes that a number of the deep Class V wells treat their wastes prior to injection, and thus would not be affected by this rule if such a practice would qualify them as a CWA-equivalent facility.

### 3. Affected Facilities

Table IV-3 shows the number of facilities which indicated in the BRS that they treated D001 and D002 wastes in incineration, reuse as fuel, solvent recovery, stabilization, and evaporation systems. The table shows both the number of facilities managing IC wastes on-site and those treating wastes received from off-site. These include commercial treatment and company-captive treatment facilities.

The first two rows of Table IV-3 show the number of facilities which reported sending waste streams carrying a D001 code, and any other D codes, but no listed codes, to stabilization and evaporation systems. The next three rows show the number of facilities which reported sending waste streams carrying both the D001 and D002 codes,

and any other D codes, but no listed codes, to incineration, reuse as fuel, and solvent recovery systems. The last five rows show the number of facilities which reported sending waste streams carrying a D002 code, and any other D codes, but no listed codes, to stabilization, incineration, reuse as fuel, evaporation, and solvent recovery systems.

Overall, Table IV-3 indicates that 73 facilities with on-site treatment systems and 279 commercial and company-captive facilities may be affected by this rule. On-site treatment facilities may have to reconfigure their current treatment systems to include additional technologies. Commercial facilities are also included as potentially affected although EPA recognizes that these facilities have some discretion in their decision to accept or reject wastes for treatment.

EPA contacted state officials to obtain information on non-CWA/SDWA systems that are state-regulated through zero discharge land application permits, as discussed in the previous section. Based on professional judgement, EPA estimates that approximately 100 facilities regulated under these state programs may manage deactivated IC wastes.

Following discussions with regional and state officials, EPA has determined that the types of Class V industrial wells that may be impacted by this rule are:

- Industrial process water and waste disposal wells that are used to dispose of a wide variety of wastes and wastewaters from industrial, commercial, or utility processes. Industries include refineries, chemical plants, pharmaceutical plants, laundromats and dry cleaners, tanneries, laboratories, petroleum storage facilities, electric power generation plants, car washes, electroplating industries, etc.

- Automobile Service Station Disposal Wells that inject wastes from repair bay drains at service stations, garages, car dealerships, etc.

However, the Agency believes that many of these facilities are either Small Quantity Generators (SQGs), or generate IC wastes from *de minimis* losses of ignitable or corrosive products, as described in this rule, or treat their wastes in CWA-equivalent systems before permanent disposal, and are therefore not covered by this rule. Based on contacts with regional and state officials, EPA estimates that fewer than 100 facilities with Class V wells may be impacted. These include primarily wastes from industrial facilities that are not treated prior to injection, and wastes from large repair/maintenance facilities. The Agency solicits comment on estimates, as well as additional information on the number of Class V wells, the types of wastes, and the volumes of such wastes injected.

TABLE IV-3.—NUMBER OF FACILITIES POTENTIALLY IMPACTED BY THIS RULE

Type of waste	Type of treatment	Number of facilities reporting on-site treatment	Number of facilities receiving wastes from off-site
Waste streams carrying at least a D001 code, may have any other D code but no listed codes.	Stabilization .....	4	64
Waste streams carrying at least a D001 code, may have any other D code but no listed codes.	Evaporation .....	3	3
Waste streams carrying at least a D001 and D002 code, may have any other D code but no listed codes.	Incineration .....	22	89
Waste streams carrying at least a D001 and D002 code, may have any other D code but no listed codes.	Reuse as fuel ...	9	31
Waste streams carrying at least a D001 and D002 code, may have any other D code but no listed codes.	Solvent recovery	1	27
Waste streams carrying at least a D002 code, may have any other D code but no listed codes.	Stabilization .....	8	93
Waste streams carrying at least a D002 code, may have any other D code but no listed codes.	Incineration .....	44	206
Waste streams carrying at least a D002 code, may have any other D code but no listed codes.	Reuse as fuel ...	11	67
Waste streams carrying at least a D002 code, may have any other D code but no listed codes.	Evaporation .....	7	2
Waste streams carrying at least a D002 code, may have any other D code but no listed codes.	Solvent recovery	4	78
Total facilities affected, on-site and off-site .....	All of the above	73	279

TABLE IV-3.—NUMBER OF FACILITIES POTENTIALLY IMPACTED BY THIS RULE—Continued

Type of waste	Type of treatment	Number of facilities reporting on-site treatment	Number of facilities receiving wastes from off-site
Total number of unique facilities affected .....	All of the above		<sup>1</sup> 338

<sup>1</sup> This total does not add up to the totals of the two columns because it includes facilities that report they treat wastes generated on-site as well as received from off-site. Source of data: 1989 Biennial report.

#### D. Variance Determinations

The Agency's analysis indicates that the quantities of wastes potentially affected by this rule is relatively small, approximately 30,000 tons per year. EPA estimates that there is 750,000 tons of combustion capacity for liquids and solids, and over 1,000,000 tons of stabilization treatment capacity. Therefore, a capacity extension is not generally warranted. However, capacity to provide additional treatment for these wastes may not be immediately available. Therefore, in order to allow all generators and off-site treatment facilities the time necessary to install additional treatment equipment that may be needed, and to perform the necessary testing procedures to determine whether their wastes are affected by this rule, the Agency is granting a 90-day national capacity variance from the effective date of this rule to ignitable (D001) and corrosive (D002) wastes covered under this rulemaking.

As noted above, the Agency believes that most of the Class V wells which could be potentially impacted by this rule either fall under the Small Quantity Generator (SQG) exclusion and are conditionally exempt from RCRA requirements, including the LDRs (see 268.1(e)(1)), or have CWA-equivalent treatment systems and are therefore not affected by today's rule. As an interim measure, however, the Agency is granting a national capacity variance extending the effective date of today's rule for nine months from the date of signature for decharacterized ignitable and corrosive wastes injected into Class V wells in order for the facility to determine: (1) If it is impacted; (2) to develop appropriate on-site modifications for alternative treatment; (3) to obtain off-site treatment; and, if necessary, submit petitions for case-by-case capacity variances (see section IV of this preamble). The Agency also solicits additional information on the number of Class V wells, the types of wastes, and the volumes of such wastes injected. The Agency believes that it would be prudent for these Class V wells to apply for case-by-case

extensions of the effective date during this nine-month extension period.

The Agency wishes to emphasize that deactivated IC wastes regulated under CWA/CWA-equivalent/SDWA will be addressed in future rulemakings. Current treatment standards for wastes managed in these systems remain in effect.

#### V. 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 the Hazardous and Solid Waste Amendments of 1984 (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 as RCRA requirements in an authorized State until the State adopted the requirements as State law, and EPA approved the State's revisions.

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 nonauthorized 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. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA applies in

Federally authorized States in the interim.

Today's rule is being promulgated pursuant to sections 3004 (d) through (k), and (m), of RCRA (42 U.S.C. 6924 (d) through (k), and (m)). It is added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and that take effect in all States, regardless of their authorization status. States may apply for either interim or 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. Effect on State Authorization

As noted above, EPA is today finalizing an interim rule that will be implemented in non-authorized and authorized States until their programs are modified to adopt these rules and the modification is approved by EPA. Because the rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive either 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 either interim or final authorization are described in 40 CFR 271.21.

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). The deadline is July 1, 1994, because this rulemaking was finalized on or before June 30, 1993. 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, and the State assumes responsibility for this implementation.

States with authorized RCRA programs may already have

requirements similar to those in today's final rule. These State regulations have not been assessed against the Federal regulations being finalized 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 many cases, EPA 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 their first 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.

The regulations being finalized today need not affect the State's Underground Injection Control (UIC) primacy status.

## VI. Regulatory Requirements

### *A. Economic Impact Screening Analysis Pursuant to Executive Order 12291*

Executive Order No. 12291 requires that a regulatory agency consider for each regulation the potential benefits as compared to the potential costs to society. To this end, for all major rules, a Regulatory Impact Analysis (RIA) must be conducted. An RIA is a quantification of the potential benefits, costs, and economic impacts of a rule. A major rule is defined as a regulation estimated to result in:

- An annual effect on the economy of \$100 million or more; or
- A major increase in costs or prices for consumers, individuals, industries, Federal, State, and local government agencies, or geographic regions; or
- Significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

The Agency conducted a screening analysis to learn whether the costs incurred under the today's rule exceed \$100 million annually, thus making it a major rule. EPA determined that the incremental cost of the rule is between \$8 and \$13 million per year. Because today's rule is a minor rule, the Agency has prepared an Economic Impact Screening Analysis (EIA), analyzing the costs and economic impacts of the rule. The Agency has not performed a quantification of the benefits attributable to today's rule.

The discussion which follows addresses the methodology and results of the EIA. The methodology section summarizes the approach taken for determining the volumes, costs and economic impacts associated with today's rule. The results section describes the results for the volume, cost and economic impact estimations. A more detailed description of the methodology and results sections may be found in the "Economic Impact Analysis for the Interim Final Rule in Response to the Third Third Court Case," which has been placed in the docket for today's rule.

#### 1. Methodology

*a. Estimation of Affected Volumes—Overview.* The volume addressed in today's rule covers the ignitable (D001) and corrosive (D002) (IC) wastes with hazardous constituents at levels greater than the F039 treatment standards that are managed at facilities other than those whose discharge is regulated under the CWA, zero-discharge facilities engaging in CWA-equivalent treatment prior to land disposal, and facilities injecting these wastes into Class I deep injection wells regulated under the SDWA. Because of differences in baseline and post-regulatory management practices for D001 and D002 liquids and treatment residuals, EPA considered these three subsets of affected wastes separately in its analysis.

The Agency relied heavily on three sources of information to develop an estimate of the waste volumes affected by today's rule. The 1989 BRS provided D001 and D002 quantities as reported to EPA by large quantity generators. EPA used the 1986 Treatment, Storage, Disposal and Recycling Facility Survey (TSDR) and 1989 telephone survey update performed by OSW to help estimate the proportions of (1) liquid wastes discharged directly (i.e., without placement in a land based unit) under the CWA, and (2) liquid wastes placed in a surface impoundment with no discharge. Thirdly, EPA used responses to the Questionnaire for Facilities that

Land Dispose Newly-Identified Organic TC Wastes (referred to hereafter as the 1992 TC Survey) to update wastewater management information collected for the TSDR and the subsequent 1989 telephone update. A more detailed description of the Agency's volume estimation process is described in the background document in the docket for today's rule.

It should be noted that in estimating the affected volumes for today's rule there is a volume of D001 and D002 never reported as hazardous waste in the Agency's survey data. While the Agency performed a sensitivity analysis to determine how this unreported quantity may increase the impact of today's rule, the lack of data presented limitations to the analysis.

*b. Estimation of Affected Volumes—Liquids.* The Agency employed the BRS to identify, using information on treatment practices for liquids, which liquids could potentially be managed on the land. EPA then used factors to approximate the quantities of liquids: (1) that could be placed on the land, and (2) that would not be managed in systems regulated under the CWA/CWA-equivalent/SDWA not affected by today's rule. To determine these factors, the Agency reviewed waste management information from the TSDR, as modified by the 1989 telephone update. The Agency then employed information collected as part of the 1992 TC Survey which indicated that 8 of the 10 largest generators of potentially land-disposed liquids, as reported in the 1989 BRS, no longer had surface impoundments. EPA linked this information to the management information contained in the TSDR, and determined that in general only 13 percent of liquids are managed in surface impoundments during treatment, storage or disposal. Therefore, EPA multiplied all the D001 and D002 liquid volumes it obtained from the BRS by 13 percent to estimate the quantities of D001 and D002 likely managed on the land.

In developing a generic factor to estimate quantities of D001 and D002 liquids affected by today's rule, the Agency first assumed that any liquids in the 1986 TSDR survey denoted as being managed in treatment or storage impoundments were being managed in those units temporarily, and would eventually be discharged pursuant to CWA regulations. Furthermore, EPA assumed that liquids denoted in the TSDR as being managed in surface impoundments with no discharge were managed in those units permanently and would not be regulated under these two statutes. Based on these two assumptions of surface impoundment

management, EPA estimated that one percent of the liquids managed in land-based units are permanently managed in these units, and are not subsequently discharged through systems regulated under the CWA or SDWA, or receiving CWA-equivalent treatment. Therefore, by combining its two factors (i.e., 13 percent and 1 percent), EPA estimated that, in general, only 0.13 percent of potentially land-disposed liquids in the 1989 BRS would be affected by today's rule. EPA applied this percentage generically to all IC waste to determine the waste quantities for its cost analysis.

**c. Estimation of Affected Volumes—Residuals.** As EPA has specified treatment methods for D001 wastes, which if used remove the burden of testing for compliance, the Agency is assuming that the only costs incurred under today's rule for the treatment of residues will be incurred for those residues generated from the treatment of D002 wastes. To determine the quantity of residuals affected by today's rule, the Agency used the 1989 BRS data to identify the volumes of D002 liquids, sludges, and solids currently going to three categories of treatment: incineration, fuel substitution, and recovery of organics. EPA then developed residual factors for the combinations of waste forms and treatment categories. EPA assumed, as an upper bound, that at least one constituent concentration in the residuals would exceed the treatment standards in every case. However, because the treatment technologies currently being employed to treat D002 are effective in destroying or removing organics, EPA assumed that these residuals would only require stabilization to reduce leachable levels of metals. In other words, EPA assumed that all residuals would fail the treatment standards, but only for metals, and therefore would require treatment in the form of stabilization in all cases. EPA considered the solid fraction of waste only, expecting that any facility with substantial liquid residuals will already have a treatment system regulated under the CWA or SDWA.

**d. Estimation of Affected Volumes—Affected Class V Wells.** To estimate the volumes of waste from the affected Class V wells, the Agency drew from volume estimates prepared by the Office of Water for work on a Class V injection well proposed rule. The volume estimating process is described in greater detail in the "Economic Impact Analysis for the Interim Final Rule in Response to the Third Third Court Case," which has been placed in the docket for today's rule.

The Agency used estimates of the number of wells affected, and the disposal rate of waste for model wells in order to develop an estimate of the total annual disposal rate of waste in tons per years for the Class V wells. Next, EPA approximated the percentage of this total volume which would be IC waste, and thus potentially covered under today's rule. This approximation was derived using the 1989 BRS Summary Report and the 1990 RIA for the Third Third LDR. This interim result represents the total annual amount of IC waste disposed in Class V wells. Using this result, the Agency estimated those volumes which are managed under the small quantity exemption, and therefore would not be affected by today's rule. Further, EPA estimated the volumes which have hazardous constituents below F039 levels, and so would also not be affected by today's rule. The resultant volume represents the total amount of Class V injected waste affected by today's rule.

**e. Estimation of Costs Incurred—Liquids, Residuals and Affected Class V Wells.** To estimate the range of costs expected to be incurred as a result of today's rule, the Agency developed baseline and post-regulatory management assumptions for IC wastes. The incremental costs of the rule are derived by comparing baseline costs with the costs resulting under the post-regulatory scenario.

The baseline waste management scenario for all IC waste is assumed to be deactivation followed by subtitle D disposal. Treatment to comply with standards set in today's rule will vary widely, depending on the chemical composition and physical form of the waste. Because of data limitations, it is impossible to predict exact treatment technologies which would be employed by waste management facilities; thus, the Agency relied on assumptions to estimate the upper-bound of the post-regulatory compliance cost.

The Agency employed an upper-bound estimate that all facilities managing wastewaters in non-CWA/non-CWA-equivalent/non-SDWA systems would incur the cost of switching from land-based units to tanks. This approach overestimates the true cost for those facilities that choose rather to employ treatment and testing where found to be less costly than replacement with tanks. For certain facilities where replacement with tanks is not an option, however, this approach may not be overestimate. The Agency developed cost functions for replacement with tanks. These detailed assumptions are presented in the "Economic Impact Analysis for the

Interim Final Rule in Response to the Third Third Court Case."

For the residuals from thermal treatment (e.g., incineration, reuse as fuel, solvent recovery), the Agency assigned stabilization treatment to the total volume of residual, followed by subtitle D disposal of the stabilized mass. The Agency used a range of stabilization unit costs between \$108/ton and \$210/ton, to estimate the cost of residuals management under today's rule. However, as the \$210/ton cost includes subtitle C disposal, it should be viewed as a high bound cost.

For the last category of wastes addressed under today's rule, the wastes attributed to Class V wells, the Agency used the total volume estimate developed above with a unit cost of \$240 per ton of waste treated to produce a total cost estimate for the rule. This approach was required due to the lack of data and time for the analysis of Class V wells. The \$240 per ton is for the post-regulatory treatment technology, and is equivalent to many technologies which might be chosen, such as: chemical precipitation, carbon absorption or biological treatment. As the Agency has not been able to focus on the exact volume affected by today's rule, nor does the Agency have knowledge on the possible treatments used in the post-regulatory scenario, this estimate is a high-bound estimate for the Class V wells.

**f. Estimation of Costs Incurred—Testing Costs.** There could be analytic costs incurred under today's rule for residues from treating D002 wastes, and for D001 wastes not treated by combustion or reclamation technologies. While some managers of potentially affected D001 and D002 wastes and residues may ultimately use professional knowledge to determine whether they meet the treatment standards, testing will likely be necessary for a short period following promulgation of today's rule.

The Agency believes that the testing costs in the long-term will be negligible, as it is believed that facilities will shift to using professional knowledge following initial testing. In addition, the facilities not using a specified method, and thus require testing, may only require testing for the presence of metals. However, the Agency has estimated a high-bound cost for testing assuming that half of the affected facilities would perform testing, rather than using professional knowledge. With the cost of testing for all F039 constituents estimated to be \$3000 per test, the Agency determined a total annual testing cost figure of approximately \$1 million.



g. **Estimation of Costs Incurred—Reporting Requirements.** Permitted treatment facilities that have Waste Analysis Plans requiring a permit modification in order to be able to treat underlying hazardous constituents will be impacted by today's rule. As mentioned previously in this preamble, such modifications may be made through a Class 1 permit modification with prior approval. (Also, see amendment to 40 CFR 270.42 promulgated as part of today's rule.)

The Agency, employing standard assumptions of number of burden hours for a Class 1 permit modification with prior approval, estimates the costs incurred as a result of these reporting requirements to be \$10,500. A more detailed discussion of the costing procedure for reporting requirements is included in the Economic Impact Analysis background document for today's rule.

h. **Methodology for Economic Impact Analysis.** As facility-specific cost data are not available for the affected volumes in today's rule, EPA is not able to conduct a quantitative economic impact analysis. However, given the time and data available, the Agency prepared an examination of the costs of today's rule, disaggregated by 2-digit SIC codes, in the Economic Impact Analysis background document prepared for this interim final rule and available in the RCRA docket.

## B. Results

### a. Results of Affected Volumes Estimation

EPA conservatively estimates an upper bound of 73,000 tons of liquids (not including those sent to Class V wells); 36,000 tons of residuals from treatment; and 15,000 tons of liquids going to Class V wells being affected by today's rule. The volume of liquids is low because most facilities have established systems that utilize exempt units (i.e., tanks) or centralized treatment whose discharge is ultimately regulated under the CWA and SDWA. The volumes attributed to Class V wells are low because the majority of Class V wells are small quantity generators, or do not have wastes which have hazardous constituents at levels above the F039 treatment levels. It should be noted that, the Agency analysis overestimates quantities affected in that it typically does not account for the volumes which would already meet treatment standards and thus not require additional treatment under today's rule (except in the case of Class V wells).

### b. Results of Incremental Costs Incurred

In developing its method to assess the cost of today's rule, the Agency has relied on several conservative assumptions. The Agency estimates that the compliance cost of today's rule is between \$8 and \$13 million annually. Table VI-1 presents the estimates for each category of affected waste.

TABLE VI-1.—UPPER-BOUND COMPLIANCE COST OF THE RULE BY WASTE TYPE

Waste type	Quantity affected (tons/yr)	Incremental compliance cost (\$ million/yr)
Liquids .....	73,000	<0.5
Residuals .....	36,000	3.9 to 7.6
Class V Wells	15,000	3.5
Analytical costs.	.....	0 to 1.0
Total .....	.....	7.9 to 12.6

### d. Sensitivity Analysis of Cost Results

The Agency's sensitivity analysis covered only the potentially missing volume of IC waste currently being deactivated and managed as nonhazardous waste. The Agency's sensitivity analysis portrays possible quantities of deactivated IC waste, and the resultant cost ramifications in an order of magnitude approach. A more thorough examination of the limitations in the analysis of today's rule is included in the "Economic Impact Analysis for the Interim Final Rule in Response to the Third Third Court Case" background document, which has been placed in the docket for today's rule.

The Agency believes that all deactivated IC volumes managed as nonhazardous waste would be wastewaters (i.e.: liquids), as sludges and solids are not typically managed through exempt units. The Agency's estimate of quantities of affected liquids, as shown in Table VI-1, is 73,000 tons per year. The resulting incremental cost for this 73,000 tons per year of liquid waste is <\$0.5 million per year.

Therefore, if the 73,000 tons per year is doubled as a result of these nonhazardous IC volumes which are not captured in today's analysis, the resulting incremental costs for liquids would be approximately \$1.0 million per year. If the quantity was multiplied by 5, the resulting cost would be approximately \$2.5 million per year. If the quantity was multiplied by 10 times, the cost would be roughly \$5 million per year. And finally, if the volume was multiplied by 50, so that the volume was 3.65 million tons per year, the

incremental cost would be approximately \$25 million per year.

The Agency emphasizes that the volume and cost estimates presented in Table VI-1 are upper-bound estimates derived by applying a series of conservative assumptions that were useful given the absence of substantial detailed data. It is acknowledged that some volume of IC waste may exist which is managed as nonhazardous waste currently, and therefore not accounted for in the EPA's estimate. The Agency's sensitivity analysis should be viewed as order-of-magnitude estimates, providing a screening level examination of potential costs for a series of hypothetical volumes.

### B. 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. 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, the Agency considered three factors. First, due to the low annual incremental cost of \$7.9 million estimated for today's rule, the Agency anticipates minimal impacts on small entities. Second, data on potentially affected small entities are unavailable. And third, due to the statutory requirements of RCRA, no legal avenues exist for the Agency to provide relief from the LDR's for small entities. The only relief available for small entities are the existing small quantity generators 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 three 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 one approach. It can only be stated that minimal impacts are anticipated for small entities under the approach employed in dealing with the issues in today's rule.

### C. Paperwork Reduction Act

With the exception of the requirement to include the underlying hazardous constituents on the notification, the information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* and have been assigned control number 2050-0085.

The information collection requirements associated with the amended notification requirements, requiring generators and treaters of certain D001 and D002 wastes to include the underlying hazardous constituents on the notification, 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.* These requirements are not effective until OMB approves them and a technical amendment to that effect is published in the *Federal Register*. An Information Collection Request document has been prepared by EPA (ICR No. 1442.05) and a copy may be obtained from Sandy Farmer, Information Policy Branch, EPA, 401 M Street, SW. (PM-223Y), Washington, DC 20460 or by calling (202) 260-2740.

Public reporting burden for this collection of information is estimated to average about 3 to 6 hours per response for generators and 3 hours per response for treaters, including time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223Y, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Jonathan Gledhill."

### VII. Interim Final Rule Justification

EPA finds that there is good cause to issue this rule as an interim final rule, without having first proposed it. (The

Agency notes, however that the Notice of Data Availability and the accompanying Supplemental Information Report did provide substantial notice to affected parties of, and an opportunity to comment on, the types of action the Agency is taking here, and specifically put persons on notice that there might not be any further opportunity for public comment before the Agency took final action. Thus, it is not clear that EPA is required to invoke the good cause exception to the Administrative Procedure Act's notice and comment requirements. (5 U.S.C. 553 (b)(3)(B).) Because the treatment standards for certain ignitable and corrosive wastes were vacated, once the courts mandate issues, a situation will exist whereby those wastes cannot be land disposed (except in no-migration units) unless EPA repromulgates a treatment standard. This creates a *bona fide* emergency, because without a legal means to dispose of wastes, production would have to stop. It is impractical to follow notice and comment rulemaking procedures in time to avoid this result, and thus the good cause exemption is justified. 5 U.S.C. 553(b)(3)(B).

It has been argued that EPA could stay the prohibition to prevent this situation from arising. The Agency disagrees. In the first place, EPA believes that the prohibition that is operating is not merely regulatory but statutory as well, since it involves wastes that were covered (for this purpose) by RCRA section 3004(g)(5) and the absolute prohibition (generally termed the hard hammer) in RCRA 3004(g)(6)(C).<sup>5</sup> See 976 F.2d at 18-19 ("[Congress] has chosen to enforce [the statutory deadlines] by decreeing that any hazardous waste that is not covered by a *valid* regulation within the date specified will be denied land disposal" (emphasis added).) Second, even

<sup>5</sup> For reasons discussed below in the preamble text, the Agency reads the hard hammer as applying to characteristic as well as listed wastes. This has been the Agency's position on the issue, see, e.g., 56 FR at 41165 (Aug. 19, 1991), and reflects Congressional intent. H. Rep. No. 1133, 98th Cong. 2d Sess. at 88 (Conference Report). The Agency is aware of arguments that the hard hammer provision need not apply here, either because the Agency has already met its obligations by issuing rules for characteristic wastes, or because the hard hammer can be read as not applying to characteristic wastes. The Agency does not find these arguments persuasive. In the end, there is no reason that prohibitions should operate differently for characteristic and listed wastes. Furthermore, the necessary consequence of these arguments is that characteristic wastes could be disposed for a relatively indefinite period without having to be treated to satisfy the RCRA 3004(m) standard, even though the section 3004(g)(5) prohibition date has passed. The Agency does not believe that the statute can reasonably be interpreted to give this result.

without invoking the hard hammer, EPA does not believe the statute allows a situation whereby a prohibition date has passed, and wastes covered by that prohibition can be land disposed without treatment (unless, of course, the wastes are subject to some type of capacity variance or are being disposed in a no-migration unit). Yet this is the necessary consequence of arguing that EPA may permissibly stay a prohibition once the prohibition date has passed. Consequently, it is the Agency's view that unless it issues treatment standards to replace those vacated by the court, there would be an absolute prohibition of land disposal of the affected wastes, and that in light of this, there is good cause to issue the present interim final rule restoring treatment standards for those wastes.<sup>6</sup>

### List of Subjects

#### 40 CFR Part 264

Hazardous waste, Packaging and containers, Reporting and recordkeeping requirements.

#### 40 CFR Part 265

Hazardous waste, Packaging and containers.

#### 40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

#### 40 CFR Part 270

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

#### 40 CFR Part 271

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

Dated: May 10, 1993.

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:

<sup>6</sup> At the least, this is a permissible interpretation of the land disposal statutory provisions, which in essence command that prohibited wastes be pretreated before land disposal, and make this a paramount statutory objective (RCRA sections 1002(b)(7) and 1003(a)(6)).

# **PART 264—STANDARDS FOR OWNER AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES**

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

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

2. Section 264.1, paragraph (g)(6) is revised to read as follows:

## **§ 264.1 Purpose, scope and applicability.**

(g) \* \* \*

(6) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in § 260.10 of this chapter, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in § 268.42, Table 2, of this chapter), or corrosive (D002) waste, to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in § 264.17(b) of this part.

# **PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES**

3. The authority citation for part 265 continues to read as follows:

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

4. Section 265.1, paragraph (c)(10) is revised to read as follows:

## **§ 265.1 Purpose, scope and applicability.**

(c) \* \* \*

(10) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in § 260.10 of this chapter, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in § 268.42, Table 2, of this chapter), or corrosive (D002) waste, in order to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in § 265.17(b).

# **PART 268—LAND DISPOSAL RESTRICTIONS**

5. The authority citation for part 268 continues to read as follows:

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

6. In § 268.1, paragraphs (e) (4) and (5) are added to read as follows:

## **§ 268.1 Purpose, scope and applicability.**

(e) \* \* \*

(4) *De minimis* losses to wastewater treatment systems of commercial chemical product or chemical intermediates that are ignitable (D001), or corrosive (D002), and that contain underlying hazardous constituents as defined in § 268.2 of this part, are not considered to be prohibited wastes. *De minimis* is defined as 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.

(5) Land disposal prohibitions do not apply to laboratory wastes displaying the characteristic of ignitability (D001) or corrosivity (D002), that are commingled with other plant wastewaters under designated circumstances: ignitable and corrosive laboratory wastes containing underlying hazardous constituents from laboratory operations, that are mixed with other plant wastewaters at facilities whose ultimate discharge is subject to regulation under the CWA (including wastewaters at facilities which have eliminated the discharge of wastewater), provided that the annualized flow of laboratory wastewater into the facility's headwork does not exceed one percent, or provided that the laboratory wastes' combined annualized average concentration does not exceed one part per million in the facility's headwork.

7. In § 268.2, paragraph (i) is added to read as follows:

## **§ 268.2 Definitions applicable in this part.**

(i) *Underlying hazardous constituent* means any regulated constituent present at levels above the F039 constituent-specific treatment standard at the point of generation of the hazardous waste.

8. In § 268.7, the introductory text of paragraph (a), and paragraphs (a)(1)(ii) and (b)(4)(ii) are revised to read as follows:

## **§ 268.7 Waste analysis and recordkeeping.**

(a) Except as specified in § 268.32 if a generator's waste is listed in 40 CFR part 261, subpart D, the generator must test his waste, or test an extract using the test method described in part 261, appendix II of this chapter, or use

knowledge of the waste, to determine if the waste is restricted from land disposal under this part. Except as specified in § 268.32, if a generator's waste exhibits one or more of the characteristics set out at 40 CFR part 261, subpart C of this chapter, the generator must test an extract using the test method described in appendix IX of this part, or use knowledge of the waste, to determine if the waste is restricted from land disposal under this part. If the generator determines that his waste displays the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by INCIN, FSUBS, or RORGS of § 268.42, Table 1), or the characteristic of corrosivity (D002), and is prohibited under § 268.37, the generator must determine what underlying hazardous constituents (as defined in § 268.2 of this part), are reasonably expected to be present in the D001 or D002 waste.

(1) \* \* \*

(ii) The corresponding treatment standards for wastes F001–F005, F039, wastes prohibited pursuant to § 268.32 or RCRA section 3004(d), and for underlying hazardous constituents (as defined in § 268.2 of this part), in D001 and D002 wastes if those wastes are prohibited under § 268.37 of this part. Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the applicable wastewater (as defined in § 268.2(f)) or nonwastewater (as defined in § 268.2(d)) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the CFR section(s) and paragraph(s) where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in § 268.42, the applicable five-letter treatment code found in Table 1 of § 268.42 (e.g., INCIN, WETOX) also must be listed on the notification.

(b) \* \* \*

(4) \* \* \*

(ii) The corresponding treatment standards for wastes F001–F005, F039, wastes prohibited pursuant to § 268.32 or RCRA section 3004(d), and for underlying hazardous constituents (as defined in § 268.2 of this part), in D001 and D002 wastes if those wastes are prohibited under § 268.37 of this part. Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the applicable wastewater (as defined in § 268.2(f)) or nonwastewater (as defined in § 268.2(d))

category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the CFR section(s) and paragraph(s) where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in § 268.42, the applicable five-letter treatment code found in Table 1 of § 268.42 (e.g., INCIN, WETOX) also must be included on the notification.

9. In § 268.9, paragraph (a) is revised to read as follows:

**§ 268.9 Special rules regarding wastes that exhibit a characteristic.**

(a) The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under subpart D of this part. For purposes of part 268, the waste will carry the waste code for any applicable 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 the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not

treated by INCIN, FSUBS, or RORGS of § 268.42, Table 1), or the characteristic of corrosivity (D002), and is prohibited under § 268.37 of this Part, the generator must determine what underlying hazardous constituents (as defined in § 268.2 of this Part), are reasonably expected to be present in the D001 or D002 waste.

10. Section 268.37 is added to read as follows:

**§ 268.37 Waste specific prohibitions—Ignitable and corrosive characteristic wastes whose treatment standards were vacated.**

(a) Effective August 9, 1993, the wastes specified in 40 CFR 261.21 as D001 (and is not in the High TOC Ignitable Liquids Subcategory), and specified in § 261.22 as D002, 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. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

(b) Effective February 10, 1994, the wastes specified in 40 CFR 261.21 as D001 (and is not in the High TOC

Ignitable Liquids Subcategory), and specified in § 261.22 as D002, that are managed in systems defined in 40 CFR 144.6(e) and 146.6(e) as Class V injection wells, that do not engage in CWA-equivalent treatment before injection, are prohibited from land disposal.

11. In § 268.40, paragraph (b) is revised to read as follows:

**§ 268.40 Applicability of treatment standards.**

(b) A restricted waste for which a treatment technology is specified under § 268.42(a), or hazardous debris for which a treatment technology is specified under § 268.45, may be land disposed after it is treated using that specified technology or an equivalent treatment method approved by the Administrator under the procedures set forth in § 268.42(b). For waste displaying the characteristic of ignitability (D001) and reactivity (D003), that are diluted to meet the deactivation treatment standard in § 268.42(a) Tables 1 and 2 (DEACT), the treater must comply with the precautionary measures specified in 40 CFR 264.17(b) and 265.17(b) of this chapter.

12. In § 268.41(a), Table CCWE, the entry for F039 is amended by revising the "Waste code" and the "See also" columns to read as follows:

**§ 268.41 Treatment standards expressed as concentrations in waste extract.**

(a) \* \* \*

**268.41 TABLE CCWE.—CONSTITUENT CONCENTRATIONS IN WASTE EXTRACT**

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS No. for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/l)	Notes
F039 (and D001 and D002 wastes prohibited under § 268.37).	* * *	Table 2 in 268.42, and Table CCW in 268.43.	* * *	* * *	* * *	* * *	* * *	* * *

13. In § 268.42(a) the entries for D001 and D002 in Table 2 are revised to read as follows:

**§ 268.42 Treatment standards expressed as specified technologies.**

(a) \* \* \*

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituent	Technology code	
				Wastewaters	Nonwastewaters
D001 ..	Table CCWE in 268.41 and Table CCW in 268.43.	All descriptions based on 40 CFR 261.21, except for the §261.21(a)(1) High TOC subcategory, managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.	NA .....	DEACT, and meet F039; or FSUBS; RORGS; or INCIN.	DEACT, and meet F039; or FSUBS; RORGS; or INCIN.
D001 ..	NA .....	All descriptions based on 40 CFR 261.21, except for the §261.21(a)(1) High TOC subcategory, managed in CWA, CWA-equivalent, or Class I SDWA systems.	NA .....	DEACT .....	DEACT.
D001 ..	NA .....	All descriptions based on 40 CFR 261.21(a)(1)—High TOC Ignitable Liquids Subcategory—Greater than or equal to 10% total organic carbon.	NA .....	NA .....	FSUBS; RORGS; or INCIN.
D002 ..	Table CCWE in 268.41 and Table CCW in 268.43.	Acid, alkaline, and other subcategory based on 261.22 managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.	NA .....	DEACT and meet F039.	DEACT and meet F039.
D002 ..	NA .....	Acid, alkaline, and other subcategory based on 261.22 managed in CWA, CWA-equivalent, or Class I SDWA systems.	NA .....	DEACT .....	DEACT.

Note: NA means Not Applicable.

14. In §268.43(a), Table CCW, the entry for F039 is amended by revising the "Waste code" and the "See also" columns to read as follows:

**§268.43 Treatment standards expressed as waste concentrations.**

(a) \* \* \*

268.43 TABLE CCW.—CONSTITUENT CONCENTRATIONS IN WASTES

Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS No. for regulated hazardous constituent	Wastewaters		Nonwastewaters	
					Concentration (mg/l)	Notes	Concentration (mg/l)	Notes
F039 (and D001 and D002 wastes prohibited under §268.37).	* * *	Table 2 in 268.42, and Table CCWE in 268.41.	* * *	* * *	* * *	* * *	* * *	* * *

**PART 270—EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM**

15. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

16. In §270.42, Appendix I is amended by redesignating item B(1)(c) as B(1)(d), removing the second item B(1)(b), and adding item B(1)(c) to read as follows:



**Appendix I to Section 270.42—  
Classification of Permit Modifications**

Modifications	Class
1. * * *	
c. To incorporate changes associated with underlying hazardous constituents in ignitable or corrosive wastes .....	1

**B. General Facility Standards:**

1. \* \* \*

c. To incorporate changes associated with underlying hazardous constituents in ignitable or corrosive wastes .....

**Modifications****Class**

1 Class 1 Modifications requiring prior Agency approval.

**PART 271—REQUIREMENTS FOR  
AUTHORIZATION OF STATE  
HAZARDOUS WASTE PROGRAMS**

17. 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**

18. Section 271.1(j) is amended by adding the following entries in chronological order to Table 1 and Table 2:

**§ 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
May 24, 1993.	Land disposal restrictions for characteristic wastes whose treatment standards were vacated.	[Insert Federal Register page numbers]	August 9, 1993.

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

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
August 9, 1993.	Prohibition on land disposal of characteristic wastes whose treatment standards were vacated.	3004(g)(6)(c) .....	May 24, 1993 [insert FR page numbers].

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