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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 260, 261, 264, 265, and 266

[SWH-FRL 2703-7]

Hazardous Waste Management System; Definition of Solid Waste

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: On April 4, 1983, EPA proposed to amend its existing definition of solid waste used in regulations implementing Subtitle C of the Resource Conservation and Recovery Act (RCRA). Most of the proposal dealt with the question of which materials are solid and hazardous wastes when they are recycled. The Agency also proposed general and specific standards for various types of hazardous waste recycling activities.

We are finalizing much of the rule as proposed, but have made a number of changes and clarifications. The effect of the rule is to clarify the extent of EPA's jurisdiction over hazardous waste recycling activities and to set forth the regulatory regime for recycling activities subject to the Agency's jurisdiction.

DATES: *Effective Dates*: These rules with exceptions noted below, become effective on July 5, 1985. Sections 261.1(b), 261.2(e), and Part 266 Subpart F (rules for which the regulated community does not need time to come into compliance) are effective December 20, 1984.

Compliance Dates: All persons who generate, transport, treat, store, or dispose of wastes which are covered by today's regulation must notify EPA or a State authorized by EPA to operate the hazardous waste program of their activities under Section 3010 of RCRA no later than April 4, 1985 unless these persons previously have notified EPA or an authorized State that they generate, transport, treat, store, or dispose of hazardous wastes and have received an identification number. Notification instructions are set forth in 45 FR 12746, February 26, 1980.[1]

All existing hazardous waste management facilities which treat, store, or dispose of hazardous waste covered by today's rule and which qualify to manage these wastes under interim status under section 3005(e) of RCRA must file with EPA or a State authorized by EPA to operate the hazardous waste program to notification by April 4, 1985, and a Part A permit application by July 5, 1985. Under the Solid and Hazardous Waste Act Amendments of 1984, a facility is eligible for interim status if they were either in existence on November 19, 1980 or were in existence on the effective date of any statutory or regulatory change under RCRA that requires them to obtain a section 3005 permit. See RCRA amended section 3005(e). Facilities which have qualified for interim status will not be allowed to manage the wastes covered by today's rule after July 5, 1985, unless: (1) They file a notification with EPA or an authorized State by April 4, 1985, and (2) they submit an amended Part A permit application with EPA or an authorized State by July 5, 1985 (see 40 CFR 270.10(g)).

ADDRESSES: The official record for this rulemaking is located in Room S-212A, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 and is available for viewing from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding holidays.

FOR FURTHER INFORMATION CONTACT: RCRA Hotline, toll free, at (800) 424-9346 or at (202) 382-3000. For technical information, contact Matthew A. Straus, Office of Solid Waste (WH-562B), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 (202) 475-8551.

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[1] Under the Solid Waste Disposal Amendments of 1980 (Pub. L. 96-452 (October 21, 1980)), EPA was given the option of waiving the notification requirement under section 3010 of RCRA, following revision of the section 3001 regulations, at the discretion of the Administrator.

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SUPPLEMENTARY INFORMATION: Under Subtitle C of RCRA, EPA is granted the authority to regulate hazardous wastes. Hazardous wastes, however, are defined in the statute as a subset of "solid waste." (See Sections 1004(5) and 1004(27).) It thus is necessary to define what a solid waste is in order to determine the extent of EPA's jurisdiction under Subtitle C.

On April 4, 1983, EPA proposed to amend the existing regulatory definition of solid waste. See 48 FR 14472. The proposal defined which materials were solid wastes when disposed of, burned, incinerated, or recycled. The greater part of the proposal dealt with the question of which materials are solid wastes when recycled—the area where the extent of the Agency's authority is not explicit on the face of the statute. EPA also proposed regulatory standards for various types of hazardous waste recycling activities, with the standards varying according to the type of activity.

EPA received well over one hundred comments on the proposed rule, including comments from states, waste generators, waste recyclers, environmental groups, and members of the public. The Agency also held three public hearings on the proposal, at which we received additional comments. Virtually all commenters agreed that the proposed rule was a substantial improvement over the existing regulations because it replaced the "sometimes discarded" feature of the existing definition.[2] The majority of the commenters also supported the proposal (or at least key parts of it). Many commenters, however, expressed concern that the proposed rules were very complicated. Other criticisms were substantive. Some waste generators challenged the Agency's classification of certain recycling activities as waste management, or even reiterated a challenge to EPA's authority under Subtitle C of RCRA to regulate recycled materials as solid wastes. Commercial recyclers were divided in their reaction, with commercial chemical waste recyclers (who would generally be regulated more comprehensively under the proposal than under the existing rules) being generally favorable, while recyclers of metal-containing waste were generally opposed.

Reaction from states also was divided. (There were fourteen comments from state or government agencies. The State of Nebraska also conducted an informal survey of 25 states for their reactions to the proposed rules. Some of the survey respondents were among the direct commenters to the Agency.) Although there were favorable comments, some state officials expressed concern with some of the

[2] 40 CFR 261.2(b) (2) and (3) indicate that spent materials and by-products that sometimes are discarded are solid wastes. This standard applies to all materials of a given type and so charges generators with knowledge of what other generators do with the same material.

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proposed conditional exemptions from regulation. They argued that the exemptions were too broad, particularly with respect to lack of notification, recordkeeping, and waste tracking provisions. Some states also criticized the absence of storage controls on certain recycling operations. States and administrative agencies were virtually unanimous in urging the Agency to take more and immediate action against burning hazardous waste-derived fuels and contaminated used oil.

The major environmental group to comment on the proposal was critical of many of the provisions, particularly the conditional exemptions for certain hazardous waste recycling activities. The Congressional Office of Technology Assessment voiced similar criticisms. Certain (but not all) segments of the non-recycling commercial hazardous waste management community also criticized the conditional exemptions.

After reviewing the comments, EPA has decided to adopt the proposal as a final rule, but with a number of modifications and clarifications. In defining s solid waste, the key concept of the proposal was that ordinarily one must know both what a material is and how it is being recycled before knowing whether it is a solid waste. We are retaining this concept, which had substantial support from commenters, in the final rule. Although we are adhering to this conceptual approach, we are making substantive changes regarding which secondary materials are wastes when burned as fuels and when placed on the land, and also regarding certain of the proposed exclusions, which we now think were ambiguous or overbroad. In addition, we are clarifying how the regulations apply to the recycling of hazardous scrap metal; we are also indicating explicitly that certain types of materials being recycled are not solid wastes.

We are also altering the proposed regulatory regime. The most significant change is to eliminate most of the proposed conditional exemptions. These exemptions, we now believe, would not have adequately protected human health and the environment from the risks of leaks and spills.

We also have made a number of drafting changes to clarify the definition of solid waste and its accompanying regulatory provisions. We have revised the definition to state more clearly the types of recycling activities that do or do not constitute waste management, and have included a chart of materials and recycling activities (Figure 1 to the proposed rule) as part of the final rule. Accompanying definitions have been transferred to a new applicability provision in § 261.1. We also are expressing certain exceptions to general principles as variances, contained in Part 260.

Today's preamble is organized into four large sections. Part I contains a background discussion and a summary description of the final regulation. Part II deals with the question of which materials are solid wastes, and especially the question of which materials are solid (and hazardous)[3] wastes when recycled. Part III discusses the management standards for hazardous waste recycling activities, and Part IV addresses the regulatory impacts of the final rule.

Described in more detail, Part I of the preamble describes briefly the Agency's legal authority, and alternative approaches the Agency considered instead of the one actually adopted. The final section of this part of the preamble summarizes the portions of the final rule stating which hazardous secondary materials are and are not RCRA Subtitle C wastes when recycled.

Part II of the preamble discusses the Agency's jurisdiction (under Subtitle C) over secondary materials that are to be recycled. We explain each provision in the rule that states which hazardous secondary materials are and are not RCRA Subtitle C wastes when recycled. We first explain the new definitions involved in the rule—principally regarding types of secondary materials and types of thermal combustion units. We next discuss each provision of the rule stating when hazardous secondary materials that are to be recycled are wastes. For each provision, we discuss the proposed rule, the final rule, how and why it differs from the proposed rule, and respond to major comments. (A separate background document responding to each comment is part of the record for this rulemaking.)

In Part III, we describe the regulatory standards for hazardous wastes that are to be recycled. We also discuss in this section the variance provisions that are part of the final rule.

Part IV summarizes the economic and regulatory impacts expected to result from this regulation. A separate report on the economic impacts is part of the record for this rulemaking.

[3] Although hazardous wastes are a subset of solid wastes under RCRA, EPA's regulatory authority under Subtitle C applies only to hazardous wastes. Since the present regulations apply only to Subtitle C, we have chosen to make the definition of solid waste applicable to those materials that also are hazardous wastes. See Section II.A. of Part 2 below. The terms thus are synonymous for purposes of the Subtitle C regulations. In addition, we are using the terms (as well as the term "waste" or "Subtitle C waste") synonymously in this preamble.

Part I: Introduction and Background

I. Legal Authority

The Agency in the April 4 preamble described fully its position that Congress gave EPA authority to regulate recycled secondary materials as solid and hazardous wastes under the Subtitle C regulations. See 48 FR 14473, 14502–505. Subsequent legislative pronouncements again confirm our interpretation. See H.R. Rep. No. 98–198, 98th Cong. 1st Sess. at 46. Some commenters repeated old arguments challenging the Agency's authority, but raised no points not already answered. We consequently see no need to discuss these points again. In any case, the recent Hazardous and Solid Waste Act Amendments of 1984 (HSWA) appear to have settled this question by explicitly requiring EPA to adopt "standards applicable to the legitimate use, reuse, recycling, and reclamation of (hazardous) wastes" (RCRA amended section 3001(d)(2)). We add that the Agency's construction is made in the context of a "legislative directive . . . (that) is implicit rather than explicit", and that the construction is a "reasonable interpretation" of the ambiguous statutory term "solid waste". *Chevron U.S.A.* v. *NRDC*, —— U.S. ——, —— (1984). The Agency's construction thus is surely a "permissible" one. *Id.* at ——.

Certain other commenters indicated that RCRA provides EPA with unrestricted authority to regulate all recycling as waste management. The Agency does not fully accept this argument. We agree that RCRA embodies a general principle that most hazardous secondary materials [4] are considered to be hazardous wastes when recycled. Congress enacted a regulatory approach to deal with the problem of ensuring safe hazardous waste management. (H.R. Rep. No. 94–1491, 98th Cong. 2d Sess. at 4.) We indeed believe that the statute expresses a presumption that accumulated hazardous secondary materials are solid and hazardous wastes in order that this regulatory approach be applied to "the last remaining loophole in environmental law" (*id.*). We believe, however, that the grant of authority in RCRA over recycling activities is not

[4] Throughout this preamble, EPA refers for convenience to "secondary materials." We mean a material that potentially can be a solid and hazardous waste when recycled. The rule itself refers to the following types of secondary materials: Spent materials, sludges, by-products, scrap metal, and commercial chemical products recycled in ways that differ from their normal use. The rule does not use the term secondary materials.

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unlimited. Specifically, we do not believe our authority extends to certain types of recycling activities that are shown to be very similar to normal production operations or to normal uses of commercial products. We also do not accept the argument that a potentially harmful recycling practice is invariably subject to regulation under Subtitle C, since potential environmental harm is not always a determinative indicator of how closely a recycling activity resembles waste management. We again believe that this construction is a permissible one. *Chevron supra*, —— U.S. at ——. (This discussion is developed further in Section H. of Part II. of the preamble.)

II. Alternatives

A. Alternative Approaches for Determining When Secondary Materials Which Are To Be Recycled Are RCRA Solid Wastes

As stated in the preamble to the proposed rule, determining which secondary materials are wastes when recycled presents conceptual and practical difficulties. The Agency considered several approaches other than the one ultimately adopted, but ended by retaining the overall approach proposed initially.

It is evident that the Agency is adopting a complicated regulatory scheme. There are two simpler alternatives: to say that all secondary materials being recycled are wastes, or that all are not wastes. Neither of these alternatives is satisfactory. The Agency's May 19, 1980 definition took essentially the former approach and it proved unacceptable to both the Agency and the regulated community (see 48 FR 14475). Comments were virtually unanimous in urging the Agency to reject this approach.

Not classifying recycled materials as wastes is equally unacceptable. We read the statute to state that hazardous secondary materials being recycled are wastes and that we ordinarily have jurisdiction to regulate most recycling activities involving these materials. We also believe that regulation of most of these activities is necessary to protect human health and the environment. Furthermore, we doubt whether completely avoiding regulation would necessarily promote recycling, as some commenters maintain. The Agency is impressed by comments of both generators, states and members of the recycling community who state that some regulation is needed to assure both the public and generators that their wastes will not be mishandled when sent to recyclers. See comments of National Association of Solvent Reclaimers, Washington, D.C. Public Hearing, June 16, 1983; Comments of American Electronics Association, San Francisco Public Hearing, June 23, 1983, Comments of States of Iowa and Michigan (August, 1983). These persons maintain that regulation of these activities will encourage wastes both to be recycled, and recycled in a responsible manner.

Another approach, discussed in the April 4 preamble, would be to use a standard based on value, whereby a recycled material would count as a solid waste when a person other than the generator is paid to recycle it. Although this factor is relevant for enforcement purposes in determining whether a recycling activity is a sham, the Agency continues to believe that it is not a successful regulatory approach for the reasons given in the April 4 preamble. See 48 FR 14478–481. Most commenters agreed with the Agency that this approach should not be adopted.

The Agency also attempted to fashion a narrative definition stating categorically whether secondary materials are or are not wastes. The narrative standard would be based on whether materials are typically dealt with as commodities, and whether they contain significant concentrations of non-recyclable toxic constituents not customarily found in analogous raw materials. (See 48 FR 14476 at n.7.)

The Agency continues to believe that this type of definition is too subjective to serve as a self-implementing standard. Commenters agreed. The Agency also continues to think, and commenters generally agreed, that in most cases one must know both what the material is and how it is being recycled before determining whether it is a waste. A narrative definition based on the nature of the material itself thus cannot serve successfully as a regulatory standard.[5]

B. Alternatives for Regulating Hazardous Wastes That Are To Be Recycled

In considering how to regulate hazardous wastes that are to be recycled, the Agency differentiated at proposal between facilities presenting a significant risk of waste overaccumulation before recycling and those that did not. We viewed overaccumulation as the chief danger to guard against, and so proposed to conditionally exempt from regulation those types of recycling operations that do not present a significant risk of overaccumulation before recycling. See 48 FR 14477, 14486. The chief types of recycling operations that would have been conditionally exempt were those in which a generator reclaimed its own wastes, those in which a reclaimer reclaimed for its own subsequent use, or when wastes were reclaimed pursuant to batch tolling agreements. *Id.* At the same time, we indicated that we were continuing to evaluate whether hazardous waste leaks and spills could occur at these operations (before prolonged accumulation) and whether regulation was necessary to protect human health and the environment. *Id.* at 14477. In essence, we investigated further the hypothesis that if these wastes were handled as if they were products, and were not overaccumulated, they would be managed safely without RCRA controls.

We have come to the conclusion that most of the conditional exemptions that we proposed were unjustified, because the risk of damage from spills and leaks at these facilities indicates that regulation is necessary to protect human health and the environment. Simply because a waste is likely to be recycled will not ensure that it will not be spilled or leaked before recycling occurs. In the first place, the analogy we drew at proposal—between wastes stored before certain types of recycling and products stored before use—is frequently incorrect. Wastes in many cases have little independent economic value, but are recycled to avoid disposal costs. Persons storing this type of hazardous waste before recycling are very much like persons storing hazardous waste before disposal: there is nothing about the waste that makes it so valuable that safe handling is assured absent regulation.

Furthermore, safe handling is not always assured even for hazardous wastes that are more like commodities in terms of value. A company's decision on how carefully wastes are handled before recycling turns chiefly on a range of factors—principally the value of the wastes being recycled and the value of the end products of recycling versus the cost of purchasing additional raw materials, the profit margin of the facility, and the cost of improving the integrity of the facility. Unless the wastes are extremely valuable (as in legitimate precious metal reclamation) there is no imperative incentive to avoid leaks and spills. In confirmation, there have been massive leaks of high purity

[5] The Agency does believe that some secondary materials are inherently waste-like, and will specify in the rule that these materials are solid wastes. See § 261.2(d). For the most part, however, we think that a secondary material's identity as a waste turns both on what it is, and how it is recycled.

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solvents and gasoline (to name only some of the more valuable commodities) from product storage tanks, showing the risk of spillage of stored commodities. The recent addition of Subtitle I to RCRA to control leaks from underground product storage tanks confirms that the risk of harm from spillage is significant. Indeed, there have been a number of instances of groundwater contamination caused by improper storage of hazardous wastes awaiting reclamation by their generator, hazardous wastes being reclaimed pursuant to batch tolling agreements, and hazardous wastes being reclaimed before use by the reclaimer—the situations that would have been conditionally exempt under the proposal. (See Appendix A.)

Equally important, the Agency already has determined that it is necessary to regulate hazardous waste storage in order to protect human health and the environment, and has also determined that regulations are needed to prevent the "uncontrolled release of hazardous waste constituents into the environment." See 46 FR 2802, 2807 (January 12, 1981). These prior findings are relevant to the question of regulating hazardous waste storage before recycling. There is a risk, as stated above, that spills and leaks of hazardous waste will occur, even if the wastes eventually will be recycled. Spills and leaks are the principal example of uncontrolled hazardous waste releases from storage and thus ordinarily require regulatory control. The Agency is persuaded that its existing findings are valid for hazardous wastes stored before recycling except in those situations in which wastes are so economically valuable that there is an economic imperative to avoid release.

The Agency thus finds that the factual basis for most of the conditional exemptions in the proposal was not justified, and that the Agency's general findings as to the need to control hazardous waste storage are valid for these recycling situations. Hazardous wastes stored before reclamation—even where there is minimal risk of overaccumulation—still can present significant potential for harm to human health and the environment if mismanaged, and market mechanisms are insufficient to prevent mismanagement from occurring. Regulation thus is called for.

In determining the level of regulation to adopt for those facilities which would have been conditionally exempt, the Agency is guided by the principle that the paramount and overriding statutory objective of RCRA is protection of human health and the environment. The statutory policy of encouraging recycling is secondary and must give way if it is in conflict with the principal objective. See 48 FR 14474/1, 14482/2; see also H.R. Rep. No. 96-198, *supra*, at 40.[6] We accordingly have determined that, for the most part, the conditional exemptions we proposed were unwarranted and facilities recycling in these ways should be subject to regulation under the Subtitle C rules.

III. An Overview of the Final Definition of Solid Waste

A. Materials That Are Solid Wastes

The revised definition of solid waste states that any material that is abandoned by being disposed of, burned, or incinerated—or stored, treated, or accumulated before or in lieu of these activities—is a solid waste. The remainder of the definition states which materials are wastes when recycled.

The amended definition adopts the approach that for secondary materials being recycled, one must know both what the material is and how it is being recycled before determining whether or not it is a Subtitle C waste. This approach differs sharply from the existing definition (40 CFR 261.2), which states that all sludges, and virtually all other secondary materials (*i.e.* all those that are sometimes discarded by anyone managing them (see fn. 2 above)), are wastes no matter how they are recycled. In understanding the revised definition, therefore, one must consider the types of secondary materials in conjunction with types of recycling practices.

1. *Types of Recycling Activities That Are Within The Agency's Subtitle C Jurisdiction.* The definition states that four types of recycling activities are within EPA's jurisdiction:

- *Use constituting disposal.* This activity involves directly placing wastes or waste-derived products (a product that contains a hazardous waste as an ingredient) onto the land. Extending jurisdiction to waste-derived products placed on the land represents a change from the proposal;
- *Burning waste or waste fuels for energy recovery, or using wastes to produce a fuel;*
- *Reclamation.* This activity involves the regeneration of wastes or the recovery of material from wastes;
- *Speculative accumulation.* This activity involves either accumulating wastes that are potentially recyclable, but for which no recycling market (or no feasible recycling market) exists, or accumulating wastes before recycling unless 75% of the accumulated material is recycled during a one-year period. (This provision now includes the activity referred to in the proposal as overaccumulation.)

2. *Types of Secondary Materials That Are Within The Agency's Subtitle C Jurisdiction.* These categories of recycling activities then are divided further according to the type of secondary material involved—spent materials, sludges, by-products, or commercial chemical products (a division present in the existing regulations—see 40 CFR 261.2(b)(1)(3)). We also have clarified the proposal by adding a new category of secondary material—scrap metal.

"Spent materials" are materials that have been used and are no longer fit for use without being regenerated, reclaimed, or otherwise re-processed. Examples are spent solvents, spent activated carbon, spent catalysts, and spent acids.

"Sludges" are defined in RCRA and the implementing regulations as residues from treating air or wastewater, or other residues from pollution control operations. (See RCRA section 1004(26)(A) and 40 CFR 260.10.)

"By-products" are defined essentially the same way as in the existing definition to encompass those residual materials resulting from industrial, commercial, mining, and agricultural operations that are not primary products, are not produced separately, and are not fit for a desired end use without substantial further processing. The term includes most secondary materials that are not spent materials or sludges. Examples are process residues from manufacturing or mining processes, such as distillation column residues or mining slags.

"Commercial chemical products" are the commercial chemical products and intermediates, off-specification variants, spill residues, and container residues listed in 40 CFR 261.33. Although these materials ordinarily are not wastes when recycled (see 45 *FR* 78540-541, November 25, 1980), we are including them as wastes when they are recycled in ways that differ from their normal use, namely, when they are used in a manner constituting disposal, or when they are burned for energy recovery, (assuming these materials are neither a pesticide nor a commercial fuel).

[6] The Agency also does not believe that hazardous waste recycling will be discouraged in those situations that we now intend to regulate. Not only do the incremental costs of regulation appear to be minimal (see Part IV of this preamble), but regulation can actually encourage recycling. See 45 FR 33092 (May 19, 1980) and Section II.A. above.

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"*Scrap metal*" is defined as bits or pieces of metal that are discarded after consumer use or that result from metal processing operations. Examples are scrap automobiles and scrap radiators (commonly referred to as post-consumer scrap) and scrap turnings and scrap fines (commonly referred to as obsolete scrap).

3. *Secondary Materials That Are Subtitle C Wastes When Recycled in Particular Ways.* As we indicated in the proposal, sludges and by-products sometimes are difficult to characterize as wastes or non-wastes when they are reclaimed. 48 *FR* 14476. Many by-products and sludges in the mining industry, for example, are routinely processed further to recover usable metals in a manner much like continued processing of the virgin ore. As stated above, neither the Agency nor any commenter could devise a self-implementing narrative standard that convincingly distinguishes between product-like and waste-like sludges and by-products being reclaimed.

The Agency thus has structured the final regulation so that the Agency must evaluate these materials individually before determining whether they are subject to RCRA jurisdiction when they are to be reclaimed. Thus, in the final regulation, only sludges and by-products listed in 40 CFR 261.31 and 261.32 are solid wastes when reclaimed.[7]

The Agency does not perceive this difficulty for the remaining types of recycling over which we have jurisdiction. Thus, all secondary materials (*i.e.* all spent materials, sludges, by-products, and scrap metal) are considered to be wastes when they are used in a manner constituting disposal, are burned for energy recovery or used to produce a fuel, or are accumulated speculatively. The Agency proposed that only listed by-products would be wastes when burned for energy recovery or used to produce a fuel, but is changing the proposal for the reasons stated in Section II.V.D. of Part 2 of the preamble.

[7] The Agency intends that residues derived from reclaiming listed by-products and sludges also be considered to be listed for purposes of this regulation. This is in accord with 40 CFR 261.3(c)(2) and (d)(2) and 40 CFR 260.22(b). These provisions state that residues derived from treating, storing, or disposing of listed hazardous wastes are also considered to be listed hazardous wastes, and, for delisting purposes, to have the same constituents of concern as the hazardous wastes from which they are derived. Under the amended definition of solid waste, therefore, if a reclaimer distills a listed by-product, and then reclaims the resulting distillation bottom, the distillation bottom also is considered to be a listed by-product and therefore a waste when reclaimed.

The following table, which appears in the regulation itself, summarizes when secondary materials are solid wastes when recycled:

TABLE 1. Matrix of Which Types of Secondary Materials Will be Defined as Solid and Hazardous Wastes When Recycled and Which Types of Recycling Activities Constitute Waste Management.

	Use constituting disposal	Burning for energy recovery, or use to produce a fuel	Reclamation	Speculative accumulation
Spent materials (both listed and nonlisted/characteristic).	Yes	Yes	Yes	Yes.
Sludges (listed)	Yes	Yes	Yes	Yes.
Sludges (nonlisted/characteristic)	Yes	Yes	No	Yes.
By-products (listed)	Yes	Yes	Yes	Yes.
By-products (nonlisted/characteristic)	Yes	Yes	No	Yes.
Commercial chemical products listed in 40 CFR § 261.33 that are not ordinarily applied to the land or burned as fuels.	Yes	Yes	No	No.
Scrap metal	Yes	Yes	Yes	Yes.

Yes—Defined as a solid waste
No—Not defined as a solid waste.

In addition, there are certain materials that are inherently waste-like, regardless of how they are recycled. The Agency has reserved the right to designate these materials as solid wastes, and has designated the chlorinated and dioxin dibenzofuran containing F020, F022–F023, F026, and F028 wastes as solid wastes no matter how they are recycled.

The Agency again emphasizes that to determine if a secondary material is a RCRA solid waste when recycled, one must examine both the material and the recycling activity involved. A consequence is that the same material can be a waste if it is recycled in certain ways, but would not be a waste if it is recycled in other ways. For example, an unlisted by-product that is reclaimed is not defined as a solid waste. However, the same by-product is defined as a waste if it is recycled by being (a) placed on the land for beneficial use, (b) incorporated into a product that is placed on the land for beneficial use, (c) burned as a fuel, (d) incorporated into a fuel, or (e) accumulated speculatively. Obviously, the by-product also is a waste whenever it is disposed of or incinerated rather than recycled.

B. Secondary Materials That Are Not Solid Wastes

Not all recycling activities involve waste management. Based on our reading of the statute and legislative history, the definition excludes two activities involving direct use or reuse of secondary materials, and one activity where these materials are recycled without first being reclaimed by being returned as a raw material substitute to the original primary production process. These activities ordinarily will not be considered to involve waste management because they are like ordinary production operations or ordinary usage of commercial products.

(1) *Using or reusing secondary materials as ingredients or feedstocks in production processes.* When secondary materials are *directly* used as an ingredient or a feedstock, we are convinced that the recycled materials are usually functioning as raw materials and therefore should not ordinarily be regulated under Subtitle C. Examples are using fly ash as a constitutent in cement, or using distillation bottoms from the manufacture of carbon tetrachloride as feedstock in producing tetrachloroethylene. However, when distinct components of the material are recovered as separate end products (i.e., recovering lead from scrap metal in smelting operations), the secondary material is not being used, but rather reclaimed and thus, would not be excluded under this provision. The other major exception to this provision is when spent materials, by-products, sludges or scrap metal are used as ingredients in waste-derived fuels or in waste-derived products that will be placed on the land. In these situations, not only is the spent material, sludge, scrap metal, or by-product a solid waste but the waste-derived product remains subject to RCRA jurisdiction as well.

(2) *Using or reusing secondary materials as effective substitutes for commercial products.* When secondary materials are *directly* used as substitutes for commercial products, we also believe these materials are functioning as raw materials and therefore are outside of RCRA's jurisdiction and, thus, are not wastes. Examples are certain sludges that are used as water conditioners and by-products hydrochloric acid from chemical manufacture used in steel

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pickling. In these examples, the recycled materials are substituting for other commercial products, and material values are not being recovered from them.

(3) *Return of secondary materials to the original primary production process in which they are generated without first reclaiming them.* When secondary materials are returned to the original primary production process (from which they are generated) without first being reclaimed, we likewise believe this recycling activity does not constitute waste management. This provision has been modified from the proposal to cover more precisely those closed-loop production processes that use secondary materials as return feed to the original primary process.

C. Variances From Classification as Solid Wastes

We also have promulgated variance provisions allowing the Regional Administrator or authorized States to determine that certain materials that are to be recycled are not solid wastes. There are three such variances:

• *Materials accumulated without sufficient amounts being recycled.* The Agency proposed that persons failing to recycle 75% of their accumulated waste material could petition the Regional Administrator to declare that the material is not a waste. We are retaining this provision and are formally terming it a variance;

• *Materials that are reclaimed and then reused within the original primary production process in which they were generated.* The Agency proposed a complete exclusion for this type of situation, referred to in the proposal as closed-loop recycling. We are now convinced that the proposal was too broad but that individual exclusions may be warranted; and

• *Materials that are reclaimed but must be reclaimed further before material recovery is completed.* This variance would allow individual consideration of whether an initial reclamation process is only minimal processing or whether it substantially completes the recycling process.

The following tables summarize the differences between the final and proposed rules with respect to the secondary materials that are and are not solid and hazardous wastes when recycled:

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Table 2: Secondary Materials That Are Solid and Hazardous Wastes When Recycled: Proposal v. Final Rule

	Use Constituting Disposal		Burning for Energy Recovery, Use to Produce a Fuel, or Fuels Containing These Materials		Reclamation		Speculative Accumulation	
	Final */	Proposal	Final	Proposal	Final	Proposal	Final	Proposal
Spent Materials (both listed and non-listed exhibitting a characteristic)	Yes...	Yes...	Yes...	Yes...	Yes...	Yes...	Yes...	Yes...
Sludges (listed)	Yes...	Yes...	Yes...	Yes...	Yes..	Yes...	Yes...	Yes...
Sludges (non-listed exhibiting a characteristic)	Yes...	Yes...	Yes...	Yes...	No...	No...	Yes...	Yes...
By-products (listed)	Yes...	Yes...	Yes...	Yes...	Yes..	Yes...	Yes...	Yes...
By-Products (non-listed exhibiting a characteristic)	Yes...	Yes...	Yes...	No...	No...	No...	Yes...	Yes...
Commercial chemical products listed in 40 CFR §261.33 that are not ordinarily applied to the land or burned as fuels	Yes...	Yes...	Yes...	Yes...	No...	No...	No...	No...
Scrap Metal	Yes...	Yes...	Yes...	**/	Yes...	**/	Yes...	Yes...

Yes = Defined as a solid waste
No = Not defined as a solid waste
*/ Final rule includes hazardous waste-derived products (products containing a hazardous waste) that are placed on the land. The proposal did not cover these waste-derived products.
**/ Some scrap metal was classified as a by-product under the proposed rule, and this type of scrap metal would not have been a waste when reclaimed or burned for energy recovery.

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TABLE 3. MATERIALS THAT ARE NOT SOLID AND HAZARDOUS WASTES WHEN RECYCLED: PROPOSAL V. FINAL RULE

Proposal	Final rule
(a) Secondary materials used or reused as ingredients.	Same, except materials used in a product that is applied to land for beneficial use are defined as wastes.
(b) Secondary materials used or reused as substitutes for raw materials in primary processes.	Modified and subsumed in d) below.
(c) Secondary materials used or reused in a particular function as a substitute for a commercial product.	Same.
(d) Secondary materials reclaimed at the plant site and returned to the original production process ("closed-loop recycling").	Modified to apply to secondary materials returned as raw materials to the original primary production process *without* first being reclaimed; in addition, secondary materials that are first reclaimed and then returned to the original process are eligible for a variance from being a solid waste.
(e) Unlisted sludges and by-products that are reclaimed.	Same.
(f) Unlisted by-products burned as fuels or incorporated into fuels.	Changed; these by-products are defined as wastes in the final rule.
(g) (Not specifically proposed).	Black liquor recycled as part of the Kraft paper process.
(h) (Not specifically proposed).	Spent sulfuric acid used in making virgin sulfuric acid.

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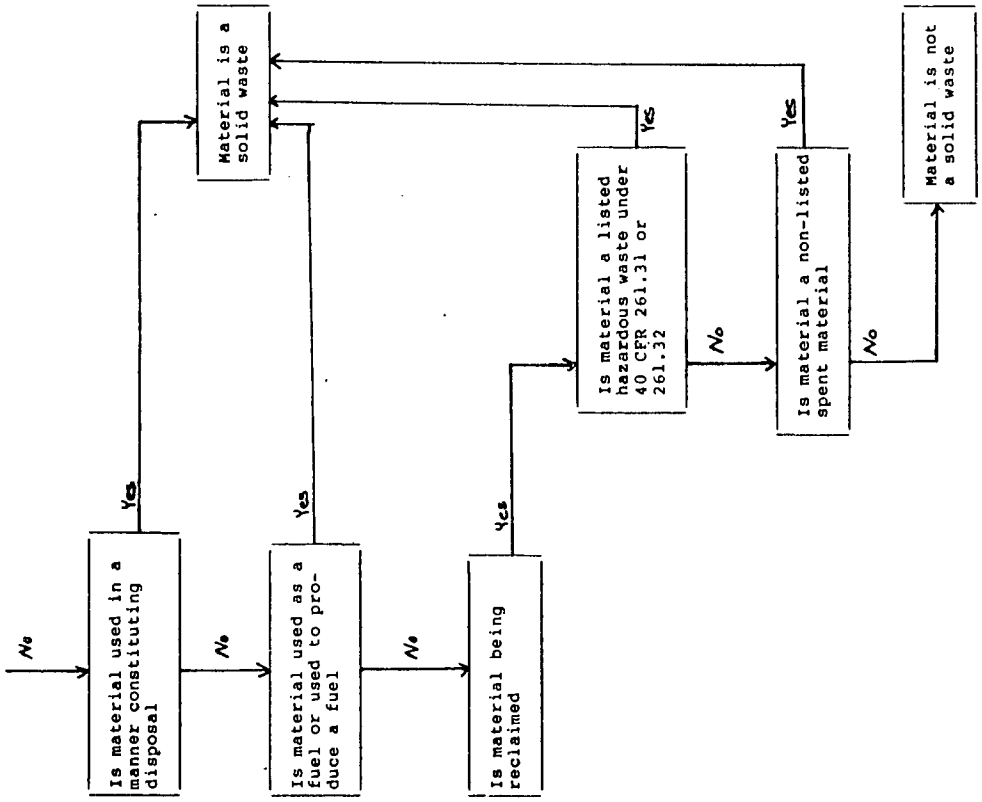
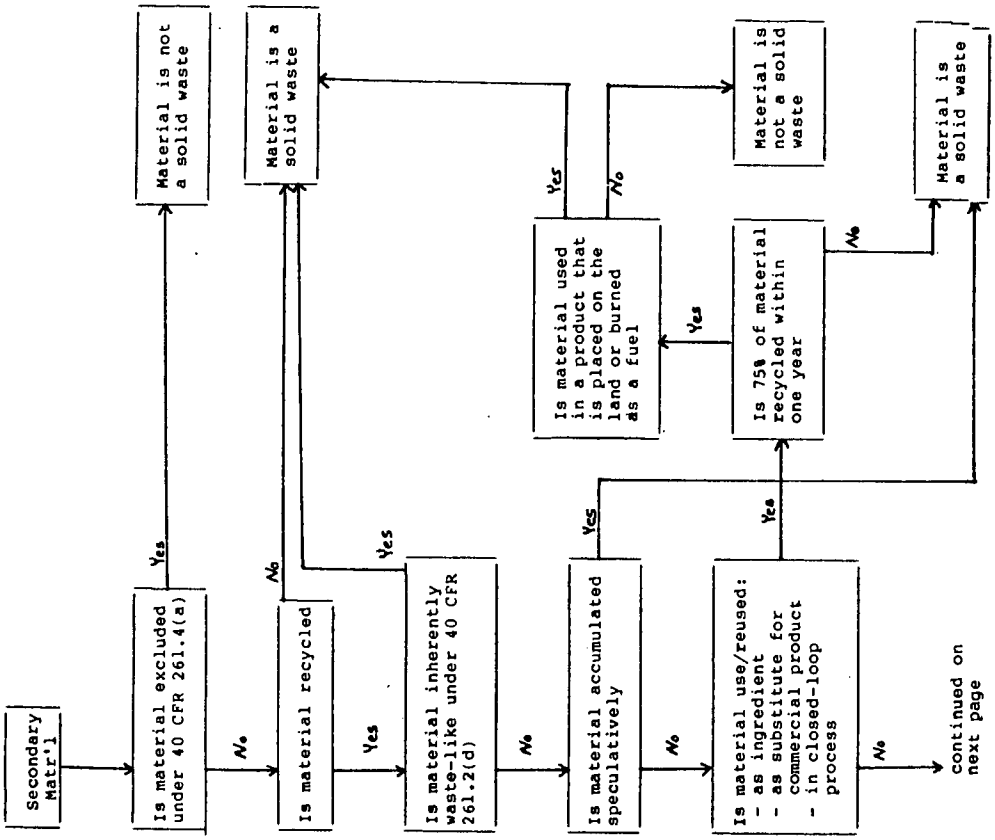


Table 4: Decision Tree for Deciding Which Secondary Materials Are Solid Wastes When Recycled



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Part II: Secondary Materials That Are Subtitle C Solid and Hazardous Wastes When Recycled

I. Definitions of Particular Terms Used in the Amended Definition of Solid Waste

A. Spent Materials/Sludges/By-Products/Scrap Metal

The final definition classifies the universe of secondary materials that are wastes when recycled as either sludges, spent materials, by-products, or scrap metal.[8] With the exception of scrap metal, this is the same classification scheme as in the proposed rule. See 48 FR 14476/2. We have not changed the proposed definition of "sludge," but are clarifying what we mean by spent materials and by-products. We also are explaining the new definition of scrap metal.

1. *Spent Materials.* We are continuing to define spent materials as those which have been used and are no longer fit for use without being regenerated, reclaimed, or otherwise re-processed. In response to comments, however, we have altered the wording of the definition of spent material to express this concept more clearly. As the proposal was worded, a spent material was one that had been used and no longer could serve its original purpose. The Agency's reference to original purpose was ambiguous when applied to situations where a material can be used further without being reclaimed, but the further use is not identical to the initial use. An example of this is where solvents used to clean circuit boards are not longer pure enough for that continued use, but are still pure enough for use as metal degreasers. These solvents are not spent materials when used for metal degreasing. The practice is simply continued use of a solvent. (This is analogous to using/reusing a secondary material as an effective substitute for commercial products.) The reworded regulation clarifies this by stating that spent materials are those that have been used, and as a result of that use become contaminated by physical or chemcial impurities, and can no longer serve the *purpose* for which they were produced. (This reworded definition appropriately parallels the definition of "used oil"—a type of spent material—in RCRA section 1004(36).)

In response to comment, we also note that leftover, unreacted raw materials from a process are not spent materials, since they never have been used. Unreacted raw materials thus are not subject to RCRA jurisdiction unless they are discarded by being abandoned.

2. *Scrap Metal*—a. *Classification.* We have added a new definition of scrap metal to the final regulations. At proposal, scrap metal that was generated as a result of use by consumers (copper wire scrap, for example) was defined as a spent material. (This type of scrap is usually referred to as "obsolete scrap".) Scrap from metal processing, on the other hand (such as turnings from machining operations) was defined as a by-product. (It is usually called "prompt scrap".) Yet the scrap metal in both cases is physically identical (*i.e.*, the composition and hazard of both by-product and spent scrap is essentially the same) and, when recycled, is recycled in the same way—by being utilized for metal recovery (generally in a secondary smelting operation).

In light of the physical similarity and identical means of recycling of prompt scrap and obsolete scrap, the Agency has determined that all scrap metal should be classified the same way for regulatory purposes. Rather than squeeze scrap metal into either the spent material or by-product category, we have placed it in its own category.

b. *Recycled Hazardous Scrap Metal is a Solid Waste.* We have further determined that for purposes of the regulations implementing Subtitle C of RCRA, all scrap metal that would be hazardous[9] is a solid waste when disposed of or when recycled (although, as explained in more detail below, it is exempt from Subtitle C regulation at this time when recycled). Scrap metal is waste-like in that it is a used material that is no longer fit for use and must be reclaimed before it can be used again, or is a process residue that must be recovered in a different operation from the one in which it was generated.

We also believe that scrap metal comes within the series of statutory definitions which state generally that materials from which resources are recovered are solid wastes. See RCRA sections 1004 (19), (30), (22), (7), (18), (23), and (24); see also 48 FR at 14502/1-2. Based on these provisions, the Agency has stated that most reclamation operations involve waste management, and *all* reclamation operations utilizing materials that have been used and that must be re-processed before they can be reused constitute waste management. We believe that scrap metal that is being reclaimed fits within these provisions.

c. *Definition of Scrap Metal and Regulatory Distinctions Between Scrap Metal and Other Metal-Containing Wastes That Are Recycled.* Although we are defining hazardous scrap metal as a Subtitle C waste when recycled, we are exempting such metal from regulation for the time being. We need to study types of scrap metal and types of management practices further before deciding on an appropriate regulatory regime (if any). It thus is important to distinguish scrap metal from other metal-containing wastes that are subject to Subtitle C regulations when recycled. See Section II.H.4. of Part III of the Preamble.

Scrap metal, as defined in this rule, means bits and pieces of metal parts (*e.g.*, bars, turnings, rods, sheets, wire), or metal pieces that are combined together with bolts or soldering (*e.g.*, radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled. Put another way, scrap metal is defined as products made of metal that become worn out (or are off-specification) and are recycled to recover their metal content, or metal pieces that are generated from machining operations (*i.e.*, turnings, stampings, etc.) which are recycled to recover metal. Materials not covered by this term include residues generated from smelting and refining operations (*i.e.*, drosses, slags, and sludges), liquid wastes containing metals (*i.e.*, spent acids, spent caustics, or other liquid wastes with metals in solution), liquid metal wastes (*i.e.*, liquid mercury), or metal-containing wastes with a significant liquid component, such as spent batteries.

We have defined scrap metal in this way based on our general understanding of the way industry uses this term. As noted, this definition does not include liquid spent materials that contain metals. Liquids are different from metal pieces in content, physical form, and manageability. Members of both the National Association of Recycling Industries (NARI) and the Institute for Scrap Iron and Steel (ISIS) also generally agree that liquid wastes are not commonly referred to as scrap metal. Although these metal-bearing liquids and scrap metal are both classified as solid wastes under this rule (if hazardous), the regulatory significance of not including these liquids as scrap metal is that the liquids are subject to immediate regulation when they are reclaimed (assuming they are hazardous spent materials, listed sludges, or listed by-products) whereas

[8] Commercial chemical products listed in § 261.33 also are wastes when recycled to the land or burned as fuels, when this is not their normal manner of use.

[9] For clarification of this point, see the discussion of § 261.1(b), Section II.A. of this part of the preamble.

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scrap metal is not.[10] It is the Agency's judgment that immediate regulation of metal-bearing liquids is appropriate because: (1) (As liquids) They need special precautions when managed, (2) the current regulatory regime in Parts 264–265 is appropriate, and (3) wastes of this type have been linked to a series of damage incidents when stored before reclamation.[11] The reasons for deferring regulation of scrap metal thus do not apply here.

Similar reasoning underlies the Agency's classification of spent lead-acid batteries as a spent material, subject to immediate regulation when reclaimed. Spent batteries are different in physical form from scrap metal because they contain substantial amounts of liquid acid. As discussed in Section II.G. of Part III of this premable, it is appropriate to immediately regulate the storage of spent lead-acid batteries at reclamation facilities. We consequently are classifying and regulating spent batteries differently from scrap metal.

Scrap metal is also classified differently from metal-containing process residues such as slags, drosses, and sludges partly because it is different in physical form and content. More importantly, these residues can be involved in recovery operations that amount to on-going processing of the virgin material and so are not invariably wastes when utilized for metal recovery. As noted above, this is not the case when scrap metal is recovered. For this reason, all hazardous scrap metal is classified as a waste (although exempt from regulation at this time), while sludges and by-products being reclaimed must be identified more particularly by listing before they are wastes.

3. *By-products Versus Co-products.* We are also modifying the definition of by-product. In the proposed rule, we said by-products were not primary products and were not solely or separately produced. This language did not directly address situations where there are a number of co-products being produced. By "co-product" we mean a material produced for use by the general public and suitable for end use essentially as-is. Examples are sulfuric acid from smelters' metallurgical acid plants, various metals produced in tandem by smelting operations (such as lead recovered from primary copper smelting operations), or co-products such as kerosene, asphalt, or pitch from petroleum refining. These co-products are not (and were never intended to be) covered by the regulations.

We therefore are clarifying the definition to indicate that by-products are materials, generally of a residual character, that are not produced intentionally or separately, and that are unfit for end use without substantial processing. Examples are still bottoms, reactor cleanout materials, slags, and drosses.

On the other hand, materials produced intentionally, and which in their exisiting state are ordinarily used as commodities in trade by the general public, are considered to be co-products and not by-products.[12] In response to comment, we also note that these materials can be produced from a combination of processes at a facility, and need not result from one single process. (It is also possible to put a by-product to use—for example a still bottom can be used as an intermediate to make a new product. The still bottom would not be considered a waste under the amended definition due to its manner of recycling—use as an ingredient. It would, however, still be a by-product).

B. Definitions of Incinerator, Boiler, and Industrial Furnace

1. *General Classes of Combustion Units.* Many enclosed devices are used to treat hazardous waste through controlled flame combustion.[13] The proposed regulations divided that universe into three groups: incinerators, boilers, and industrial furnaces. We are adopting this same tripartite division in the final rule. The Agency already regulates the emissions from hazardous waste incinerators and intends to regulate the emissions from combustion units that burn hazardous wastes for energy recovery. Regulation will be established at a level that is necessary to protect human health and the environment. It is necessary to distinguish among the types of combustion units, however, because incinerators are being regulated sooner than boilers and industrial furnaces, and because the ultimate standards for boilers and industrial furnaces may vary from each other, as well as from the standards for incinerators.

2. *Definition of Incinerator. Incinerators* burning hazardous waste are subject to the permitting standards of 40 CFR Part 264, Subpart O. An incinerator is defined as any enclosed device that is neither a boiler nor an industrial furnace that uses controlled flame combustion to treat waste. This definition differs from the text of the proposal in order to make it clear that the three defined units—incinerators, boilers, and industrial furnaces—cover the entire universe of enclosed devices using controlled flame combustion to treat hazardous waste. The regulation also amends the former definition of incinerator, promulgated on May 19, 1980, which defines the device in terms of the primary purpose for which wastes are burned. However, this change is essentially a clarification of the existing rules which should have little effect on the number or identity of units already subject to Subpart O. As we stated at proposal, incinerators are built to destroy hazardous waste, so wastes burned in them are obviously being burned for the primary purpose of destruction. 48 FR 14484/2.

The May 19, 1980 definition focused on whether each waste fuel was burned for the primary purpose of destruction. Today's regulatory scheme more appropriately describes how one can examine the nature of the combustion unit to recognize combustion for purposes other than destruction. It then classifies units used for those activities as either boilers or industrial furnaces. If combustion of a waste does not meet the criteria for those classes, then the primary purpose of its combustion is necessarily destruction. Thus, it should properly remain subject to the permitting standards of Part 264, Subpart O.

Comforming changes are being made in §§ 264.340 and 265.340 defining the applicability of Subpart O's standards for incinerators. Similarly, § 265.370, defining the applicability of the interim status standards for other thermal treatment, is being amended. These changes clarify the coverage of flame combustion devices, but do not alter existing obligations.

3. *Definition of Boiler. Boilers* burning hazardous waste for energy recovery

[10] In particular, in reviewing a booklet published by the National Association of Recycling Industries (NARI) which classifies non-ferrous scrap into 133 different categories, most of the categories described—approximately 95 percent—refers to metal pieces (*i.e.*, wire, castings, clippings, sheet metal, slabs, etc.). See NARI Circular NF-82, Standard Classification for Non-Ferrous Scrap Metal. The Institute of Scrap Iron and Steel (ISIS) likewise classifies scrap metal as metal pieces.

[11] See Appendix A.

[12] We note, however, that products or co-products that include hazardous wastes as ingredients are classified as wastes when they are to be burned for energy recovery or placed directly on the land for beneficial use. See Sections V.C. and V.D. of this part of the preamble.

[13] There are also a few hazardous waste management devices which rely on thermal treatment, but do not directly combust the treated waste. EPA will allow permitting of those devices under the criteria of 40 CFR Part 264, Subpart P: Other Thermal Treatment, or under the criteria of 40 CFR Part 264, Subpart X: Miscellaneous Waste Management, following promulgation of those Subparts.

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now fall within the exemption from regulation of actual recycling processes found in 40 CFR 261.6, pending promulgation of substantive regulations controlling emissions from burning hazardous wastes in them as may be necessary to protect human health and the environment. Thus, boilers do not now require RCRA permits to continue their combustion activities. (Storage of certain hazardous wastes before burning requires a storage permit and the transport of these wastes is regulated, however. See 40 CFR 261.6(b).)

a. *Adoption of a Standard Based on Integral Design of the Device.* The definition of boilers focuses on physical indicia of their legitimate use for energy recovery. The final definition, like the proposal, relies upon the concepts of integral design, combustion efficiency, and energy recovery. This reflects the fact that boilers, unlike incinerators, are designed and operated to convert fuel into more usable energy (generally steam). This is most efficiently done when energy recovery devices, such as water vessels, are physically in contact with (integrally connected to) the combustion chamber in which the fuel is burned.[14] EPA consequently proposed that the combustion chamber and heat recovery sections of a boiler must be of integral design—physically formed into a single unit—and that significant heat recovery must take place in the combustion chamber by means of radiant heat transfer.

Many parties commented on the proposed definition. Some had generalized objections to the basic concept of a test based on physical criteria, arguing that it would stifle innovation and that it was unrelated to environmental protection. Others had specific criticisms related to the proposal's exclusive reliance on *radiant* heat transfer as the measure of "significant heat recovery." Commenters also described a few specific types of legitimate boilers which might not meet the proposed "integral design" test.

EPA has considered, but is unpersuaded by, the general criticism of the rule's reliance on physical criteria to differentiate between these units. Significant regulatory consequences spring from the distinctions between classes of combustion devices. Thus, it is important that the tests for those distinctions be unambiguous and easy to apply. The physical test of integral design meets those needs. The test also has environmental significance since it will pinpoint those cases in which the unit is not designed to achieve efficient energy recovery and, thus, cannot be relied upon to attain complete combustion.

Adverse impacts on innovation are unlikely to occur since the test focuses on efficient transfer of energy from fuel to fluids—the most common and widespread element of boiler technology. Furthermore, extensive comments actually identified only two limited classes of boilers for which the test could be inappropriate; the final regulation specifically deals with those classes, as discussed below. Finally, EPA has provided for a case-by-case determination that a unit is a legitimate boiler, based on an assessment of specified relevant factors.

Under the final rule, therefore, the great majority of boilers can be unambiguously identified by a simple examination of physical design while a case-by-case assessment can be made of the few units for which it is possible that the physical test is inappropriate.

b. *Supplementation of Integral Design Standard With Additional Physical Standards.* The integral design test is supplemented by quantified criteria for continuous and long-term energy recovery. These supplementary tests are designed to ensure that units that are *physically* designed as boilers are not *actually* being used to destroy hazardous waste. In the final regulation these criteria are quantified and placed in the regulation to avoid the ambiguity about regulatory coverage which might have arisen if they had been left in the preamble, as at proposal. (A specific background document explains these criteria in detail.)

The final definition does include several changes based on specific technical comments. These are discussed in the background document; however, the major points are mentioned here.

First, the definition of boiler now identifies specific units—process heaters and fluidized bed combustion units—which are generally recognized as boilers but for which the integral design test is not determinative of whether the unit is a boiler. Historically, these units have generally been regarded as legitimate boilers despite the fact that they might not meet a strict integral design test. As such, they would often qualify for the case-by-case classification procedure, assuming they meet the energy recovery criteria. The explicit reference to them in the definition avoids the need for case-by-case assessments.

Second, the definition now gives credit for *all* forms of heat recovery which are exported from the unit and actually are utilized. This significant technical change is in response to criticisms of the proposal's reliance on *radiant* heat transfer alone. As such, it avoids many problems of measurement and classification. In fact, measurement can now often be based on a simple comparison of annual feed to the unit, and annual pounds of steam recovered from the unit, with both measured in British Thermal Units (BTU).

Finally, the specific required energy recovery ratios have been revised since proposal. The changes reflect the shift from reliance on radiant heat recovery alone to reliance on the total heat recovery. We are indicating that boilers must maintain a thermal energy recovery efficiency of 60 percent when in operation. (This is to be based on the higher heating value of the fuel, the common means of evaluating boilers efficiency in this country.) This value is within the range recommended by commenters, and also is within the range of recoveries reported in relevant technical literature. We also are indicating that boilers must export and utilize 75 percent of the recovered energy on an annual basis. This value allows for unit downtime but guards against situations where heat recovery elements have been added as incidental parts of a combustion unit, or have been added in an attempt to avoid classification as an incinerator. The vast majority of legitimate, well-maintained and well-operated boilers (and all those of which EPA is now aware) should meet the criteria now in the regulation. Specific outlying units may be eligible for a case-by-case assessment.

4. *Definition of Industrial Furnace.* *Industrial furnaces* burning hazardous waste for energy recovery are currently exempt from regulation by the provisions of 40 CFR 261.6. Thus, they do not now require permits to continue their combustion activities. (As with boilers, storage of certain hazardous wastes before burning in industrial furnaces requires a storage permit, and the transportation of these wastes is regulated. See § 261.6(b).)

We indicated at proposal that industrial furnaces were those combustion devices designed as incinerators or as boilers that are used as integral components of manufacturing processes to recover materials or energy, not to destroy wastes. 48 FR 14463. To be an "industrial furnace", a unit had to fall within the classes that

[14] van Nostrand's *Scientific Encyclopedia* (5th Ed.) at 324–331 defines "boiler surface" as those parts "which are in contact with the hot gases on one side and water or a mixture of water and steam on the other side." *See also,* McGraw Hill *Encyclopedia of Science and Technology* (1982) at 362–365.

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EPA had specifically designated in the rule, based on a series of criteria relating to how the device was an integral component of a manufacturing process.

We have adopted this same scheme in the final rule. Thus, only those devices specifically named in the regulation (*i.e.*, in the definition of industrial furnace contained in § 260.10) are considered to be industrial furnaces for purposes of the regulation. The criteria for adding new industrial furnaces are the same as at proposal. We have added certain new devices to the list of industrial furnaces. Our reasons are provided in the background document supporting this portion of the regulations.

II. Discussion of Specific Provisions of the Revised Definition of Solid Waste

A. Section 261.1(b): Purpose and Scope

1. *Use of The Regulatory Definition of Solid Waste Only For Purposes of The Subtitle C Regulations.* The applicability provision in the final rule is virtually identical to the one proposed. Section 261.1(b)(1) reiterates that the regulatory definition of solid waste applies only to materials that also are Subtitle C hazardous wastes. This point is implicit since the regulatory definition of solid waste appears in regulations implementing Subtitle C of RCRA, which subtitle only applies to hazardous wastes. In response to comment, we are adopting a clarifying provision in § 261.1(b) to ensure that the regulatory definition is not used in unintended contexts, for example to justify regulation of non-hazardous wastes. The language of the final rule is modelled on Section 8 of H.R. 2867 and is consistent with the Committee's intent. See H.R. Rep. 98–198 at 47.

This provision also makes clear that waste-derived products placed on the land for beneficial use or burned as fuels must themselves be hazardous (by exhibiting a characteristic or containing a listed hazardous waste) to be covered by the rule.

2. *Use of The Statutory Definition for Purposes of Sections 3007, 3013, and 7003.* EPA also is promulgating § 261.1(b)(2), which provision states that the regulatory definition does not limit the Agency's jurisdiction under Sections 3007, 3013, and 7003 of RCRA. Rather, the statutory definitions of solid and hazardous waste will apply when these provisions are involved. A substantially identical provision has been in the regulations since May of 1980. (Those provisions recopied from the May 19, 1980 rules are not being repromulgated and are not subject to judicial review.) Several commenters objected to its continued inclusion, arguing that the statutory definitions of solid and hazardous waste do not provide adequate notice to the regulated community. These comments are unfounded. Congress clearly intended a broader definition of waste to apply when these three provisions are involved. See 48 FR at 14484 (April 4, 1983) and 45 FR 33090 (May 19, 1980); see also H.R. Rep. 98–198 at 47 (EPA's authority under Sections 3007 and 7003 includes all wastes that meet the *statutory* definition of hazardous waste). Courts also have repeatedly applied the statutory definition in Section 7003 actions. See 48 FR 4502 n.67 (Section 7003 actions against recycling facilities). Therefore, the statutory definitions of solid waste and hazardous waste will apply in all actions involving Sections 3007, 3013, and 7003 of RCRA. This means that the Agency's authority under these provisions extends to all materials that *could* be solid wastes under RCRA, not just to those defined as solid wastes in the regulations. Thus, EPA has authority to sample a potentially hazardous unlisted by-product being reclaimed even though this material would not be defined as a solid waste in § 261.2. It could be a solid waste, however; the regulatory definition states that this is a question requiring material-by-material consideration by EPA. EPA thus retains the statutory authority to obtain the information necessary to determine whether the materials are solid wastes (or, in the case of Sections 3013 and 7003, to take appropriate action under those provisions). The same reasoning applies to materials potentially designable as solid wastes under § 261.2(d).

This portion of the rule is effective immediately. The HSWA amended Section 3010 of RCRA to allow rules to become effective in less than six months when the regulated community does not need the six-month period to come into compliance. That is the case here, since amended § 261.1(b) restates currently applicable law, as discussed above. See also H.R. Rep. 98–198 at 47, confirming this view. In addition, the government's interest in exercising its authorities under these provisions is high, and intrusion into business operations may be minimal, particularly in the case of exercise of Section 3007 authority. See, *e.g.*, *Mobil Oil* v. *EPA*, 716 F.2d 1187 (7th Cir. 1983). In these circumstances, the Agency believes there is "good cause" within the meaning of amended Section 3010 to make this portion of the rule effective immediately.

B. Section 261.2(b): Materials That Are Solid Wastes Because They Are Abandoned

This provision is identical to that proposed. It states that materials abandoned by being disposed of, burned, or incinerated are solid wastes. (By saying "abandoned," we do not intend any complicated concept, but simply mean thrown away.) Materials that are accumulated, stored or treated in lieu of or before such activities also are solid wastes. (We indicate in the final rule that materials that are recycled in lieu of disposal are not covered by this provision—even though recycling constitutes treatment. Rather, they are covered by the provisions in the definition saying when recycled materials are wastes.) We again emphasize, as we did in the proposal, that materials being burned in incinerators or other thermal treatment devices, other than boilers and industrial furnaces, are considered to be "abandoned by being burned or incinerated" for purposes of this provision, whether or not energy or material is also recovered. See 48 FR 14484/2. Materials burned for destruction in boilers and industrial furnaces are likewise considered to be "abandoned by being burned or incinerated." *Id.*, and n.15. We are making a conforming amendment to the Part 264 and 265 Subpart O applicability provision to express these thoughts. (We discuss in section D. below the concept of burning for destruction in boilers and industrial furnaces.)

C. Section 261.2(c)(1): Wastes and Waste-Derived Products That Are Used in a Manner Constituting Disposal

1. *The Proposed Provision.* EPA proposed that all secondary materials—*i.e.*, all spent materials, sludges, by-products and discarded § 261.33 commercial chemical products—that are recycled by being placed on the land, were solid wastes. In addition, all of these materials would be wastes if they were recycled to the land after simple mixing with other materials, when the mixing did not result in significant chemical or biological change to the original waste. See 48 FR at 14484–85.

2. *Extension of Jurisdiction To Hazardous Waste-Derived Products That Are Applied To The Land.* Virtually all commenters conceded that the Agency has authority to regulate secondary materials applied to the land in an as-is condition or after most simple mixing. Many comments, however, criticized the Agency for not also including within the scope of the rule waste-derived products that are

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applied to the land. They argued that the simple mixing standard in the proposal was imprecise, had no relation to environmental consequences, and deviated from Congressional intent to control placing hazardous wastes on the land. The House Committee on Energy and Commerce also indicated that it expects EPA to control "hazardous wastes-derived products used or reused by being applied directly to the land." H.R. Rep. 98–198 at 46. Indeed, the Agency itself noted in the preamble to the proposal that we might reconsider the question of asserting authority over hazardous waste-derived products that are used on the land. (See 48 FR 14485/1.)

After reconsideration, we are revising the final rule to apply not only to hazardous secondary materials used on the land without significant change but also to *all* products containing these wastes that are applied to the land and that are themselves hazardous. We read our jurisdiction as applying to waste-derived products whose recycling is similar to a normal form of waste management—in this case, land disposal. (The jurisdictional basis for the following provision on hazardous waste-derived fuels is similar, except that incineration is the waste management practice corresponding to recycling by burning.) We thus agree with those commenters who maintained that the Agency's jurisdiction extends to all hazardous wastes placed on the land, whether or not the waste was mixed with other materials or chemically altered before being placed on the land. The type of processing involved is relevant in determining what regulatory scheme to adopt or in deciding if the waste-derived product is still hazardous. We have determined, however, that processing does not deprive the Agency of RCRA Subtitle C jurisdiction when the waste-containing product is still placed on the land.

The Agency is thus asserting jurisdiction over all hazardous secondary materials, and over products that contain these wastes, when they are applied to the land. Thus, fertilizers, asphalt, and building foundation materials that use hazardous wastes as ingredients and are then applied to the land are subject to RCRA jurisdiction. Secondary materials applied directly to the land likewise are within the Agency's Subtitle C regulations, as are secondary materials dumped into water to serve as fill or structural support.[15]

We note that we are *not* asserting RCRA jurisdiction over pesticides or pesticide applications. Use of a pesticide involves use of a product, not recycling of a waste. Thus, if a pesticide (including off-specification pesticide, pesticide rinse waters or unused dip solution applied in accord with label instructions) is applied to the land for beneficial use, the practice is not viewed as use constituting disposal.

At the present time, the principles of § 261.3 (c) and (d) continue to apply in determining whether a hazardous waste-derived product remains a hazardous waste. Thus, if a waste that exhibits a characteristic of hazardous waste is incorporated into a product to be placed on the land, the waste-derived product is a hazardous waste only if the product itself exhibits one or more of the characteristics of hazardous waste. For example, if a product contains an EP toxic sludge, but the product itself does not exhibit EP toxicity or any other characteristic of hazardous waste, it would not be subject to regulation under Subtitle C. If the waste-derived product contains a listed waste, it is subject to regulation under Subtitle C unless and until it is delisted under the standards and procedures contained in §§ 260.20 and 260.22. See § 261.3 (c)(2) and (d)(2). (We may eventually revisit this part of the rule because there are no hazardous waste characteristics that measure exposure pathways posed by certain waste-derived products, such as crop up-take for waste-derived fertilizers.)

By asserting jurisdiction over hazardous waste-derived products placed on the land, EPA necessarily is asserting authority over the hazardous wastes—the hazardous spent materials, sludges, by-products and § 261.33 commercial chemical products—that go into these products. Thus, if a generator sends a hazardous sludge to a fertilizer producer, for example, the sludge is a hazardous waste in the generator's hands. This result represents a change from the proposal, where these materials would not have been wastes because they were to be used as ingredients (proposed § 261.2(c)(1)(i)). (All of these secondary materials are wastes under the existing (May 19, 1980) definition of solid waste, however, and are presently subject to regulation if they are listed wastes or sludges. See § 261.6.) Thus, there is not a significant change in overall regulatory coverage between the existing and final rules for wastes to be incorporated into waste-derived products that are used on the land. (See also Section III.C. of Part III of the preamble on this point.)

3. *Regulatory Strategy for Commercial Products Containing Hazardous Wastes that are Placed on the Land.* Although EPA is asserting authority over waste-derived products that are placed on the land for beneficial use, we are not yet ready to undertake regulation of these waste-derived commercial products, and therefore are temporarily exempting them from regulation. Ultimate users of these materials—farmers and highway construction crews, for example—are in many cases individuals not ordinarily within the ambit of the Subtitle C regulatory system. EPA needs more time to determine whether it is possible to develop a more sophisticated means of including these types of users within a regulatory framework. The Agency also needs more time to develop a regulatory system for determining when end uses of these products could present a substantial hazard to human health and the environment, and when such practices as waste-product application rate protect against potential harm.

In developing a short and long-term scheme for controlling hazardous waste-derived products placed on the land for beneficial use, the Agency hopes eventually to develop specification levels for toxic constitutents or other specific standards—for those waste-derived products whose use on the land may cause substantial harm. We are not sure if it is technically feasible to develop such specifications, however, and it would take years to work out this type of approach. EPA therefore believes that short-term controls of these practices are needed since uncontrolled land placement of meterials containing hazardous wastes is potentially very dangerous. We also believe that persons generating or using hazardous waste-derived products on the land should demonstrate that the product is safe to use for land placement, or else comply with regulations that apply to hazardous wastes placed on the land.

The Agency intends, therefore, to develop regulations whereby generators or users of hazardous waste-derived products could demonstrate that these products can be placed safely on the land. To this end, EPA expects to conduct studies of these waste-derived products to determine: (1) the types of hazardous wastes contained in waste-derived products that are applied to the land, and (2) the potential hazards presented by these waste-derived products. Once these studies are completed, the Agency will take

[15] We note, however, that we do not consider secondary materials that are used as wastewater conditioners to be within the scope of this provision. The activity is not similar to land disposal because the secondary material is chemically combined as part of a conditioning process and is subsumed as an ingredient in the conditioned water. See 48 FR 14485 n.18.

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appropriate regulatory action. One alternative the Agency is examining is for the user or producer of the waste-derived product to demonstrate via a risk assessment assuming possible exposures via groundwater, crop uptake, runoff to surface water, wind dispersion, or direct human contact that such waste-derived products do not present a substantial hazard to human health or the environment when the waste-derived products are applied to the land. In some cases, users or producers could also evaluate toxicant mobility by existing methods, as in delistings. This system would remain in place until the Agency developed different regulations.

The Agency therefore is limiting its regulatory coverage at this time to hazardous wastes placed directly on the land, or placed on the land after processing, unless the waste a) undergoes a chemical reaction so as to become inseparable by physical means, and b) the resulting combined material is marketed as a commercial product. (See Section II.C. of Part 3 of the preamble for an explanation of these terms.) The practices we are regulating, as we stated at proposal, are tantamount to land disposal and should be regulated as such. We also are regulating hazardous wastes that are transported and stored before being incorporated into hazardous waste-derived products. These wastes stand on the same conceptual and regulatory footing as other hazardous wastes transported and stored before being recycled.

D. Section 261.2(c)(2): Wastes That Are Burned to Recover Energy, Are Used to Produce Fuels, or Are Contained in Fuels

These provisions are among the most important in the regulation, and are integrally related to other regulations proposed or being developed by the Agency. We noted in Section II.B. above that much of the Agency's on-going activity addresses burning of hazardous wastes for energy recovery in boilers or industrial furnaces, and explained our definitions of these terms, as well as our definition of incinerator. We discuss here which secondary materials are wastes when burned as fuels, and how to distinguish among burning for energy recovery, burning for material recovery, and burning for destruction, as well as the regulatory implications of falling into each of these three categories. We also discuss our future regulatory plans, and finally address how we are regulating storage that occurs before burning hazardous waste for energy recovery.

1. *Materials That Are Wastes When Burned As Fuels.* The Agency proposed that all spent materials, all sludges, and listed (but not unlisted) by-products be considered solid wastes when they are burned as fuels, as well as (of course) when they are burned for destruction.[16] Fuels derived from these wastes likewise were defined as solid wastes. As a point of clarification, if a waste exhibiting a characteristic of hazardous waste is used as an ingredient in a fuel, and the waste-derived fuel does not exhibit a characteristic, the waste-derived fuel would not be considered to be a hazardous waste. See § 261.3(d)(1).

Our reason for limiting our jurisdiction in the proposed rule to listed by-products was that we were unsure whether certain commercial fuels might technically be by-products (as defined). See 48 FR 14485. We have reconsidered the issue and have determined that *all* by-products (again as defined) are solid wastes when burned as fuels or used to produce a fuel. We have three principal reasons for this change in approach:

(1) Both the comments and our own investigations failed to disclose instances where by-products were normal commercial fuels;

(2) Data indicates that many process residues, which are by-products, containing high concentrations of Appendix VIII constituents are burned as fuels in industrial boilers; and

(3) Congressional intent is for the Agency to read its jurisdiction over waste-fuels expansively.

States, environmental groups, and waste treatment industry members urged the Agency to expand its claim of jurisdiction. The Agency likewise believes that its authority over recycling is broadest when the recycling practice is like a classic waste management activity, in this case, incineration.

Those commenters who supported the proposal did not maintain that the Agency would regulate normal commercial fuels if all by-products were wastes when burned as fuels. Rather, they argued that many residual materials have high Btu values, and emissions from burning these materials are not substantially different from burning fossil fuels. Others argued that if these by-products were ignitable and did not contain Appendix VIII hazardous constituents, they should not be considered to be wastes when burned.

These comments, in the Agency's view, go to the issue of whether burning and storage of these materials needs to be regulated. The Agency will address these questions in a different rulemaking. These comments do not, however, address the conceptual question of whether the materials are wastes. It is our opinion that by-products that are unlike commercial fuels—because they are residual materials not intentionally produced, and are significantly different in composition from fossil fuels—are wastes when burned as fuels.

Our opinion is reinforced by data submitted to the Agency regarding by-product waste streams presently being burned in boilers and industrial furnaces. Data from the Agency's Industry Studies program of the organic chemical and pesticides industry indicate that boilers and industrial furnaces within these industries burn residual by-products containing high concentrations of such Appendix VIII hazardous constituents as aniline, cyanides, dimethyl phthalates, isobutyl alcohol, and tetrachloroethene. By-products identified in comments to this rulemaking as being burned in boilers or industrial furnaces include chlorinated solvents, chlorinated aliphatic hydrocarbon production wastes, nitrochlorobenzene production wastes, and solvent recovery still bottoms. By-products identified in responses to the Agency's survey on waste and used oil fuels (Questionnaire: *Used Oil and Hazardous Waste as Fuel,* OMB No. 20500019) include distillation bottoms from production of carbon tetrachloride, distillation bottoms from production of phenol/acetone from cumene, distillation bottoms from production of aniline and excess cyanide from acrylonitrile production.

These by-products are physically and conceptually very different from fossil fuels. They are waste-like because they are residual materials containing toxic constituents not ordinarily found in fossil fuels. Many are typically discarded. We therefore believe that we

[16] The Agency also proposed that commercial chemical products listed in § 261.33 that are not themselves fuels, are solid wastes when they are burned as fuels, or used to produce fuels, and that fuels containing these materials (*i.e.* the commercial chemicals themsevles, incorporated into the fuel in lieu of normal use) are solid wastes. We are finalizing this provision today. One commenter, however, misread this language to state that if a fuel contains a chemical that also is on the § 261.33 list—for example, acetaldehyde—fuels containing acetaldehyde were solid wastes regardless of the source of the acetaldehyde. This is incorrect. These materials must first be commercial chemical products (or related materials such as off-specification variants or spill residues) listed pursuant to § 261.33, and must be burned or processed as fuel in lieu of their original intended purpose. We also note that the RCRA Reauthorization legislation takes precisely this position. See H.R. Rep. No. 98-198 at 40; S. Rep. No. 98-284 at 37.

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have jurisdiction over the burning of these materials.[17]

Furthermore, recent statements of Congressional intent strongly support and expansive reading of authority over waste-fuels. The HSWA commands the Agency to regulate burning hazardous wastes for energy recovery, and voice special concern over recycling practices involving "direct introduction of hazardous wastes to the air. . . ." H.R. Rep. No. 98–198, 98th Cong., 1st Sess. 46. Our action today is in full accord with these declarations.

As a point of clarification, the Agency reemphasizes that it has modified the difinition of by-product to indicate more clearly that co-products—materials intentionally produced for a commercial market and suitable for use as-is—are not considered to be by-products. Thus, co-products from petroleum refining such as kerosene, pitch, or various grades of fuel oil, are not by-products for purposes of this regulation.[18] On the other hand, residual materials such as tank bottoms (EPA Hazardous Waste No. KO52) are by-products and are considered to be wastes when used as fuels or when incorporated into fuels. We note that the HSWA takes precisely this position. See RCRA amended Section 3004(g)(2)(A) and 3005(r)(2). Fuels containing these wastes likewise remain solid wastes. *Id.* Again, it may turn out that regulation of these materials is unnecessary to protect human health and the environment. EPA also may be able to establish specifications that distinguish waste-derived fuels from products. Today's rule makes clear that the Agency has jurisdiction to make these determinations.

As a result of this change, all spent materials, sludges, by-products, and § 261.33 commercial chemical products and all fuels to which these materials are added,[19] are potentially subject to regulation when transported, stored, and burned for energy recovery. We discuss below in sections 3 and 4, the Agency's on-going efforts to control burning and storage of these materials.

2. *Determining When a Waste is Burned for Energy Recovery and Applicability of the Rules to Burning for Materials Recovery.* Today's regulations apply to hazardous wastes burned for "energy recovery." This limitation raises two issues: Distinguishing burning for energy recovery from burning for destruction, and determining how to regulate wastes if they are burned to recover materials.

(a) *Burning for Energy Recovery.* The Agency has already addressed in part what it means to burn wastes for legitimate energy recovery. In a Statement of Enforcement Policy issued on January 18, 1983 (printed at 48 FR 11157 (March 16, 1983)), EPA stated that as a general matter—subject to individualized consideration of particular circumstances—burning of low energy hazardous wastes as alleged fuels is not considered to be burning for legitimate energy recovery. This is the case even if the low energy hazardous waste is blended with high energy materials and then burned. Thus, under these principles, boilers and industrial furnaces burning low energy wastes could be considered to be incinerating them, and so be subject to regulation as hazardous waste incinerators. (See 48 FR 11158, 11159, and fn.3.)

Today's regulation leaves the principles of the Statement in force. However, EPA, in the Statement, indicated that sham burning was easiest to determine when burning occurs in non-industrial boilers. We also said that larger industrial boilers are more efficient at recovering energy and so could be deemed, more often, to be burning lower energy wastes legitimately. (*Id.* at 11159.) In applying the Enforcement Policy Statement to industrial boilers and industrial furnaces, we would seek to enforce only in situations where large amounts of low energy wastes with high concentrations of toxicants are burned. These are clearly situations where low energy hazardous waste adulteration was deliberate and massive. We also note that the Policy Statement does not address burning for material recovery, or situations where a single waste is burned for material and energy recovery. In this situation, the fact that low energy wastes are involved would not necessarily indicate that there is no recycling, because material recovery also is involved.

(b) *Burning for Material Recovery.* A second question is the scope of these regulations when burning involves material recovery. The Agency views these regulations as applying whenever hazardous wastes are burned in boilers. Boilers, by definition, recover energy. If materials are also recovered, this recovery is ancillary to the purpose of the boiler, and so does not alter the regulatory status of the activity.

Burning for material recovery in industrial furnaces, however, raises different kinds of issues. As discussed above, industrial furnaces are used as integral components of manufacturing processes to recover materials. Thus, regulation under RCRA of actual burning in industrial furnaces could, in some circumstances, represent an intrusion into a normal production process, particularly if the material being recovered is the same material the furnace ordinarily produces. On the other hand, when an industrial furnace is used for material recovery and the secondary material being burned is: (a) Not ordinarily associated with the furnace (for example, organic still bottoms), (b) different in composition from materials ordinarily burned in the unit (as when the secondary material contains Appendix VIII hazardous constituents different from, or in concentrations in excess of those in materials ordinarily burned in the furnace), or (c) burned for a purpose ancillary to the chief function of the furnace, we think that RCRA jurisdiction over the burning exists. (Jurisdiction obviously exists, for example, if that purpose is destruction.)

When industrial furnaces burn for energy recovery, regulation of the burning would not constitute an impermissible intrusion into the production process because burning for energy recovery is an activity that is not central to the usual function of an industrial furnace. See H.R. Rep. 98–198 at 40 (industrial furnaces burning for energy recovery are to be regulated under the waste-as-fuel provisions of H.R. 2867). We therefore are asserting RCRA jurisdiction when an industrial furnace burns hazardous secondary materials—*i.e,* hazardous wastes—for energy recovery.

The regulations would also apply when an industrial furnace burns the same secondary material for both energy and material recovery. Examples are blast furnaces that burn organic wastes to recover both energy and carbon values, or cement kilns that burn chlorinated wastes as a source of energy

[17] We note as well that Congress already has required the Agency to develop performance standards for used oil burned as a fuel. See RCRA Sections 3014 and 1004(37). The Agency believes that if we have authority to regulate burning of used oil, which is composed primarily of petroleum fractons and therefore is physically similar to fossil fuel or fuel oil, *a fortiari,* we also have authority to regulate burning of secondary materials that are physically quite distinct from fossil fuels.

[18] Off-specification fuels burned for energy recovery also are not by-products, and so would not be considered to be wastes under this provision. An example provided in the comments was of natural gas pipeline condensate. The condensate contains many of the same hydorcarbons found in liquefied natural gas, and certain higher hydrocarbons that also have energy value. It is generated in the pipeline transmission of natural gas. This condensate is not considered to be a waste when burned for energy recovery.

[19] As noted above, for a waste-derived fuel to be hazardous waste, it would have to contain a listed waste or exhibit a hazardous waste characteristic. See § 261.3 (c) and (d).

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and chlorine. (Indeed, energy recovery from burning in kilns is automatic, so that all burning of hazardous wastes in kilns is within the Agency's RCRA jurisdiction.) These activities are not so integrally tied to the production nature of the furnace as to raise questions about the Agency's jurisdiction. In addition, EPA believes that both the existing statute and the new legislation express a strong mandate to take a broad view of what constitutes hazardous waste when hazardous secondary materials are burned for energy recovery, and to regulate as necessary to protect human health and the environment. See e.g., 48 FR 14502 (statutory definitions stating that secondary materials burned for energy recovery are solid wastes); H.R. Rep. 94-1491, *supra* at 4 (Congress' concern in promulgating Subtitle C was to "eliminat(e) the last remaining loophole in environmental law", not to create new loopholes); H.R. Rep. 98-198, *supra* at 41-42; S. Rep. No. 98-284 at 36. In taking this view, we thus reconsider and withdraw footnote 19 of the preamble to the proposed rule where we said we would count materials burned in industrial furnaces for both energy and material recovery as being burned for material recovery. For the reasons given above, we think that was a mistaken idea.

We note as well that if an industrial furnace burning secondary materials for ostensible material recovery is used to destroy the materials, it is not recycling but rather is incinerating them. Examples of such sham recovery are when there is no material recovery, or where material recovery is economically insignificant. Another example is when wastes are burned in excess of what can feasibly be recovered and used. (The following subsection discusses a regulatory change clarifying this principle.)

(c) *Amendment to Applicability Section of Subpart O of Parts 264 and 265.* In the final rule, we are codifying the general principle that boilers and industrial furnaces used to destroy wastes rather than to recover energy and material from them are considered to be incinerating the wastes, and thus are subject to the permit requirements of Subpart O of Part 264 or the interim status requirements of Part 265. (This amendment is found in the applicability sections of Subpart O of Parts 264 and 265.) We intend for this amendment to remain in effect until we develop permit standards for burning in boilers and industrial furnaces. Not only is an interim control on those practices needed, but without this provision boilers and industrial furnaces burning for destruction would have no means of receiving a permit.

It also should be noted that with the exception of certain conditions in the definition of "boiler," we are not defining objectively what constitutes burning for destruction, such as specifying precise Btu limits for waste fuels or volume limits on waste feed. We have decided that there are too many exceptional circumstances where unvarying rules of this type would yield unintended results. It is better policy, we think, to apply the concepts explained here and in the Statement of Enforcement Policy, and so enforce this provision in a more individualized manner.

(d) *Examples of How These Provisions Operate.*

The following examples indicate which secondary materials are wastes when burned for energy recovery.

- Facility A burns an unlisted ignitable by-product in its boilers.

A is considered to be burning a hazardous waste since all secondary materials burned for energy recovery are defined as solid wastes. (Ignitable wastes will have high Btu value, and so the waste will be burned for legitimate energy recovery.)

- Facility B burns the same by-product in an industrial furnace to recover energy.

B is considered to be burning a hazardous waste for the same reason as A was in the first example.

- Facility C burns an unlisted EP toxic by-product in its boiler to recover both materials and energy.

C is considered to be burning a hazardous waste for energy recovery, since secondary materials burned for a dual recycling purpose in boilers are considered for jurisdictional purposes to be burning for energy recovery. This answer assumes that sufficient energy and material values are recovered so that the waste is not being burned for destruction.

- Facility D burns the same by-product in an industrial furnace to recover both energy and materials.

D is considered to be burning a hazardous waste, even though the waste is an unlisted by-product, and even though there is some material recovery. Unlisted by-products burned for energy recovery in any type of combustion unit are defined as solid wastes. If D were burning exclusively for material recovery—for example if D operated a smelting furnace burning to recover metal—the material would not be a solid waste since it would be an unlisted by-product being reclaimed.

- Facility E burns an unlisted EP toxic sludge in its industrial furnace but recovers no energy and minimal material values. The material recovered is also unrelated to the material the furnace normally produces.

E would be considered to be burning a hazardous waste for destruction, and so would have to comply with the standards for incineration in Subpart O of Parts 264 and 265.

3. *The Agency's Future Plans for Regulating Burning of Hazardous Waste for Energy Recovery.* As noted above, the actual burning of hazardous waste for energy recovery in boilers and industrial furnaces is exempt from regulation. There was strong consensus in the public comments—confirmed by recent legislative action—that there is a need for regulatory action to control this type of burning. The Agency agrees, and is adopting a phased approach to address the problem. We will soon be proposing the first set of regulations which would ban burning of hazardous wastes and contaminated used oil in non-industrial boilers, and would impose administrative controls on these materials whenever burned in industrial boilers or industrial furnaces.

The next phase of regulations will develop permit standards for burning in industrial boilers and in some industrial furnaces. In developing these standards, we will use many of the factors recommended by commenters in this proceeding. Thus, we intend that these units achieve the same ultimate level of protection as incinerators, and (in some cases) will specify design and operating conditions based on the type of waste and the operating efficiency of the combustion unit to ensure that this level of performance is achieved.

We also are considering adopting general narrative standards, roughly analogous to those contained in the Part 267 regulations (see 46 FR 12429, February 13, 1981), for remaining industrial furnaces burning hazardous wastes for energy recovery. This will allow these units to be permitted immediately until such time as the Agency is able to develop unit specific permit standards for them.

At the time these standards are in place, the Agency intends to withdraw the Statement of Enforcement Policy and the rules stating that the Subpart O regulatory standards for incinerators apply to boilers and industrial furnaces burning hazardous wastes for destruction. This is because we will then have promulgated the permit standards necessary to protect human health and the environment for boilers and industrial furnaces burning hazardous

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waste, and so the purpose for which a material is burned will no longer be relevant in determining what the regulatory regime for the burning device should be.

4. *Regulation of Generators, Transporters and Storers of Hazardous Wastes Before the Wastes are Burned for Energy Recovery.* Up to this point, we have been discussing the Agency's jurisdiction over wastes burned as fuels and over fuels containing these wastes, and our planned regulatory regimes for the actual burning of these wastes and waste fuels. We now discuss regulation of these materials *before* they are burned.

EPA proposed the following regulatory scheme for generators, transporters, waste fuel processors, and ultimate burners:

TABLE 5. APRIL 4 PROPOSED RULES FOR GENERATORS, TRANSPORTERS, FUEL PROCESSORS AND BURNERS

	Hazardous wastes that are subject to regulation
Generator sending waste to fuel processor.	All spent materials, all sludges, listed by-products, and § 261.33 materials that are not fuels.
Generator sending waste directly to burner.	All sludges, and spent materials and by-products listed in §§ 261.31 and 261.32 (spent materials and by-products exhibiting a characteristic of hazardous waste were exempt from regulation, as were § 261.33 materials).
Transporters taking waste to fuel processor.	All spent materials, all sludges, listed by-products, and § 261.33 materials that are not fuels.
Transporters taking waste to burners.	All sludges, and spent materials and by-products listed in §§ 261.31 and 261.32.
Fuel processor	All spent materials, all sludges, listed by-products, and § 261.33 materials (*i.e.* all secondary materials defined as wastes when burned for energy recovery); waste-derived fuels produced by the processor were exempt from regulation.
Burners	All sludges, and spent materials and by-products listed in §§ 261.31 and 261.32.

In essence, the Agency proposed to perpetuate the current distinctions in 40 CFR 261.6(b) between listed wastes and sludges on the one hand, and non-listed, non-sludge hazardous wastes on the other for generators and transporters sending wastes directly to burners, and for burners themselves. See 48 FR 14482, 14495 and proposed § 261.6(b)(5). We also proposed that all hazardous wastes sent to fuel processors be subject to regulation, so that fuel processors storing spent materials that exhibit a characteristic of hazardous waste (as well as wastes already covered by § 261.6(b), namely listed wastes and hazardous sludges) were subject to regulation as storage facilities. Generators and transporters sending any type of hazardous waste to a fuel processor were subject to Part 262 and 263 standards. Hazardous waste fuels produced by these fuel processors were not subject to regulation, and so could be transported, stored, and burned without being subject to regulation. *Id.* at 14485.

Comments on this part of the proposal were mixed. Some commenters supported the Agency, but others urged the Agency to regulate transport and storage of all hazardous wastes used as fuels, including non-sludge hazardous wastes exhibiting a hazardous waste characteristic and hazardous waste-derived fuels. They argued that these controls were needed to ensure safe handling of these wastes, to provide a record to the public and to regulatory agencies of which wastes are burned for energy recovery, and of where they are being burned. Some commenters also argued that extending regulatory control over these additional hazardous wastes would effectuate the policy of the then-pending, now-enacted RCRA Reauthorization legislation.

EPA agrees that regulation of transport and storage of all hazardous wastes and all hazardous waste fuels is necessary to protect human health and the environment. The question for the Agency is how best to implement these controls while avoiding the undue confusion or disruption that would result from extensive, piecemeal changes of the current rules. EPA thus has decided to make most of the regulatory changes respecting transport and storage in the context of the soon-to-be proposed rules on hazardous waste and used oil fuels cited above. Thus, in the present package, we are exempting from regulation all hazardous waste fuels produced by a person other than the waste's generator or burner. Hazardous waste fuels leaving intermediate waste fuel blenders and processors consequently would remain exempt from regulation at this time. We also have decided, as an interim measure, to retain the distinction between listed wastes and sludges and unlisted characteristic hazardous waste fuels, so that only the former are regulated.

Finally, we are clarifying that transport and storage requirements apply to all hazardous waste fuels (*i.e.*, hazardous wastes to be burned for energy recovery) containing listed wastes and sludges, except for those produced by a person other than the generator of the hazardous waste. Consequently, if a generator of listed hazardous wastes and sludges blends or processes these wastes and sends them to a burner, the blended waste fuels are subject to regulation (until burned). If the generator blends the same wastes and sends this blend to a hazardous waste fuel processor, the blended wastes remain subject to regulation until reprocessed by the fuel processor.

The clarification of the rules to apply to certain blended hazardous waste fuels (*i.e.*, those going from a generator to a burner, or from a generator to a fuel processor) removes an ambiguity in the present rules, and responds to comments urging immediate regulation of all hazardous waste fuels, blended or unblended. The final rule also assures that wastes are not removed from the regulatory system due to minimal processing by a generator intended merely to evade regulatory requirements.

EPA is not regulating immediately hazardous waste fuels produced by a person other than the generator because the Agency feels this type of regulation would be too disruptive at the present time. Regulation could extend, for example, to unknowing users such as non-industrial boiler operators. In addition, although it is true that the HSWA mandates regulation of these wastes as necessary to protect human health and the environment, the Agency is given two years from enactment to develop these standards. The Agency thus believes that its forthcoming proposal on hazardous waste fuels is the better forum to address these issues.

We are limiting regulation to listed wastes and sludges because these wastes are controlled under present regulations, and the Agency believes the forthcoming hazardous waste fuel rules are the better vehicle for extending regulation to different types of wastes. We thus are not adopting the portion of the proposal which would have regulated all hazardous wastes going to a fuel processor. We do not think it makes sense to have one set of rules for unlisted spent materials and by-products sent to a processor, and a different set of rules when these materials are sent to a burner.

The following examples illustrate the final rules dealing with transport and storage of hazardous waste fuels:

- Generator A generates a hazardous spent solvent listed under § 261.31. He sends the spend solvent to burner B who burns it in his boiler.

Generator A must comply with Part 262 (see § 266.32(a) and § 266.34(c) of the final rule) because a listed waste is involved. Burner B must obtain a storage permit (see § 266.35(c)). The burning is

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exempt from regulation at the present time (see § 266.30(a)).

• Generator C generates a hazardous spent solvent listed under § 261.31, blends it with virgin fuel oil, and sends the blend to Burner D who burns it in a boiler.

The answer is the same as for the last example, for the same reasons.

• Generator E generates a hazardous spent solvent listed under § 261.31, blends it with virgin fuel oil, and sends the blend to processor F who processes the blend and does further blending. F then markets the hazardous waste fuel to Burner G who burns it in his boiler.

Generator E is subject to Part 262, as in the previous examples. Processor F is a storage facility (see § 266.34(c)(2)). However, the hazardous waste fuels that F markets are exempt from regulation, so Burner G may store and burn them without regulation (at the present time).

• Generator H generates an unlisted ignitable by-product that he sends to Burner I to be burned in a boiler.

The hazardous waste is exempt from regulation because it is neither a listed waste nor a sludge (see § 266.36). This result would be the same if the ignitable by-product were blended at any point, or sent to an intermediate processor instead of the ultimate burner.

The following chart summarizes the generation, transportation, and storage standards in the final rule for hazardous wastes to be burned as fuels.

TABLE 6: FINAL RULES REGARDING TRANSPORT AND STORAGE BEFORE BURNING FOR GENERATORS, TRANSPORTERS, FUEL BLENDERS, AND BURNERS

	Hazardous wastes that are subject to regulation
Generator sending waste to fuel processor.	Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes.
Generator sending waste directly to burner.	Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes.
Transporters taking waste from generators to fuel processor.	Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes.
Transporters taking waste from generators to burners.	Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes.
Fuel processors who do not generate the waste or burn the waste-derived fuel.	Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes; waste-derived fuels produced by the processor are exempt from regulation.
Transporters taking intermediate waste-derived fuels from fuel processors to burners.	Exempt from regulation.
Burners	Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes; waste-derived fuels from fuel processors who did not generate the waste are exempt from regulation.

E. Section 261.2(c)(3): Reclamation

1. *Definition of Reclamation.* EPA proposed that all spent materials, listed sludges, and listed by-products that are reclaimed are solid wastes.[20] See 48 FR at 14486. We limited the definition to listed sludges and listed by-products to avoid including sludges and by-products that are routinely processed to recover usable products as part of on-going production operations. We defined "reclamation" to constitute either regenerating waste materials or processing waste materials to recover usable products. In essence, reclamation involves regeneration or material recovery. Wastes are regenerated when they are processed to remove contaminants in a way that restores them to their usable original condition. Examples are reclamation of spent solvents or reclamation of other spent organic chemicals. Secondary metal reclamation processes, such as secondary smelting, are examples of material recovery. Our regulatory definition of reclamation relies heavily on a number of statutory definitions, including those of "resource recovery" (RCRA Section 1004(31)) and "recovered material" (RCRA Section 1004(19)). *Id.* at 14487/2.

We also drew a distinction in the proposal between situations where material values in a spent material, by-product, or sludge are recovered as an end-product of a process (as in metal recovery from secondary materials) as opposed to situations where these secondary materials are used as ingredients to make new products without distinct components of the materials being recovered as end-products. The former situation is reclamation; the latter is a type of direct use that usually is not considered to constitute waste management. 48 FR 14487. In addition, we proposed that secondary materials put to direct use as substitutes for commercial products were not considered to be reclaimed, so that this type of use also is usually not considered to be waste management. Our reason for this distinction is that secondary materials put to direct use in this way are being used essentially as products.

We are adopting these provisions as proposed. (Additional discussion of recycling involving direct use of secondary materials is found in Section H. below.) Also, as discussed in Section I.A.2. of this part of the preamble, we have added provisions to the final definition indicating explicitly that scrap metal that is hazardous is considered to be a waste for the regulatory purposes of RCRA Subtitle C when it is reclaimed. As we noted, recovery from scrap metal is not normally analogous to on-going processing of virgin materials, and much of the scrap metal that is reclaimed is waste-like because it is no longer fit for use and must be reclaimed before it can be used again. (As discussed in Part III of the preamble, however, the Agency is at this time exempting from Subtitle C regulation hazardous scrap metal that is to be reclaimed.)

As a matter of drafting, we have reorganized this provision so that the definition of reclamation is found in § 261.1. The exceptions for direct use recycling are contained in a separate provision (§ 261.2(e)) indicating when secondary materials that are to be recycled are not solid wastes.

Most of the comments agreed with the proposed definition of reclamation (although many questions were raised about how to regulate reclamation activities and about exclusions for direct use recycling). One commenter requested clarification as to the intended result when a secondary material is first reclaimed and then put to direct use. Under the final rule, spent materials, listed sludges, and listed by-products that are processed to recover usable products, or that are regenerated—*i.e.*, that are reclaimed—are solid wastes. If the material is to be put to use after it has been reclaimed, it still is a solid waste until reclamation has been completed. Thus, the fact that wastes may be used after being reclaimed does not affect their status as wastes before and while being reclaimed.

Other commenters raised a related question about the status of spent materials, listed sludges, and listed by-products that are reclaimed and

[20] The proposal contained an exception for materials that were reclaimed at the plant site and returned to the original process in which they were generated. We are not promulgating this exception in the final rule, for the reasons explained in section H of this part of the preamble.

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subsequently used as feedstock. This situation is a subset of the one just described, so that these materials are wastes until reclaimed. Their later use as feedstock does not alter this result. The Agency acknowledges, however, that its discussion of the recycling of spent sulfuric acid in the proposal preamble (footnote 30) created some confusion. The Agency still does not think this process involves reclamation. To eliminate any uncertainty, however, we are amending § 261.4(a) of the regulations to state that spent sulfuric acid that is recycled to produce virgin sulfuric acid is not considered to be a solid waste. (See Section I. below.)

2. *The Status of Reclaimed Products.* The Agency proposed a clarifying amendment to § 261.3(c)(2) (the "derived from" rule) to indicate that commercial products reclaimed from hazardous wastes are products, not wastes, and so are not subject to the RCRA Subtitle C regulations. See 48 FR 11489. Thus, regenerated solvents are not wastes. Similarly, reclaimed metals that are suitable for direct use, or that only have to be refined to be usable are products, not wastes. This amendment states a fairly evident principle, and was not challenged by any commenter.

We caution, though, as we did in the proposal, that this principle does not apply to reclaimed materials that are not ordinarily considered to be commercial products, such as waste-waters or stabilized wastes. The provision also does not apply when the output of the reclamation process is burned for energy recovery or placed on the land. These activities are controlled by the provisions of the definition dealing with using hazardous wastes as ingredients in fuels or land-applied products. For instance, if a spent solvent is treated and blended with oil to sell as a fuel, that waste-derived fuel is still subject to RCRA jurisdiction.

The principle also does not apply to wastes that have been processed minimally, or to materials that have been partially reclaimed but must be reclaimed further before recovery is completed. (See 48 FR at 14499 n. 57.) For this last situation—where materials are partially reclaimed but must be reclaimed further until recovery is completed—we are providing a variance procedure for situations in which the initially reclaimed material is commodity-like in spite of the need for additional processing before it is finally reclaimed. This variance is explained fully in Section J.2. of Part 3 of the preamble below.[21]

F. Section 261.2(c)(4): Wastes That Are Accumulated Speculatively

1. *Grouping of Speculative Accumulation and Overaccumulation Provisions.* EPA proposed that any secondary material (*i.e.*, spent materials, sludges, or by-products) being accumulated speculatively were solid wastes. We said these materials are "accumulated speculatively" when they are being stored with a legitimate expectation of eventual recycling but have never been recycled, or cannot feasibly be recycled. See 48 FR 14489.

The Agency further proposed that secondary materials that accumulate at a site for over a year without 75 percent being recycled are solid wastes. 48 FR 14490. The sense of this provision was that all secondary materials that overaccumulate before being recycled are solid wastes, even if they are going to be recycled in ways that ordinarily do not constitute waste management.

We have combined these concepts in a single provision in the final definition. We have drafted the provision so that secondary materials are considered to be solid wastes if they are accumulating before being recycled. However, the materials will not be considered solid wastes (under this provision of the definition) if the person accumulating can show, on request, that: a) the materials have known recycling potential and can feasibly be recycled, and b) during a one-year calendar period that the amount of material recycled, or transferred to a different site for recycling, is at least 75 percent of the amount accumulated at the beginning of the year.[22]

We think that drafting the provision in this way most accurately reflects Congressional intent that accumulated hazardous secondary materials are ordinarily to be regarded as solid and hazardous wastes. Congress believed that hazardous wastes are rarely, if ever, recycled or amenable for recycling. H.R. Rep. No. 94-1491, at 4. It mandated a "regulatory framework" to ensure that "hazardous wastes (are not) disposed of in ponds or lagoons or on the ground in a manner that results in substantial and sometimes irreversible pollution of the environment." (*Id.*) This mandated "regulatory approach" would "eliminat(e) the last remaining loophole in environmental law . . ." (*Id.*)

Although accumulating hazardous secondary materials are ordinarily regarded as solid and hazardous wastes, this is not invariably the case. As noted earlier in the preamble (see Section II.B. of Part 1 and Section H of Part 2), these materials would not be wastes if they can be recycled in certain designated ways, and if they are not accumulated speculatively before being recycled. These situations represent exceptions to the general statutory prohibition against unregulated waste management.

The final rule thus states the general principle that hazardous secondary materials accumulating before recycling are wastes unless the person accumulating is able to show on request that he is indeed recycling sufficient volumes of the materials on an annual basis. The provision is not substantively different from the proposed rule on overaccumulation; the drafting indicates explicitly, however, that this is an exception to the general statutory principle. Thus, the burden of showing that sufficient amounts are being recycled is on the person accumulating the material. (See Section J. of this part of the preamble.)

2. *§ 261.2(c)(4)(A): Wastes That Are Accumulating With Expectation of Recycling But Which Have Not Been Recycled.* We are adopting in the final rule the proposed provision that all materials stored with a legitimate expectation of eventually being recycled but for which there is no known recycling market or disposition, or no feasible means of recycling, are wastes. These wastes are subject immediately to all applicable RCRA Subtitle C standards. Ordinarily, these are storage standards for the applicable type of storage facility. (See 48 FR 14499/2.) Materials that are known to be recyclable, such as solvents, scrap metal, used oil, or most smelting drosses, slags, and sludges ordinarily would not be subject to this provision.

A person accumulating hazardous secondary materials would have the burden of proving that there is a feasible means of recycling the material. (See Section J. below.) This ordinarily will require identification of actual recyclers and recycling technology, location of the recycler, and relative costs associated with recycling. For example, if the

[21] One commenter questioned whether recirculated industrial cooling water was considered to be reclaimed. Ordinarily, we consider cooling water (contact or non-contact) to be reused directly when it is recirculated. Cooling water is not ordinarily processed or treated to remove impurities before recirculation, but is routed away from the process (often through a cooling tower) to lose enough heat to be reusable. The Agency does not consider cooling water routed in this way to be reclaimed.

[22] Of course, the materials could still be solid and hazardous wastes depending on how they are recycled. For example, they would be wastes if they are to be recycled by being burned to recover energy.

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nearest recycler is 800 miles away, the person accumulating the hazardous secondary material would have to show that it is economically reasonable to send his material that far to be recycled. The most convincing demonstration clearly would be that the hazardous secondary material actually has been recycled.

Most comments supported the proposal. Two commenters, however, suggested that material for which generators could demonstrate that ongoing developmental work will lead to recycling at a future date should not be considered to be accumulated speculatively. We disagree. We think that materials that are not known to be recyclable (or not feasibly recyclable in the hands of a particular generator) are wastes immediately. The example in the preamble to the proposed rule of a waste accumulating over eight years while the generator endeavored to find a means to recycle it indicates that conducting research into recycling possibilities is much different than being able to recycle a waste. In addition, the Agency is not equipped to evaluate whether an unproven developmental plan will ultimately prove feasible.

3. *Section 261.2(c)(4)(B): Wastes Accumulating Before Recycling That Are Not Recycled In Sufficient Amounts. a. The Proposed Provision.* EPA proposed that secondary materials not already defined as wastes that accumulated at a site for over a year without 75 percent being recycled, or transferred to a different site for recycling, are solid wastes. (The materials must, of course, have a know potential for recycling, or they will be considered to be wastes immediately.) EPA also proposed that certain wastes which were exempt when recycled would no longer be exempt if insufficient amounts were recycled in a year.

We coupled this provision with an exception allowing persons who failed to recycle 75 percent in a given year to petition the Regional Administrator (or authorized state having this provision) to demonstrate that they could recycle sufficient amounts in the subsequent year. If the petition was granted the accumulated material was not a waste, or remained exempt from regulation. Once the material accumulated for over a year without sufficient turnover, however, it became a waste or lost its exemption from regulation unless the Regional Administrator (or authorized State) were to decide otherwise.

b. The Final Regulation. We are promulgating this provision essentially as proposed. We continue to believe that the length of time secondary materials are accumulated before being recycled is an important indicator of whether or not they are wastes (or, in the case of precious metal wastes, whether they should be subject to regulation). This is borne out by the large number of recycling damage cases where secondary materials that were overaccumulated over time caused extensive harm. Commenters likewise stated that raw materials usually are processed through production processes in a continual manner and therefore that the length of time a secondary material accumulates before recycling is relevant in determining whether the material is a waste. The Agency also believes, and many commenters agreed, that the one-year period and 75 percent turnover figure were within the reasonable range of values the Agency could select. We are promulgating this provision essentially as proposed.

As just discussed, the major change in the provision involves the structuring of the regulation to indicate that secondary materials stored before recycling are wastes unless the person accumulating the waste is able to show that they are being recycled at an annual rate of 75 percent or more. By requiring persons accumulating the materials to be able to show that they are recycling sufficient amounts, we mean that they have the burden of proof on this issue. We are not requiring specific reports to be submitted to the Agency, nor that particular records be maintained. (See Section d. below discussing the type of records that would satisfy the burden of proof.)

As at proposal, this provision applies to all spent materials, sludges, and by-products not already defined as solid and hazardous wastes and that are accumulated before any type of recycling. The provision thus applies to secondary materials not otherwise considered to be wastes when recycled—namely, to materials that are to be used as ingredients or as commerical product substitutes, to materials that are recycled in a closed-loop production process, to unlisted sludges and by-products that are to be reclaimed, and to black liquor and spent sulfuric acid being reclaimed. Thus, if one of these materials are overaccumulated, they would be considered to be hazardous wastes and would become subject to regulation under applicable provisions of § 261.6, normally § 261.6 (b) and (c) (see Section II.I. of Part 3 of the preamble).

The provision also continues to apply to one set of wastes which are ordinarily exempt from most regulation when recycled, precious metal wastes being reclaimed. Thus, if these wastes are overaccumulated, they no longer are conditionally exempt from regulation (see § 266.70(d)).

The provision does *not* apply to secondary materials that already are wastes when they are recycled, for example scrap metal, secondary materials burned as fuels, or spent lead-acid batteries being reclaimed. The regulations in § 261.6 and Part 266 must be consulted to determine if these wastes are regulated. Rate of turnover thus is not a factor in determining the extent of regulation for these wastes.

In response to comment, we are adding that the provision also does not apply to materials generated in a manufacturing process unit or associated non-waste-treatment manufacturing unit covered by § 261.4(c). Including materials that are generated in these units in the calculation would be inconsistent with the reasons EPA initially exempted wastes accumulated in these types of units. See 45 FR 72025 (October 30, 1980).[23]

EPA proposed that the 75% turnover rate be calculated based on volume. In response to comment, we are writing the final rule so that rate of turnover can be calculated based on either weight or volume. Either measure appears to be a reasonble way to calculate turnover.

We are making one other change to the proposed rule by requiring that 75% of the accumulated materials be recycled during the *calendar* year, starting on January 1, 1985. The proposal would have allowed the person accumulating to choose among the calendar, fiscal, and inventory years as the period during which 75% turnover must be achieved. On reflection, we think that a single time period is needed to facilitate enforcement and to achieve uniformity. EPA believes that if enforcement officials are confronted with a differing starting date at each facility, this provision would become too difficult to implement.

c. *The Requirement That Materials of The Same Class Being Recycled The Same Way Be Counted Together.* In the proposal, we left open the question of whether the overaccumulation provision applies on a material-by-material basis or on a basis that takes into account both the material being recycled and the

[23] Although the final rule refers to § 261.4(c)—a provision that exempts wastes from regulation—EPA is *not* stating that the materials in these units are wastes. EPA is stating that the secondary materials not otherwise defined as solid wastes that are accumulating in the product storage tanks or other vessels described in § 261.4(c) are not subject to the turnover provision contained in the speculative accumulation rule.

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manner of recycling. We indicated that our preference was for the 75 percent recycling requirement to be applied to all materials of the same class which were to be recycled in the same way. Most commenters agreed, as this kind of accounting best assures that similarly situated materials will be grouped in the same way.

We are adopting this standard in the final rule. We wish to clarify precisely what this standard means, however. By "materials of the same class" we mean materials of the same type generated from the same process. Examples of materials that would be grouped are distillation bottoms from integrated production of chlorinated aliphatic hydrocarbons, slags from a smelting process, drosses from a smelting process, dry sludges from the same process, or wastewater treatment sludges from the same process.

The requirement that the materials be "recycled in the same way" means that materials are either to be used to make the same thing (for materials to be used as ingredients), used in the same way (for materials used as effective substitutes for commercial products), or, for unlisted by-products and sludges, that the same material be recovered from them. Thus, still bottoms used as intermediates to make the same products would be counted together—for example, all still bottoms from chlorinated aliphatic hydrocarbon production that are used to make carbon tetrachloride. On the other hand, still bottoms used as intermediates in the production of ethylene dichloride would be counted separately. All of a generator's spent pickle liquor used as a wastewater sludge conditioner would be aggregated; the same generator's pickle liquor used to produce iron oxide would be counted separately. Smelting drosses from which lead is recovered would be counted separately from smelting drosses from which zinc is recovered.

The Agency is adopting this approach to ensure that materials most alike in terms of physical characteristics and mode of recycling are counted together. EPA also believes this approach safeguards against situations where recyclable materials are counted along with unrecyclable ones, shielding the unrecyclable materials from being wastes. For instance, if a generator has 100 units of a secondary material all of which are recycled as ingredients in a process, and 20 units of the same material only one unit of which is recycled in a different process, the remaining 19 units should be classified as wastes because they aren't being recycled.

d. *Means of Satisfying the Burden of Proof.* As noted, persons accumulating secondary materials not otherwise defined as wastes have the burden of proving that they are recycling sufficient amounts of the secondary materials. At a minimum, we would expect that accumulators have on hand (1) the amount of secondary material of each class recycled in the same way on-hand at the beginning of the one-year period, (2) the amount of such material added during the one-year period, and (3) the amount remaining at the end of the one-year period. Records customarily maintained, such as records of throughput through an industrial process, should be satisfactory. For materials used as intermediates in closed-loop processes, records of consistent historical use should be sufficient. In addition, names and addresses of recyclers receiving the secondary materials should be maintained, as well as any other information that substantiates the minimum turnover rate (*e.g.* contracts or correspondence with a recycler).

e. *Response to Comments.* Although commenters expressed concern about the provision's complexity, most supported it in principle. One commenter, while supporting most of the overaccumulation provision, urged that it not apply to unlisted by-products accumulated in tanks and containers for a generator's own use or reuse. We have considered this comment but are rejecting it for the reasons given in the proposal (48 FR 14491/1). As a general matter, we believe the key measure of whether a material is overaccumulated is the length of time before use occurs, not how the material is stored or who will recycle it. In addition, the commenter was most concerned about accounting for unlisted by-products burned as fuels; since these materials are defined as wastes in the final rule (although they are not at this time subject to storage requirements), this question is of less importance.

There were a series of comments regarding the status of commercial chemical products that accumulate over time without being used. EPA indicated in the proposed rule that commercial chemical products that are hazardous wastes when discarded (*i.e.*, those listed in § 261.33 of the regulations) were not subject to either the speculative accumulation or overaccumulation provisions of the proposed rule. 48 FR 14489. We also asked for comments as to whether some type of maximum accumulation period should be imposed by rule. Virtually all commenters opposed this idea, due to the large recordkeeping requirements involved, and the difficult practical problems involved in observing and enforcing such a standard. The Agency shares these concerns. *Id.* at 14490. We therefore are not adopting any time limit on when a commercial chemical product held for recycling becomes a waste. The May 19, 1980 standard remains in place; these materials are wastes when discarded or intended for discard (by means of abandonment), and are not wastes when stored for recycling.

f. *Variances for Secondary Materials Not Recycled in Sufficient Volumes.* We also believe that there may be valid reasons that persons are unable to recycle sufficient amounts of non-waste secondary materials in one year (or the precious metal wastes that are conditionally exempt form regulation) and have retained the petition process to accommodate these situations. The petition is now termed a variance from being a solid waste, and is found in § 260.30 Substantive standards for the Regional Administrator's (or authorized state official's) decision are in § 260.31 (a) and procedures for applying for and processing variances are in § 260.33.

The standards for granting a variance are basically those we proposed. The Regional Administrator must decide if sufficient amounts of material are likely to be recycled or transferred for recycling in the following year. Factors to be considered are: (a) The kind of material being accumulated and its expected manner of recycling, (b) how much is being stored, (c) how it is being stored, (d) whether it is being stored in a way that minimizes loss, (e) how and when it is expected to be recycled, and (f) why this is a reasonable expectation. The Regional Administrator should consider the applicant's past history of recycling the material, whether there are contractual arrangements or market conditions bearing on the likelihood of future recycling, the reason that the material was accumulated without 75 percent being recycled in the past year, and other relevant factors. If, for example, a company has a multi-year history of selling a secondary material as a commercial product substitute, but was unable to sell 75 percent during a given year due to a temporary downturn in market conditions, and is handling the secondary material in a manner commensurate with its value as a substitute commercial product, the company may be eligible for a variance. On the other hand, a company that overaccumulates a secondary material not ordinarily reused, but that has been able to pay other companies to use the material in the past, and now has tons of

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material on hand in open piles, is much less likely to be eligible for a variance.

A variance, if granted, would be valid for only one year. If the accumulator failed to recycle 75 percent of the material on hand in the following year, it would have to petition for a new variance. Under the proposal, the company would have had to recycle 50 percent of the total accumulated materials to be eligible to apply for a second variance. In addition, a variance could only be renewed two times. In response to comments, we are not adopting either of these requirements in the final rule. There do appear to be situations, although infrequent, where secondary materials can accumulate for over two years without being recycled and still not necessarily be deemed a waste. Possible examples are certain traditionally reclaimed mining by-products that are being accumulated because of cyclically depressed metal prices. However, in determining whether to grant a variance, the longer a material has accumulated without recycling, the more likely it is that the variance application will be denied.

G. Section 261.2(d): Secondary Materials That are Designated as Solid Wastes

1. *The General Standard.* EPA proposed that particular inherently waste-like materials could be designated as solid wastes without regard for the mode of recycling. Some comments criticized this provision as being a vague catch-all, while others supported it or (in the case of certain industry commenters) conceded the need for this type of provision.

EPA is retaining this listing authority in the final regulation. A provision of this type is needed because it is impossible in practice to devise a single definition which completely distinguishes wastes from non-wastes. We continue to think that certain residual materials are inherently waste-like, either because: (a) They are typically disposed of or incinerated on an industry-wide basis, or (b) they contain toxic constituents [24] in concentrations not ordinarily found in the raw materials or products for which they substitute, which toxic constituents are not used, reused, or reclaimed during the recycling process. In addition, recycling of the materials must have the potential to pose a substantial hazard to human health and the environment. The Agency believes these criteria are relatively straightforward and understandable. Certainly they are not "vague" in any legal sense. The Agency will be required to designate in the rule that particular materials are wastes so that there is no risk that those subject to regulation are uncertain or their obligations.

The criticism that this provision is a "catch-all" also does not appear to have merit. We believe the criteria limits those materials the Agency could designate. The Agency must determine that the materials ordinarily are not recycled on a nation-wide basis, and that the material contains Appendix VIII constituents at levels not found in analogous raw materials or products. The criteria that the recycling activity potentially pose a substantial hazard also limits the Agency, by suggesting that a purpose of the activity is to dispose of the non-recycled toxic constituents, and by suggesting that the secondary materials have so little value that they are stored insecurely, and are thus waste-like.[25]

One commenter suggested that the Agency designate secondary materials as solid wastes if management of the materials presents an "unreasonable risk of injury to health or the environment." This determination would be based on an assessment taking into account such factors as effects of the material on human health and the environment, benefits of using the material, and economic consequences of listing.

This standard, as the commenter admits, is drawn essentially from the Toxic Substances Control Act. This is not the standard Congress enacted for RCRA decisionmaking. RCRA determinations are to be based on health and environmental based factors. (See 45 FR 33089 (May 19, 1980).)

The consequences of being designated as a solid waste is that the material will be within the Agency's jurisdiction no matter how it is being recycled. Thus, the particular dioxin-containing wastes designated in today's regulation (see the following subsection) are considered to be wastes (for example) even if used directly as substitutes for commercial products or as ingredients in producing a product. On the other hand, § 261.6 must be consulted to determine the type of regulation that applies to the waste.

2. *Application of the Standard to Specific Wastes.* EPA proposed to designate a group of dioxin-containing materials as solid wastes. See 48 FR 14491–492. We are modifying the proposal, in response to comments, to exclude the listed commercial chemical formulations (Hazardous Waste F027). These formulations do not meet the designation criteria because they are not chemically dissimilar from analogous commercial products (*i.e.* they are virtually the same as pesticides that are used), and they are not typically discarded. In determining if these formulations are wastes when disposed or recycled, the regulated community should refer to the rules applicable to commercial chemical products. The formulations thus would be wastes when they are discarded by being abandoned, or when they are burned for energy recovery (the manner of recycling not analogous to normal use). See § 261.33 as amended by today's rule.

We also are indicating that Hazardous Waste F021 is not designated as a solid waste if it is used as an ingredient to make a product at the site of generation. It is a solid waste if recycled in any other way (or if disposed.) The Agency is taking this step in response to comments indicating that pentachlorophenol production plants typically reuse these materials in their own production process.

H. Section 261.2(e): Secondary Materials That Are Not Solid Wastes When Recycled

1. *Secondary Materials Used as Ingredients to Make New Products, or Used as Substitutes for Commercial Products.* a. *The Agency's Subtitle C Jurisdiction.* EPA proposed that secondary materials that are used as ingredients to make new products were not solid wastes provided that distinct components were not recovered (*i.e.* reclaimed) as end products. We also proposed that secondary materials used as substitutes for commercial products in particular functions or applications are not solid wastes. See 48 FR 14477, 14487–88. An example of the former practice—*i.e.*, use as an ingredient—is the use of chemical industry still bottoms as feedstock. Use of hydrofluorosilicic acid (an air emission control dust) as a drinking water fluoridating agent, or use of spent pickle liquor as a wastewater conditioner, are examples of use of a secondary material as a commercial product substitute.

When secondary materials are directly used (or, in the case of previously used materials, reused) in these ways, we stated, they function as raw materials in normal manufacturing operations or as products in normal commercial applications. We reiterate these positions in the final regulation. These direct use recycling situations

[24] These are toxic constituents listed in Appendix VIII of Part 261. The proposal erroneously referred to "Appendix VII" (48 FR at 14491), due to a misprint by the Federal Register.

[25] We thus disagree with the commenter who argued that a hazard posed by recycling a material is not relevant in determining whether the material is a waste.

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represent exceptions to the general principle that accumulated hazardous secondary materials are hazardous wastes.

The final rule consequently states that secondary materials used as ingredients or used directly as commercial products are not wastes and so are outside the Agency's RCRA jurisdiction. They thus are not subject to RCRA Subtitle C regulations when generated, transported, or used (unless they are accumulated speculatively, as described earlier).

Most commenters agreed with the Agency on this point. Those who didn't felt that the Agency's jurisidiction over recycled secondary materials is unlimited. The Agency disagrees. Our RCRA authority over recycling of hazardous secondary materials is broad, but has some limits. The legislative history indicates that Congress rejected an approach that would have required modifying production processes in order to reduce the volume of hazardous waste generated. This is because such restrictions "i(n) many instances would amount to interference with the productive (sic) process itself. . . ." H.R. Rep. No. 94–1491, 94th Cong. 2d Sess. at 26. The Agency accordingly has interpreted its jurisdiction so as to avoid regulating secondary materials recycled in ways that most closely resemble normal production processes. These types of recycling are use of secondary materials as ingredients or as direct commercial product substitutes, or (as explained below) use in a closed-loop type of production process.[26]

b. Redrafting of the Exclusion in the Final Rule. In the proposal, exclusions for using and reusing materials directly took the form of exceptions to the definition of reclamation (proposed § 261.2(c)(1)(i)–(iii)). We have redrafted the final regulation so that § 261.2(e)(1) indicates explicitly which secondary materials used/reused in particular ways are not solid wastes. A definition of "use"/"reuse" appears in § 261.1(c). Exceptions to this principal are found in § 261.2(e)(2), and restate the situations where recycling might be considered to involve a use (or a closed-loop recycling situation, explained in the next section), but nevertheless constitutes waste management.

As noted above, there are several such use/reuse circumstances where the nature of the material or the nature of the recycling activity indicates that RCRA jurisdiction exists:

- where the material being used is inherently waste-like;
- where insufficient amounts of the material are recycled;
- where the material is incorporated into a product that is used in a manner constituting disposal or where the material is used directly in a manner constituting disposal; and
- where the material is used by being incorporated into a fuel, or being burned directly as a fuel.

In addition, when a component of the material is recovered as an end product, the material is being reclaimed, not used.

c. *Distinguishing Sham Situations.* Other commenters voiced concern that these exclusions open opportunities for sham recyclers to claim that they are using secondary materials, and so not engaging in waste management. The Agency shares these concerns, and wishes to take this opportunity to indicate some of those situations (which also were pointed out in comments) we regard as shams.

First, where a secondary material is ineffective or only marginally effective for the claimed use, the activity is not recycling but surrogate disposal. An example (provided in comments) is use of certain heavy metal sludges in concrete. The sludges did not contribute any significant element to the concrete's properties, and so we would not regard this activity as legitimate recycling.

A second example of sham use occurs when secondary materials are used in excess of the amount necessary for operating a process. Examples are when secondary materials which contain chlorine are used as ingredients in a process requiring chlorine but are used in excess of the chlorine levels required. An indication that secondary materials are *not* being used in excess is if the recycler requires product specifications on incoming secondary materials, and these specifications are in accord with those generally in use in the industry.

Another indication that a claimed recycling use is a sham is if the secondary material is not as effective as what it is replacing. Conversely, where the secondary material is as effective as the alternative virgin material, the activity is much more likely to be considered legitimate recycling. Spent pickle liquor, for example, is known to be as effective as virgin materials when used as a phosphorous precipitant in wastewater treatment. See 46 FR 44970 (September 8, 1981). This reuse is legitimate. A secondary material considerably less effective, however, could well be viewed as not being used legitimately.

Absence of records regarding the recycling transaction is another indication of a sham situation. Records ordinarily are kept documenting use of raw materials and products. Records likewise are usually retained to document secondary material use and reuse. The Agency consequently views with skepticism situations where secondary materials are ostensibly used and reused but the generator or recycler is unable to document how, where, and in what volumes the materials are being used and reused. The absence of such records in these situations consequently is evidence of sham recycling.

A final indication of sham use is if the secondary materials are not handled in a manner consistent with their use as raw materials or commercial product substitutes. Thus, if secondary materials are stored or handled in a manner that does not guard against significant economic loss (*i.e.,* the secondary materials are stored in leaking surface impoundments, or are lost through fires or explosions), there is a strong suggestion that the activity is not legitimate recycling.

A recurring type of situation posing the potential for sham use involves using corrosive wastes as neutralizing agents. The potential for disposal in these situations is high since a waste acid can be dumped into (or onto) other materials, and any resulting change in pH would be incidental to the disposal purpose of the transaction. Accordingly, EPA will not accept a claim that a corrosive secondary material is being used as a substitute for virgin acid or caustic unless indicia of legitimate recycling are present. These include that the secondary acid or caustic meet relevant commercial specifications, that they be as effective as the virgin material for which they substitute, that they be used under controlled conditions, and that in a two-party transaction there be consideration (usually monetary) for use of the material. In addition, the more contaminated the acid or caustic is in relation to virgin material, the less likely the Agency is to view its application as legitimate recycling.

We note also that persons claiming that they are recycling hazardous wastes in a manner excluded by the regulation have the burden of proof that are within the terms of the exclusion. See Section J. below.

Finally, persons intending to use secondary materials that are not listed in the Chemical Substance Inventory compiled by EPA pursuant to Section

[26] We note, in response to comments, that the materials excluded from the RCRA definition still can be hazardous materials for purposes of Department of Transportation regulations governing the transportation of hazardous materials.

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8(b) of the Toxic Substances Control Act (TSCA) must notify the Agency of the intended use at least 90 days before the use begins. See TSCA Section 5(a) and 48 FR 21722 (May 13, 1983). EPA can regulate these substances under TSCA if it determines that the manufacture, processing, distribution in commerce, use, or disposal of the substance will present an unreasonable risk or injury to human health or the environment. (TSCA, Section 5(f).) EPA can also extend the review period an additional 90 days for good cause. (TSCA, Section 5(c).)

2. *Closed-Loop Recycling.* a. *The Agency's Proposal.* The Agency also proposed to exclude from the defintion of solid waste materials that are reclaimed at the plant site where generated and that are then returned to the original production process in which the material was generated.[27] See 48 FR 14488/89. We referred to this type of operation as "closed-loop recycling," and stated that this type of operation could be viewed as an on-going production process and therefore outside the Agency's Subtitle C jurisdiction.

There were many comments on this provision. Virtually all commenters agreed that some type of closed-loop provision was justified, but disagreed about its scope. Some commenters felt that the proposal was too broad, while others stated that it should be extended to any situation where a generator reclaimed its wastes and reused the reclaimed material in a process under its control. In addition, many commenters criticized elements of the proposal as unclear, particularly what the Agency meant by "original process from which generated".

b. *Modification of the Proposal.* We have determined that the proposal was both inexact and overbroad (see below). However, we believe that there are certain "closed-loop" situtations that are so closely tied to on-going production that they should be considered not to involve solid wastes. In our opinion, there are three key requirements to a closed-loop process—that is, a production process that at some point utilizes secondary materials but nevertheless is both essentially on-going and closely interrelated throughout all steps. The first requirement is the return of secondary materials to the original process without undergoing significant alteration or reprocessing, namely *without first being reclaimed.* Second, the production process to which these unreclaimed materials are returned itself must be *primary* material based—*i.e.*, the materials must be returned to a primary production process.[28] This is because if the material originally introduced to a process already is a waste, the process residue returned to the process should not be any less of a waste than the material originally introduced. For example, a still bottom from reclamation of hazardous spent solvents would never be considered to be involved in a closed-loop operation if it were redistilled because solvent reclamation is a secondary process and spent solvents introduced to it are wastes.[29]

Third, the secondary material must be returned as *feedstock* to the original *production* process and must be recycled as part of that process. Thus, a spent degreasing solvent returned to degreasing operation would not be covered by this provision because it is not involved in actual production. It merely cleans equipment.

We consequently are stating in the final rule that secondary materials are not solid wastes when they are returned for recycling as *feedstock* to the original *primary* production process in which they are generated, and they are *not reclaimed* before they are returned to that process. The broader provision we proposed, which allowed reclamation before return to the original process, would exclude from the solid waste definition too many operations where the reclamation step is less and less directly related to the principal production process. Examples are situations where hydrochloric acid is recovered from chemical industry still bottoms, and the acid is returned to the chemical reactor. Another potential situation is when fluoride is recovered (as cryolite) from primary aluminum spent potliners and the fluoride is reused. In these examples, neither the still bottoms nor the spent potliners should be considered to be involved in a closed-loop operation because the reclamation step is ancillary to normal production activities. The proposed approach might also have excluded operations where the secondary material itself is substantially unrecoverable and contains comparatively small percentages of utilizable material. The proposal thus might have invited abuse, as companies might seek to avoid regulation by reclaiming some small increment, and returning that increment to the original production process.

We consequently are not adopting the proposed approach in the final rule. The final rule makes clear that the situations discussed in the paragraph above are *not* closed-loop recycling and so are not excluded from the definition.

c. *Explanation of the Requirements That Secondary Materials Not Be Reclaimed, and That They Be Returned To The Original Process.* The final rule raises two principal issues of interpretation: distinguishing between reclamation and incidental processing, and clarifying what the Agency means by return to the original production process. The Agency has defined "reclamation" in these regulations to mean recovery or regeneration. We further clarified, in the April 4 preamble, that processing steps that do not themselves regenerate or recover material values and are not necessary to material recovery are not reclamation. See 48 FR 14489/1. Examples are the wetting of dry wastes to avoid wind dispersal (*id.*) or the briquetting of dry wastes to facilitate resmelting. Another example, provided in comments, is sintering operations at iron and steel plants where taconite ores, flue dusts, and other iron-bearing materials are agglomerated thermally before charging to a blast furnace. Conversely, processing operations that do recover or regenerate materials so as to make them available for further use are considered to involve reclamation. Examples are dewatering of wastewater treatment sludges before the dewatered sludges are recycled, and the treatment of wastewater before recycling. (See 48 FR 14487/1, explaining that both of these operations involve reclamation.)[30]

[27] The proposal actually excluded these materials from the defintion of reclamation, but the effect of the provision was to exclude these materials from the definition of solid waste.

[28] For purposes of this provision, a "primary process" is one that uses raw materials as the majority of its feedstock. Secondary processes, conversely, use spent materials or scrap metal as the majority of their feedstock. The Agency notes that the Office of Management and Budget Standard Industrial Classification Manual uses very similar definitions in establishing primary and secondary process classifications.

[29] The requirement in the final rule that materials be returned to the original *primary* process to be eligible for the closed-loop exclusion thus subsumes part of another exclusion that the Agency proposed for secondary materials returned to primary processes. (See proposed § 261.2(c)(1)(ii) and 48 FR 14488.) As explained in the following section, we are limiting the scope of that proposed exclusion to situations where secondary materials are returned without first being reclaimed to the primary process in which they were generated. The language of the final rule (§ 261.2(e)(1)(iii)) thus indicates that secondary materials must be generated by, and returned as feedstock to processes using raw materials as their principal feedstocks in order to be considered eligible for this provision.

[30] We are aware that under this reading there are probably no secondary materials generated or stored in impoundments that would be eligible for the closed-loop exclusion. The Agency intends this result. Secondary materials stored in impoundments

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By "return to the original process", the Agency means that the (unreclaimed) secondary material must be returned to the same *part* of the process from which it was generated. The material need not be returned to the same unit operation from which it was generated. It is sufficient if it is returned to any of the unit operations associated with production of a particular product, if it originally was generated from one of those unit operations. For example, an emission control dust from a primary zinc smelting furnace could be returned to any part of the process associated with zinc production, such as the smelting furnace in the pyrolytic plant, or the dross furnace. A spent electrolyte from the primary copper production process could be returned to any part of the process involved in copper production—including the roaster, converter, or tank house. An emission control dust from steel production could be returned to the sintering plant for processing before charging to the blast furnace.

However, in the first example, if the emission control dust from the zinc smelting furnace was sent to by-product cadmium recovery operations, it would not be considered to be returned to the same of the process from which it was generated. This is because the cadmium production processes produce a different product from zinc production operations. For the same reason, if the spent electrolytes in the second example were sent to by-product recovery operations for recovery of nickel sulfate, they would not be considered to be returned to the original process. Note that this principle holds even if the by-product recovery operation is located at the same plant site.

d. *Variance For Hazardous Wastes That Are Reclaimed and Then Returned To The Original Process.* We do believe, however, that EPA's proposal—that materials reclaimed before being reused in the original primary production process are not wastes—can have some applicability. We are allowing for these situations by means of a variance. The standards and procedures for granting or denying a variance for this type of recycling are described in Section II.J. 2.(b) of Part III of this preamble.

e. *Examples.* The following examples illustrate the operation of this provision:

• Primary smelting facility A generates a dry emission control dust that it collects, stores, and resmelts in the original smelting furnace.

The emission control dust is not a solid waste because it is returned to the original primary process without first being reclaimed. (This answer assumes that the dust is not overaccumulated before it is resmelted.)

• Primary smelting facility B generates a listed wastewater treatment sludge that it dewaters and returns to the original process.

The wastewater treatment sludge is a solid waste because it is listed and must be reclaimed (in this case, recovered by dewatering) before it is resmelted.

• Generator C generates a spent solvent which it distills and returns to the same degreasing operation in which it was generated.

The spent solvent is a solid waste. Not only is it reclaimed before reuse, but it is not reused as a feedstock in a production process. (After the solvent is reclaimed, of course, it is a product and no longer a waste.)

• Generator D generates a still bottom that it burns without reprocessing for energy recovery in a boiler in the same unit operation.

The still bottom is a solid waste because it is burned for energy recovery. The closed-loop exclusion thus does not apply. Nor would it apply if recycling the still bottom constitutes disposal or if the still bottoms were overaccumulated before return to the original process.

• Generator E, a petroleum refinery, generates a hazardous by-product from refining operations that is returned to the refining process and incorporated into fuels, asphalt, and other products.

This process involves return of unreclaimed material to a primary production process but the by-product remains a waste because it is used as an ingredient in fuels and in products that are placed directly on the land. See § 261.2(e)(2) (i) and (ii).

3. *Recycling of Secondary Materials by Primary Facilities.* a. *The Agency's Proposal.* The remaining exclusion that EPA proposed was for secondary materials that are reclaimed in primary production processes. These were not considered to be solid wastes. Proposed § 261.2(c)(1)(ii); 48 FR at 14477, 14488. The usual example is secondary materials sent to a primary smelter for material recovery. The reason for the proposal was that these materials were substituting for the normal raw material feedstock. One result of this proposed exclusion would be differential regulation of secondary and primary facilities reclaiming the same materials, since the material could be a solid waste when reclaimed by a secondary smelter, but would not be when reclaimed by a primary smelter.

The proposal was imprecise regarding the scope of the exclusion. For example, we did not discuss whether it made any difference if the primary reclaimer recovered the same materials (or even the same *type* of material) originally produced, whether recovery occurred at the same or a different site, or whether the primary reclaimer recovered its own or another person's secondary materials.

There were many comments on this part of the proposal. Operators of primary processes supported it, while operators of secondary processes objected. Some states and environmental groups also objected.

b. *Modification of the Proposal.* We have decided not to promulgate this exclusion as proposed, but rather to limit its scope to the closed-loop production situations discussed in the previous section. We think the proposal was in error in failing to differentiate among the different types of fact situations where a primary process would be used for reclamation—such as the part of the process involved, location of the recovery operation, and type of material recovered. The proposal, for example, could have applied to situations where: (a) Residues are sent off-site to be recovered, (b) residues go to a by-product recovery operation, or (c) where residues are recovered in ancillary operations and the material recovered is not marketable but can be used in a primary process.[31] The Agency does not believe that an unvarying rule like the one we proposed can properly cover all these situations. Rather, when a secondary material is to be recovered in an operation different from the one in which it was generated, we believe there is a continuum with secondary materials becoming more waste-like the more the recovery operation differs from the original process, and the more physically removed the recovery operation is from the original process. The nature of the secondary material—whether it is a sludge, by-product, or a spent material, or scrap metal, how frequently it is recovered, and how it is handled before recovery—also is highly relevant. The proposed rule was deficient in failing to account for all of these factors.

are ordinarily waste-like. They usually are not stored in a manner that minimizes loss (see, *e.g.*, 48 FR 14486, as well as substantial portions of legislative history of the RCRA Reauthorization legislation), and virgin materials are rarely if ever stored in this way. We thus see this result—that wastewater treatment sludges and other wet sludges are not eligible for the closed-loop recycling exclusion—as justified both conceptually and environmentally.

[31] Cryolite recovery from spent primary aluminum potliners is a possible example of this last situation.

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We believe that the exclusion should apply only when residues from primary processes are returned in unreclaimed form to the original process where they are then reclaimed. This is the only situation where the Agency can say *a priori* that secondary materials reclaimed in primary processes are not wastes.

The by-products and sludges that are the residue from primary production processes thus can potentially be solid wastes when they are reclaimed in other primary (or secondary) processes. They are wastes if they overaccumulate before being reclaimed, and they are wastes if they are listed in §§ 261.31 and 261.32. In determining whether to list certain sludges and by-products as hazardous wastes, we intend to take into account whether they should be considered to be wastes when reclaimed. If materials are reclaimed in primary processes (such as primary smelting operations), we will evaluate how frequently the material is recycled on an industry-wide basis, whether the material is replacing a raw material and the degree to which it is similar in composition to the raw material, the relation of the recovery practice to the principal activity of the facility, and whether the secondary material is managed in a way designed to minimize loss—all of which show that the material is handled as a commodity.

As stated in the previous section, hazardous secondary materials returned for reclamation to the secondary process in which they were generated are not excluded from being wastes. The materials are not substituting for raw materials normally used, and the operations themselves—using as they often do spent materials as a principal feed—are reclamation processes, not ordinary production operations. Thus, return of a residue to this type of process is not the same as a continuous production operation.

The final regulations thus provide that the following secondary materials are wastes when reclaimed by either primary or secondary reclamation operations, unless the materials are returned to the primary smelting process from which they were generated without first being reclaimed:

(1) Sludges and by-products that are listed in §§ 261.31 and 261.32

(2) All hazardous spent materials;

(3) All hazardous scrap metal.

In addition,

(4) Any secondary material is a waste if overaccumulated.

c. *Examples.* The following examples illustrate these principles:

• Primary smelter A generates a listed emission control dust that it sends to primary smelter B for metals recovery.

The dust is a solid and hazardous waste because it is a listed sludge being reclaimed.

• Primary smelter B generates a listed emission control dust that it reclaims itself in an as-is condition in its own smelting furnace.

The dust is not a solid waste because it is being reclaimed as part of a closed-loop recycling process, and has not been reclaimed before reintroduction to that process.

• Primary aluminum smelter A generates spent potliners from which it recovers fluoride for use in its own process.

The potliners, a spent material, are a solid waste.[32] They are not returned to the smelting process for recovery, but to a different unit operation. In addition, fluoride recovery is an ancillary activity, far removed from the production of aluminum, the principal activity of the primary aluminum facility. (In fact, this operation is probably best viewed as hazardous waste treatment because the main purpose of the operation is to treat the cyanide in the potliners, not to recover fluoride. See 49 FR 8746 (March 8, 1984).)

• Solvent reclaimer S generates hazardous still bottoms from its distillation operation and mixes these still bottoms on-site with virgin oil. S then sends the mixture to a fuel processor.

The still bottoms are solid wastes because they are used to produce a fuel. The fact that this operation occurs at a single site is irrelevant. The mixture of still bottoms and oil remains subject to regulation as a hazardous waste as well.

I. Secondary Materials Specifically Excluded From the Definition of Solid Waste

1. § *261.4(a)(6): Black Liquor Reclaimed and Reused in The Kraft Paper Process.* Pulpmaking processes in the paper industry use chemicals to digest wood chips, and the spent chemicals are recovered from the digester, reclaimed by burning in a recovery furnace, and then reused in the digester in approximately their original form. "Black liquor" is the name given to the spent chemicals, which are caustic and sometime corrosive. Recovery and reuse of black liquor can occur at a single paper mill, and also can involve a second paper mill which reclaims black liquor for its own use or for reuse by the generating mill. All Kraft paper mills reclaim their black liquor (or have the black liquor reclaimed), and little is ever discarded. The Kraft process itself is not economically viable without recovering the black liquor. Black liquor is customarily stored in tanks before being reclaimed, but also is stored in surface impoundments. (The paper industry estimates that one-third of the approximately 125 domestic Kraft mills have black liquor impoundments.)

The Agency has tentatively determined that black liquor, on a generic basis, meets the standards for a closed-loop variance (see section II.J.2. b. of Part 3 of the preamble below) and so is not a solid waste when recycled in this way. (We also indicated in the proposed regulation that black liquor recovery was a closed-loop type of operation. 48 FR 14489.) At least where black liquor is stored in tanks rather than in surface impoundments, black liquor reclamation is integrally tied to the Kraft paper production process, whether it occurs at a single or different plant. All Kraft mills practice black liquor recovery, and the recovery is economically essential to the process. An end use for black liquor is readily available. The whole operation is essentially an on-going process, with chemicals being used, recovered, and returned in their original form to the same process in which they were generated, or to an analogous process at a different facility. Because this operation appears to occur for all black liquor generated, we have determined that black liquor is not a solid waste when recycled in this way.

The Agency, however, is continuing to investigate the degree of recycling that occurs when black liquor is stored in surface impoundments. Although some (and perhaps most) of the black liquor stored in impoundments is recycled in a closed-loop manner, there are some reasons to question whether this is invariably the case. These reasons are:

• Black liquor may remain in impoundments without being recycled for long periods of time because of: (a) Inadequate capacity of the black liquor recovery furnace; (b) the lack of a nearby facility to sell or trade the black liquor; and (c) difficulties in pumping the black liquor from an impoundment due to contamination, dilution, or coagulation of the black liquor with impoundment bottom solids, wood chips, or rain.

• Many black liquor impoundments are unlined, and so may leak.

• Black liquor impoundments are often built to accommodate excess black liquor caused by process upset

[32] This waste is currently exempt from regulation as a result of EPA's interpretation of Section 3001(b)(3) of RCRA.

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conditions such as loss of a set of black liquor evaporators or loss of a recovery furnace. When this occurs, the black liquor in the impoundment is accumulated in excess of what can be accommodated at the facility and so may not be recycled, or not be recycled for a long time.

In light of these uncertainties, the Agency is investigating further whether black liquor stored in an impoundment before recycling in the Kraft process is a waste. In addition, we note that black liquor that is disposed of and not recycled is a waste, and if hazardous, a hazardous waste. This includes black liquor that leaks, leaches, or overflows from an impoundment and is not recycled. Furthermore, the final rule states that black liquor stored before recycling remains subject to the rules on speculative accumulation. Thus, paper mills accumulating black liquor must show that they are recycling 75% of the amount on hand at the beginning of a one-year period.

In summary, today's final rule states that:

- Black liquor accumulating before recycle to the Kraft paper process is not a Subtitle C solid waste. At least for the present time, this exclusion includes black liquor that is stored in a surface impoundment before recycling. The person accumulating must show that the black liquor is not being accumulated speculatively, or the black liquor will be considered to be a waste;

Black liquor that is recycled in some other manner could be a waste and black liquor that is disposed of is a waste.

2. *§ 261.4(a)(7): Spent Sulfuric Acid Used to Produce Virgin Sulfuric Acid.* Spent sulfuric acid is frequently used as a feedstock in the production of virgin sulfuric acid. It is normally reintroduced into the original sulfuric acid production process where sulfur values are recovered and absorbed into existing sulfuric acid. 45 FR 14487 n.30. Under the proposal, spent sulfuric acid recycled in this way was not considered to be a solid waste because it was used as an ingredient, used in a primary process, and was burned in an industrial furnace. See 48 FR 14483, 14487 n.30, 14488 n.31.

As discussed earlier (see Section E. above), some commenters questioned the regulatory status of spent materials that are reclaimed and then used as feedstocks. We indicated that normally the spent material would be considered to be a solid waste until it was reclaimed. However, we agree that our discussion of spent sulfuric acid at proposal (in footnote 30) created some confusion.

To eliminate any confusion, we are promulgating a specific exclusion stating that spent sulfuric acid recycled in this way is not a solid waste. As we explained at proposal, the spent sulfuric acid recycling process more closely resembles a manufacturing operation than a reclamation process. In addition, the operation is well established, and accounts for approximately 9% (in 1982) of the roughly 33 million tons of sulfuric acid produced annually. At least one state (California) has indicated by statute that spent sulfuric acid returned to the sulfuric acid production process is not a solid waste. EPA is therefore declaring explicitly that spent sulfuric acid returned to a sulfuric acid production process is not a solid waste. The acid is a hazardous waste if disposed (assuming it is corrosive or exhibits other hazardous waste characteristics), and could be a hazardous waste if recycled in some other manner (such as burning for energy recovery).

J. § 261.2(f): Burden of Proof in Enforcement Actions

EPA proposed that if respondents in enforcement actions raised a claim that a particular secondary material was not a solid waste (or was conditionally exempt from regulation) because it was recycled in a particular manner then they had the burden of proof to show that they were indeed recycling in that way. (Proposed § 261.2(d) and 48 FR 14492.) We are adopting this provision in the final regulation.

As discussed earlier in Section F, RCRA creates a broad remedial scheme to ensure that hazardous wastes are managed safely from cradle-to-grave. The regulatory framework envisaged for this problem extends to hazardous wastes being recycled, and normally includes any hazardous secondary material that is being recycled or that is accumulated with expectation of recycling.

Certain exceptions to this remedial scheme to exist. We think it appropriate, and the rule states explicitly, that the burden of proof (in the sense of both the burden of producing evidence and the burden of persuasion) is on the persons claiming that their hazardous secondary material is not a waste because it is within the terms of any of these exceptions. This provision, thus, restates the legal principle that parties claiming the benefits of an exception to a broad remedial statutory or regulatory scheme have the burden of proof to show that they fit the terms of the exception. *See, e.g. SEC* v. *Ralston Purina Co.*, 346 U.S. 119, 126 (1953) (exception to Securities Act registration requirements); *U.S.* v. *First City National Bank of Houston*, 386 U.S. 361, 366 (1967) (exception to merger provisions of Clayton Act): *Arnold* v. *Ben Knowsky, Inc.*, 361 U.S. 388, 393 (1960) (exception to Fair Labor Standards Act for retail sales); *Weyerhauser, Inc.* v. *Costle*, 590 F.2d 1011, 1040 (D.C. Cir. 1978) (burden of proof is on applicant for Agency-created fundamentally different factors variance).

Viewed another way, the regulations presume that hazardous secondary materials stored before recycling are hazardous wastes. The person accumulating can prove, however, that the materials are not wastes due to the manner of recycling (including the amount of material being recycled). These facts are within the special knowledge of the person accumulating the material. Presumptions of this type have been upheld consistently when they further interpret a remedial statutory purpose, guard against harm to public health and safety, and where the facts to rebut the inference are particularly within the knowledge of the other party. *See Beth Israel Hospital* v. *NLRB*, 437 U.S. 482, 493, 502 (1978); *U.S.* v. *General Motors Corp.*, 561 F.2d 923, 924 (D.C. Cir. 1977) (Leventhal J. dissenting in part).

Furthermore, this type of claim is an affirmative defense, for which it is appropriate that the person asserting the defense have the burden of proof. In addition, the facts underlying the recycling defense would be peculiarly within the knowledge of the party asserting the defense, a situation as noted above where it is appropriate for that party to have the burden of proving the issue. We thus disagree with those commenters claiming that the Agency lacked authority, or was ill-advised, to allocate a burden of proof in this regulation. Indeed, the Agency has allocated burdens of proof to respondents in other regulations that create an affirmative defense or an exception to a generally applicable principle. See § 122.42(n)(4) (permittee has burden of proof to establish the affirmative defense of upset); § 124.5 (National Pollutant Discharge Elimination System permit applicant has burden of persuasion that a permit authorizing a discharge of pollutants should be issued). This allocation of the burden of proof was affirmed in *American Petroleum Institute* v. *EPA*, 661 F.2d 340, 352, 354 (5th Cir. 1981).

There is no formal recordkeeping requirement in the regulation. However, persons must keep whatever records or other means of substantiating their claims that they are not managing a

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solid waste because of the way the material is to be recycled.[33] They also must show that they are not overaccumulating their secondary materials. See Section F.3. above. In addition, owners or operators of facilities claiming that they are engaged in recycling must show that they have the necessary equipment to do so.

Part III: Standards for Managing Hazardous Wastes That are Recycled

I. An Overview of the Final Regulations

Section 261.6 of the final regulation contains the regulatory requirements for hazardous wastes that are recycled. The final rule contains many of the provisions that were proposed, but also eliminates all but one of the proposed conditional exemptions. The other major change from the proposal is that we are adopting standards and procedures for certain variances.

A. Outline of the Final Regulations

As in the proposal (and as under current regulations), hazardous wastes to be recycled—called "recyclable materials" in the regulation—are ordinarily subject to regulation under Parts 262 and 263 of the regulations (when generated and transported) and to the storage facility requirements in Parts 264 and 265 (when stored before recycling). We usually do not regulate the recycling process itself, except when the recycling is analogous to land disposal or incineration. (See 45 FR 33092–093 (May 19, 1980); see also H.R. Rep. 98–198, *supra*, at 46 indicating that uses constituting disposal and burning for energy recovery are to be regulated.) In addition, certain recyclable materials and certain types of recycling are subject to regulatory standards that are not completely identical to those contained in Parts 262 through 265 and Parts 270 and 124. The regulatory standards for these types of recycling activities are contained in various subparts of Part 266. Section 261.6(a)(2) serves as a cross reference, listing those recyclable materials and recycling activities subject to special standards. We are adopting Part 266 standards for the following recycling activities or recyclable materials:

- uses constituting disposal;
- burning for energy recovery in boilers and industrial furnaces and using recyclable materials to produce a fuel;
- recyclable material from which precious metal are to be recovered;
- spent lead-acid batteries being reclaimed.

Used oil that is to be recycled will eventually be regulated under Part 266 but presently is exempt from regulation during the time it takes to develop standards consistent with the requirements of the Used Oil Recycling Act and the HSWA (see 48 FR 14496).

We also are exempting permanently two types of recyclable materials—industrial ethyl alcohol to be reclaimed, and used batteries or cells returned to a battery manufacturer for regeneration—from all Subtitle C regulation. These exemptions are found in § 261.6(a)(3).

Scrap metal (that is hazardous) and that is to be recycled is also exempt for the present time while the Agency investigates further whether there is a need for regulation and what an appropriate regulatory regime might be if regulation is necessary.

Finally, we have added variances from § 261.6 or Part 266 (as well as § 261.2) for certain types of recyclable materials and recycling activities. These variances—to be implemented at the Regional or State level—can result in increased regulation, or (for materials determined not to be solid wastes) no regulation. Standards for granting or denying variances are found in §§260.31 and 260.32 (variance from being a solid waste), and 260.40 (additional regulation of generators or storage facilities). Procedures for implementing these variances are found in new §§ 260.33 and 260.41.

B. Elimination of Conditional Exemptions

EPA proposed that four types of reclamation activities be conditionally exempt from regulation: (1) A single person reclaiming his own hazardous wastes; (2) a single person reclaming another's hazardous wastes for his own use; (3) batch tolling reclamation arrangements; and (4) precious metal reclamation. With the exception of precious metal reclamation, we are not adopting these exemptions in the final rule. (We are also soliciting comment as to whether batch tolling reclamation procedures should be eligible for a variance.) As stated in Part I of the preamble, we have concluded that there is danger of substantial harm from leaks and spills if these activities are not regulated. We are supported in this conclusion by comments of states, hazardous waste management organizations, environmental groups, and the Congressional Office of Technology Assessment.

We have also concluded that all of the Part 264/265 standards should apply to those recycling situations that are not conditionally exempt. We considered whether it was possible to develop tailored standards for these facilities, leaving out those regulatory standards which guard solely against the risk of overaccumulation (a risk unlikely to be present; see 48 FR 14477) and retaining those standards which guard against risk of spills or leaks.

This type of tailoring proved impossible. Design and containment standards for containers, tanks, and piles are necessary to protect against leaks and spills, and were indeed devised largely to prevent these risks. Closure and financial responsibility requirements, which do guard against overaccumulation, also provide protection should leaks or spills occur. Thus, facility owners and operators must ensure that contamination that has occurred during operation of the facility, such as by spills or leaks, will be controlled, minimized, or elinimated so that post-closure escape of contaminants will not occur. See § 264.111, 264.112(a)(3), and 264.114. The financial responsibility provisions ensure that funds will be available to carry out closure responsibilities, including those just mentioned. Contingency and emergency procedures are also needed to respond to short-term spills or fires, as are requirements for preparedness and prevention. The tracking requirements of the manifest system are needed if the whole regulatory system is to be enforceable and implementable (most state commenters were emphatic on this point; many industry commenters likewise favored use of a manifest). Transportation standards are chiefly designed to protect against risks from spills, and to ensure proper tracking, as are the Part 262 generator standards. We consequently cannot justify tailored regulations for these types of operations.

C. Summary

Tables 9 and 10 compare the various provisions of the current, proposed, and final regulations. Table 11 provides a flow chart which identifies the various requirements for the different recycling activities and materials.

[33] Absence of documentation not only would make it difficult or impossible for a respondent to carry its burden of proof, but also would itself be evidence that the claimed recycling is a sham. See Section II.H.1.c. above

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TABLE 9. COMPARISON OF THE VARIOUS PROVISIONS BETWEEN THE EXISTING, PROPOSED, AND FINAL RULES

Subject	Existing provision	Proposal	Final rule
Exemption for recycled hazardous wastes exhibiting a characteristic.	§ 261.6 (a)	Eliminated	Eliminated.
General regulatory standards for recycled hazardous wastes.	§ 261.6 (b)	§ 261.6 (c), (d) and (o).	§ 261.6 (b) and (c).
Redesignation of recycled hazardous wastes.		§ 261.6 (a)	§ 261.6 (a).
Complete exemption for certain recyclable materials.		§ 261.6 (b) (vii).	§ 261.6 (a) (3).
Conditional exemptions for certain recyclable materials.		§ 261.6 (b) (i)-(iv).	Eliminated except for precious metal recycling (Part 266 Subpart F).
Reference to tailored management standards for recyclable materials.		§ 261.6 (f)	§ 261.6 (a) (2).
Standards for uses constituting disposal.		§ 261.6 (e)	Part 266 Subpart C.
Standards for recyclable materials to be burned for energy recovery.		§ 261.6 (b) (v).	Part 266 Subpart D.
Standards for spent lead-acid batteries being reclaimed.		Part 266 Subpart D.	Part 266 Subpart G.
Variances			Part 260 (standards and procedures).

TABLE 10. COMPARISON OF THE REGULATORY REQUIREMENTS BETWEEN THE PROPOSED AND THE FINAL RULE FOR THE VARIOUS RECYCLING ACTIVITIES

Activity	Proposal	Final
Use constituting disposal.	Regulate as land disposal (waste-derived products placed on the land were not defined as solid wastes).	Regulate as land disposal; exempt waste-derived products for the time being.
Burning in boilers or industrial furnace for energy recovery.	Regulate transportation and storage of listed wastes and hazardous sludges before burning; burning is exempt; blenders would also be regulated when they store spent materials exhibiting a hazardous waste characteristic.	Regulate transportation and storage of listed wastes and sludges before burning; burning is exempt.
Generator reclaiming own wastes.	Conditionally exempt.	Regulate under Parts 262-265.
Person reclaiming someone else's wastes for own use.	do	Regulate under Parts 262-265.
Wastes reclaimed pursuant to batch tolling agreements.	do	Regulate under Parts 262-265.
Wastes reclaimed to recover precious metals.	do	Conditionally exempt (Part 266, Subpart F).
Spent lead-acid batteries being reclaimed.	Regulate when battery reaches the reclaimers' site.	Regulate when battery reaches the reclaimers' site (Part 266, Subpart G).

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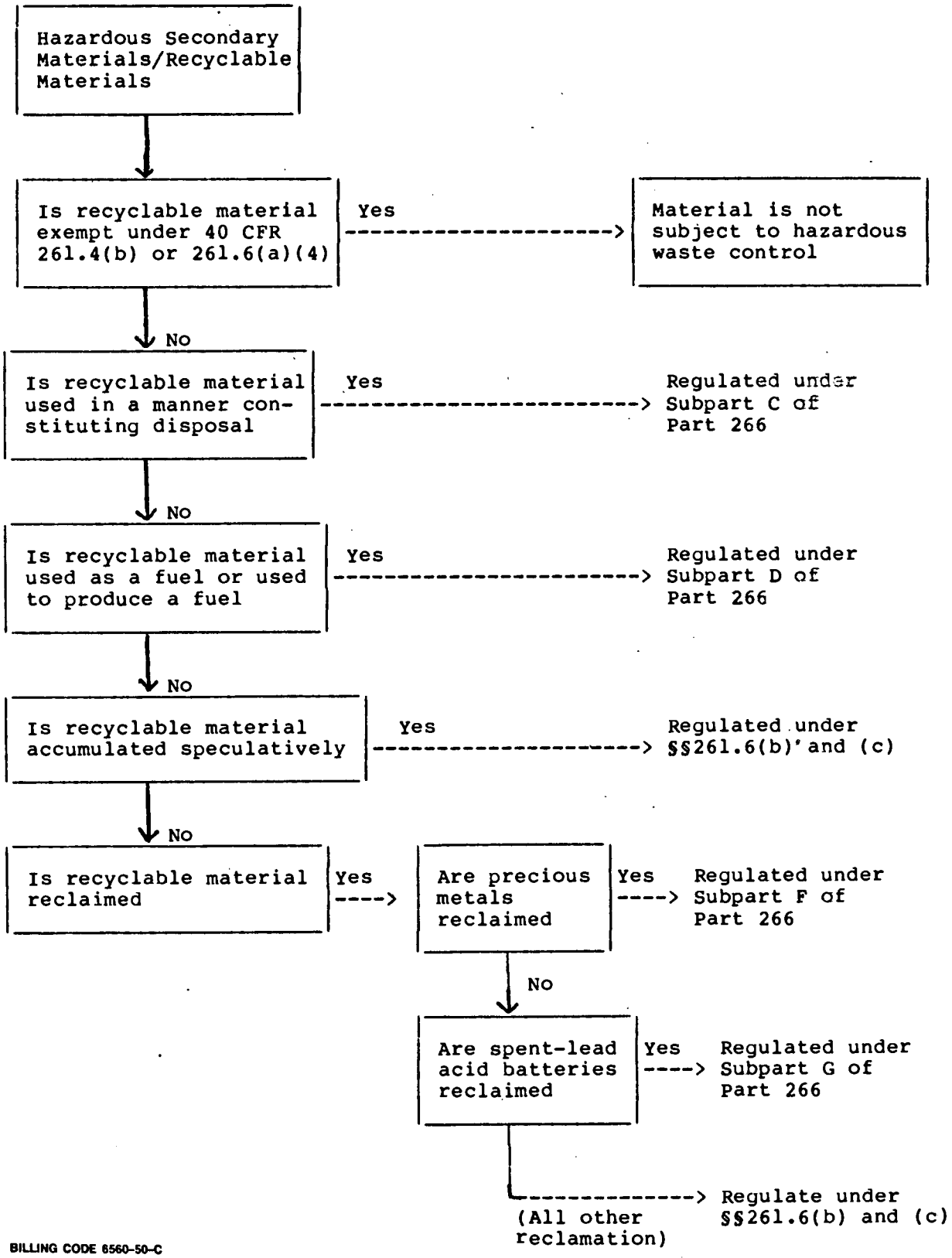
Table 11: Decision Tree Which Identifies the Various Regulatory Requirements for the Different Recycling Activities and Materials



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II. Discussion of Specific Provisions of the Regulation

A. Section 261.6(a)(1): Recyclable Materials

To avoid conceivable stigmatization, EPA proposed that hazardous wastes that are to be recycled be called "regulated recyclable materials." Most comments favored this approach, and we are adopting it in the final rule, choosing the less cumbersome name "recyclable material." As stated in the proposal, however, all Section 7004(b) announcements and notices regarding permits for facilities managing these materials must still refer to hazardous waste. See 48 FR at 14493/3.

B. Section 261.6(a)(2)(i) and Part 266 Subpart C: Recyclable Materials Used in a Manner Constituting Disposal

1. *The Proposal Rule.* EPA proposed that hazardous wastes used in a manner that constitutes disposal be regulated under the Part 264 and 265 regulations applicable to land treatment or landfill disposal. Storage and transportation occurring before the actual recycling also were to be fully regulated. See 48 FR 14496–497. Only materials placed directly on the land in an "as-is" condition or placed on the land after simple mixing were defined as wastes, however, and so were subject to these requirements. Most commenters indicated that the land treatment and landfill regulations were inappropriate for this type of recycling because those regulations contemplate existence of a facility whereas use constituting disposal recycling activities occur in a variety of situation-specific contexts which may be dissimilar. Certain of the land disposal regulations, they argued—such as closure or post-closure care or liner installation requirements—would be very impractical to apply to a recycling situation where a hazardous sludge was used as road-base material on a stretch of highway. Other facility standards, they claimed, such as plant security, or preparedness and prevention, normally don't apply to this kind of recycling.

2. *The Final Rule.* The Agency has decided to promulgate the regulatory scheme essentially as proposed. The changes from the proposal, explained in 3. below, have to do with a clearer explanation of what type of chemical changes to a waste-derived product result in deferral of regulation. Under the final rule, hazardous wastes placed on the land in the form generated, or after simple mixing that doesn't significantly alter the waste's chemical character, are subject to regulation under the Part 264 and 265 permit requirements for landfill or land treatment facilities. The Agency indeed has indicated as long ago as the preamble to the May, 1980 interim status standards that these regulations would apply to hazardous wastes placed on the land, whether or not recycling is a purpose of the activity. See 45 FR 33205–206 (any benefit, such as providing crop nutrients, from placing hazardous wastes on the land is incidential, and the practice is to be regulated as land treatment); see also 48 FR 14484/3 (April 4, 1984) (direct application of hazardous waste to land as fertilizer is land treatment, citing the Background Document for the July 26, 1982 land disposal permitting standards).

It may be, as commenters state, that the Agency ultimately can develop a more tailored regulatory system for wastes recycled to the land. We are not able to do so at the present time. See Sections II.C.1. and 2. of Part II of the preamble. Since the Agency is implementing a statute designed to control hazardous wastes placed on the land, it is inappropriate to defer regulating this practice any longer. The Agency therefore does not intend to delay regulating this practice while a different regulatory scheme is developed and debated. If wastes are safe to put on the ground, the delisting mechanism provides some means of demonstrating that the practice can occur without regulation. (See § 260.22 which applies to listed wastes; wastes exhibiting a characteristic of hazardous waste could not be placed on the land without complying with applicable Part 264 or 265 standards.)[34]

We note that the HSWA includes a prohibition banning use of hazardous waste (except wastes exhibiting the characteristic of ignitability) mixed with waste oil, used oil, or other materials for dust suppression or for road treatment. See RCRA amended Section 3004(1). We are adding this prohibition to the hazardous waste regulations in another rulemaking codifying provisions of the HSWA.

3. *Exemption For Hazardous Waste-Derived Products.* As we indicated in Part II of the preamble, we are deferring regulation of hazardous waste-derived products that are placed on the land. We are deferring action because waste-derived products may present less potential risk than wastes placed directly on the land without significant chemical change, due to the chemical alteration and dilution of toxic constituents that can occur in the course of the process. Use of hazardous waste-derived commercial products on the land also is more clearly a recycling activity than direct waste application[35], and this use thus is a better candidate for separate regulatory standards. In any case, the Agency wishes to obtain public comments on this issue in the context of a specific proposal.[36]

The final rule thus states that products that contain hazardous wastes, which wastes have undergone a chemical reaction so as to become inseparable by physical means, are not presently subject to RCRA Subtitle C regulation when they are used in a manner constituting disposal. We think the phrase 'have undergone a chemical reaction so as to become inseparable by physical means' expresses our intention better than the language used at proposal, namely 'without essential change to their identity or after simple mixing'. The waste-derived products for which we are deferring regulation are those where the hazardous wastes have undergone chemical bonding, so that they are chemically transformed. The waste-derived products for which we are *not* deferring regulation are those where the waste is mixed but not chemically reacted. (An exception is for commercial hazardous waste-derived fertilizers which would not have to undergo chemical bonding to be exempt.) The language used in the final regulation is drawn from 40 CFR § 116.3 (definition of "mixture") but expresses a familiar physical concept. See *Condensed Chemical Dictionary*, 10th ed., Van Nostrand Reinhold Co. (1981).

Examples of hazardous waste-derived products in which contained wastes have undergone chemical bonding, and so are deferred from regulation, are waste-derived cement and asphalt. In these processes, the constituents polymerize and so are essentially inseparable by physical means.[37] They

[34] Delistings do not apply on a site-specific basis, however. The petitioner must demonstrate that the waste will not cause substantial harm to human health and the environment if left unregulated in any reasonably-occurring management setting.

[35] The Agency was not considering waste-derived products in its 1980 preamble statement quoted earlier.

[36] We note, however, that the wastes must contribute to the effectiveness of the waste-derived product for the Agency to regard the waste as being recycled. For example, a waste used in a fertilizer would have to contain nutrients or micronutrients; a waste used in cement would have to have pozzolanic properties. If a waste does not contribute to the product, we consider the waste to be disposed of.

[37] Technically, not every constituent introduced to cement or asphalt becomes chemically bonded to the polymer. Some constituents become trapped in the polymer rather than chemically bound. Because cement and asphalt are not viewed as chemical mixtures and are commercial products, the Agency intends to defer regulation of hazardous wastes-derived cement and asphalt at this time.

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are not in solution or otherwise mixed. On the other hand, wastes applied to the land after drying or dewatering remain subject to regulation. Hazardous wastes that are mixed with used oil are another example of wastes that are mixed, not chemically reacted. See 48 FR 14496/1. They therefore are subject to regulation under the landfill or land treatment facility standards if applied to the land.

The final rule also states that a waste-derived material must be a commercial product before it is exempt from regulation under this provision. A commercial product is one marketed for general use, not just the use of the waste generator or user. If a generator were to add a waste to other material so that the waste is chemically reacted and then were to apply the waste-derived product to its own land without also selling the product, the land application would remain regulated under today's rule because it does not involve a commercial product. (This answer assumes the waste remains hazardous after the chemical change.)[38]

The Agency recognizes that the distinctions between wastes subject to regulation when placed on the land and hazardous waste-derived products for which regulation is deferred are not ideal. A better scheme is the one we ultimately envision, where all of these wastes are potentially subject to regulation and (at least for waste-derived products) a mean exists for the producer or user of the product to demonstrate that the product is safe to use in a situation-specific context. This scheme requires further development and proposal before it can be implemented. In the interim, we are regulating those practices most closely resembling land disposal.

4. *Exemption for Commercial Hazardous Waste-Derived Fertilizers.* The Agency indicated at proposal that many waste-derived fertilizers were not covered by the proposed rule. 48 FR 14485/1. Commenters pointed out that the mixing involved in producing mixed waste-derived fertilizers does not ordinarily change the chemical character of the wastes contained in the product, and asked for further clarification of the rule as it applies to waste-derived fertilizers.

We do not intend to regulate commercial waste-derived fertilizers at this time because we need to study further the possible hazards associated with their use. We are therefore indicating in the final rule that commercial waste-derived fertilizers are not subject to regulation at this time. (We also note that the normal application of such fertilizer does not appear to constitute a release under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). See CERCLA Section 101(22)(D) and S.Rep. No. 96-848, 96th Cong. 2d Sess. 46.) By 'commercial fertilizers', we mean fertilizers produced for the general public's use and not for the exclusive use of the generator. When a hazardous waste generator applies its waste, mixed or not, solely to its own land as a fertilizer, we believe that disposal is a major purpose of the practice, and that the land disposal rules should apply. See 45 FR 33205-206.

5. *Regulation of The Transport and Storage of Hazardous Waste Before Processing of Waste-Derived Products To Be Placed On The Land.* The final rule also regulates immediately all transport and storage of these wastes before the time they are actually processed into waste-derived products to be placed on the land. Likewise, if wastes are placed on the land in the form generated or after simple mixing, they are subject to regulation when stored or transported before being placed on the land. For purposes of transportation and storage, therefore, these wastes are regulated like all other hazardous wastes prior to land disposal. The Agency believes that these wastes can pose the same hazards when stored and transported as other wastes awaiting land disposal, and consequently that comparable regulation is called for. There have indeed been a number of damage incidents associated with both transport and storage of hazardous wastes prior to processing to produce waste-derived products to be placed on the land, confirming that regulation is necessary. (See Appendix A, Damage Incidents.)

6. *Example.* The following example illustrates how these provisions will operate:

- Generator G generates a hazardous sludge that can be used as an ingredient in fertilizer. G stores the waste in a pile for 30 days and then ships it by truck to a fertilizer-producing plant (F), who stores it in a pile and later blends it with other materials and sells the resulting product as a commercial fertilizer. The fertilizer eventually is sold and applied to the land.

G is a generator subject to Part 262 standards, and its storage pile requires a Part 264 permit or must meet interim status standards (waste piles are not covered by the 90-day accumulation exception in § 262.34). The transporter must comply with Part 263. F, the fertilizer producer, must obtain a storage permit for its waste pile or comply with interim status requirements. The waste-derived fertilizer is not presently subject to regulation because it is sold as a commercial product.

C. Section 261.6(a)(2)(ii) and Part 266 Subpart D: Recyclable Materials Burned for Energy Recovery in Boilers and Industrial Furnaces

We already described (in Section II. D. of Part II of this preamble) that for the time being, the Agency is leaving in place the regulatory system contained in existing § 261.6. We summarize these existing requirements here:

- Generators sending listed hazardous wastes (*i.e.* wastes listed in §§ 262.31 or 261.32 or blended mixtures containing these wastes), or hazardous sludges to fuel processors or burners are subject to Part 262. Generators who store these same wastes before burning for energy recovery must comply with the Part 264 or Part 265 storage standards or with § 262.34. Generators storing non-sludge characteristic wastes before burning them for energy recovery are exempt from regulation.
- Transporters taking listed hazardous wastes and hazardous sludges, or blended mixtures containing these wastes, to fuel processors or burners are subject to Part 263. Transporters taking unlisted, non-sludge hazardous wastes directly from generators to fuel processors or to burners, or taking hazardous waste-derived fuels (*i.e.* fuels which contain hazardous waste) from fuel processors to burners, are not subject to regulation (when they transport such wastes).
- Hazardous waste fuel processors are subject to full regulation under Part 264/Part 265 when they store listed wastes and hazardous sludges (including mixtures containing these wastes before processing. The fuel they produce is not subject to regulation.
- Hazardous waste fuel burners are subject to storage requirements when they store listed wastes and hazardous sludges, but not when they store non-sludge unlisted wastes or hazardous waste-derived fuels received from fuel processors who didn't generate the waste.
- Burning of hazardous wastes for legitimate energy recovery in boilers or in industrial furnaces is not presently subject to regulation.

These rules are temporary only. Our forthcoming proposed rule on burning hazardous waste and contaminated used oil sets forth our contemplated regulatory regime.

[38] For this reason, stabilized waste that are applied to the land are not covered by this provision because stabilized wastes are not commercial products. To the same effect, see 48 FR at 14485/1.

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We also note that the HSWA contains two provisions relevant to this discussion. The first prohibits cement kilns located in cities with populations greater than 500,000 from burning hazardous waste fuel unless the kiln complies with requirements applicable to hazardous waste incinerators. See RCRA amended Section 3004(q)(C)(2)(i). Since the prohibition is imposed by statute, it applies to *all* hazardous waste fuels, not just hazardous waste fuels containing listed wastes and sludges.

The second statutory requirement involves labelling of hazardous waste fuels. The new amendments provide that any person who produces, distributes, or markets a hazardous waste fuel must include a warning label in the invoice or bill of sale stating that the fuel contains a hazardous waste and listing all hazardous wastes contained therein. See RCRA amended Section 3004(r)(1). This requirement again applies to *all* hazardous waste fuels, and so applies to fuels containing characteristic spent materials and by-products, as well as listed wastes and sludges. Certain hazardous waste fuels are exempt from this warning label requirement, however. These are petroleum coke containing hazardous waste ingredients (unless the coke exhibits a hazardous waste characteristic), and fuels from petroleum refining containing oil-bearing hazardous wastes indigenous to refining (amended Sections 3004(q)(2)(A) and 3004(r) (2) and (3)), respectively.

These requirements are being added to the hazardous waste regulations by another rulemaking proceeding which codifies portions of the HSWA.

D. Section 261.6(a)(2)(iii) and Part 266 Subpart E: Recycled Used Oil

This provision is reserved for the regulations implementing the Used Oil Recycling Act (UORA) (Section 3014 of RCRA). This provision requires EPA to conduct an analysis and evaluate the effect of regulation on used oil recycling. EPA presently is conducting studies and developing regulations that satisfy the requirements of the UORA. We will soon propose the first of these regulations dealing with contaminated used oil burned for energy recovery, and will be proposing additional regulations in the future.

E. Section 261.6(a)(2)(iv) and Part 266 Subpart F: Precious Metal Reclamation

1. *Retention of The Partial Exemption.* Although EPA has concluded that most of the proposed conditional exemptions are unwarranted, we continue to believe that the exemption for precious metal-containing wastes being reclaimed for their precious metal content remains justified because of the high value of the metals being reclaimed. We noted in the first part of this preamble that a decision on how carefully wastes are stored before reclamation turns largely on a weighing of how valuable the wastes are and the cost of buying virgin products to replace reclaimed materials. The precious metals being reclaimed from these wastes are at the high end of the value continuum, ranging from values of approximately $9.00 per troy ounce (silver) to $600.00 per troy ounce (iridium and rhodium).

An examination of how these wastes are managed confirms that they are accorded special care due to their value. Management of these materials ordinarily is characterized by very careful handling from point of generation to point of recovery. Wastes containing these metals are at least placed in containers, and are sometimes neutralized, dried and shipped—with armed guards—in pouches to the reclaimer. Reclaimers and generators often enter into batch tolling agreements, requiring reclaimers to return the theoretically reclaimable amount of metal to the generator. For this purpose, wastes are typically assayed by both the generator and the reclaimer for precious metal content, and precautions are taken by the reclaimer to avoid loss. Wastes are containerized before reclamation; the Agency is not aware that open piles or impoundments are used for storage. Accumulation time by reclaimers also tends to be short (less than one month), because reclaimers often are required to return the reclaimed metal (or cash) to the generator within that time.[39]

The Agency thus believes that the value of the contained metals, corroborated by the usual management practices for these wastes, supports the partial exemption. At the same time, the Agency does not believe a complete exemption is warranted. As pointed out in the proposal, individual precious metal operations have caused environmental harm, and some of the wastes being reclaimed—such as spent cyanide solutions—are very hazardous. In this regard, we note that some precious metal reclaimers themselves supported a partial, rather than total exemption. (See, *e.g.*, Comments of Englehard Industries Division, July 30, 1983.)

The rule consequently states that wastes to be recycled are exempt from all but the following requirements:

(a) Notification requirements under Section 3010

(b) Manifest requirements

(c) Requirements precluding overaccumulation; and

(d) Recordkeeping requirements to document that wastes are not being overaccumulated.

Manifest requirements are necessary to create a paper trail to track wastes from the generator to the reclaimer. To enforce the requirement against overaccumulation, we are requiring generators, reclaimers, and intermediary facilities accumulating the wastes to keep records showing the volume of wastes on-hand at the beginning of the calendar year, the amount of waste generated or received during the one-year period, and the amount of waste remaining at the end of the period.

We are making this portion of the rule effective immediately because the regulated community does not need time to come into compliance. RCRA amended Section 3010.

2. *Definition of Precious Metal.* As used in the final regulation, precious metal reclamation includes reclamation operations recovering gold, silver, platinum, palladium, the platinum group metals (iridium, osmium, rhodium, ruthenium) or any combination of these. This is essentially the definition used in the proposal (the proposal omitted the metal osmium), and is the same definition used by the Agency in developing effluent limitation guidelines for the precious metal reclamation subcategory (40 CFR Part 421). The only comments disagreeing with this definition suggested (without explanation) that beryllium, germanium, gallium, and indium also be included. These metals are not ordinarily classified as precious, and commodity prices for these metals ordinarily are much lower than for the precious metals (in some cases, several hundred times less). The Agency also has little information on the handling practices for wastes containing these materials or whether these wastes would be hazardous. We therefore are not expanding the list of precious metals at this time.

3. *Distinguishing Sham Operations.* We also note that sham recovery operations merely claiming to be engaged in precious metal reclamation are *not* exempt under this provision. Sham operations not only include those where no precious metals are present, but those where precious metals are present only in trace amounts, or in amounts too low to be economically recoverable. The regulations consequently state that the reclamation

[39] A memorandum to the record from the Agency's Effluent Guidelines Division documents these statements.

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facility must be recovering economically significant amounts of precious metals from each waste for the waste to be conditionally exempt. For example, wastes from which small amounts of silver are recovered by a facility not ordinarily engaged in precious metal reclamation would not be exempt from regulation. Other factors indicating sham precious metal recycling are lack of strict accounting by either the generator or reclaimer of wastes to be reclaimed, storage (such as in open piles or impoundments) by either the generator or reclaimer not designed to protect wastes from release, payment to a reclaimer to accept wastes, or absence of efficient recovery equipment at the reclaimer's site. Generators or reclaimers engaged in this type of sham recycling without complying with RCRA regulations are of course managing hazardous wastes without complying with applicable regulatory standards.

4. *Status of Wastes From Precious Metal Reclamation When Hazardous Wastes Are Reclaimed.* Several commenters questioned the statement in the preamble that wastes from precious metal reclamation are presumptively hazardous if the material being reclaimed is a hazardous waste. This statement does no more than recite existing regulations (see § 261.3(c)(2)), and is justified factually here because the hazardous portions of the wastes are not recovered but remain in the process residue. (Effluent sampling data shows high toxic metal and cyanide concentrations in wastewater from precious metal reclamation operations reclaiming electroplating sludges and related wastes.) Commenters presented no data disputing these conclusions. In addition, individual precious metal waste generators and reclaimers have the option of delisting the wastes from the reclamation process if they believe they are not hazardous.

F. Section 261.6(a)(2)(v) and Part 266 Subpart G: Spent Lead-Acid Batteries Being Reclaimed

EPA proposed that spent lead-acid batteries be regulated when stored by the persons reclaiming them, either a battery cracker or a secondary lead smelter. These spent batteries would not be regulated, however, when handled by persons other than reclaimers, such as retailers, wholesalers or local service stations, or during transportation. Spent batteries stored at intermediate collection centers also would not be regulated. See 48 FR 14498–499.

Many commenters supported these regulations, including significant segments of the lead recycling industry. Other commenters disagreed that the risks presented by storage of spent lead-acid batteries warrant regulation. Still other commenters, including most of the commenters from the lead recycling industry, stated that battery storage by independent collection centers presented greater risks than storage by reclaimers. They stated that collection centers tended to store batteries for a longer time than reclaimers, and sometimes in larger amounts, and provided examples of improper handling by collection centers. There was consensus, however, that initial collectors and transporters did not require regulation.

We have decided to adopt the proposed regulation without significant change. Acid spillage from uncracked batteries can cause significant harm, and storers have no (or minimal) incentive to store spent batteries without acid spillage. We are impressed that even some lead recycling industry members accept the need for regulation of spent battery storage. We also note that many states regulate various aspects of spent battery recycling (including, in many cases, storage by battery reclaimers),[40] confirming a need for regulation. Damage cases cited in the April 4 preamble provide further corroboration.

The Agency is continuing to investigate whether regulation of intermediate collection sites is appropriate. These battery collection sites are managed, for the most part, by the same persons who operate scrap metal collection sites, and scrap metal and spent batteries are usually accumulated by these persons at the same sites. We therefore will address this issue as part of our study of hazardous scrap metal storage.

G. Recyclable Materials Exempt from Regulation

1. *Section 261.6(a)(3)(i): Recloimed Industrial Ethyl Alcohol.* Industrial ethyl alcohol can become contaminated during use, and may then be returned to a distillery for redistillation. Spent industrial alchol exhibits the characteristic of ignitability.

EPA has decided to exempt industrial ethyl alchol that is reclaimed from any RCRA regulation because the entire reclamation operation already is regulated by the Bureau of Alcohol, Tobacco and Firearms from point of spent ethyl alcohol generation to point of redistillation. These regulations require operating permits for individual industrial ethyl alcohol distilleries and users. These permits must address (among other things) ethyl alcohol storage (including storage of spent ethyl alcohol), plant security, and recordkeeping. See 27 CFR 19.156, 19.159, 19.166, and 19.271–19.281 (requirements for distillers) and §§ 211.41–211.50, and 211.91–211.96 (requirements for users). Tracking from the generator to the distiller likewise is controlled. *Id.* §§ 211.217.–211.219. There is also incentive to avoid loss of alcohol because there is tax liability of $10.50 per gallon of spent ethyl alcohol, and this tax is imposed, and ordinarily not remitted, in the event of loss. *Id.*, §§ 19.561–19.563. In light of this comprehensive cradle-to-grave existing regulatory system, further RCRA regulation would be redundant.

2. *Section 261.6(a)(3)(ii): Used Batteries Returned to a Battery Manufacturer for Regeneration.* This exemption is identical to the one proposed. See 48 FR 14496/2. (In response to comment, we also note that returning an unused battery for regeneration would not involve waste management, because the battery would be a commercial product being recycled. See § 261.33.) In essence, the practice involves returning a commercial product for regeneration, an activity not ordinarily regulated. All comments on this issue supported the proposal. (We note, in response to a comment, that used battery cells returned to a manufacturer for regeneration also are covered by this exemption.)

3. *§ 261.6(a)(3)(iii): Used Oil Exhibiting a Characteristic of Hazardous Waste.* This temporary exemption was discussed in Section II.E. above.

4. *§ 2616.(a)(3)(iv): Scrap Metal.* The Agency has determined not to regulate (for the time being) hazardous scrap metal that is being reclaimed. This is an interim measure. We are continuing to study which types of scrap metal may be hazardous.[41] We also are continuing to study the modes of scrap management by collection centers and by end reclaimers, and are also studying marketing arrangements in the industry. Other on-going work deals with the impacts (both environmental and economic) of possible regulation, the feasibility of enforcement if regulation should be necessary, and whether

[40] The States of Pennsylvania, South Carolina, Texas, Missouri, New York, California, Oklahoma, Oregon and Indiana regulate various aspects of spent battery recycling. See Comments of General Battery Corporation to Proposed Effluent Limitations and Standards for Nonferrous Metals Manufacturing, August 15, 1983.

[41] Preliminary results of Agency studies indicate that most scrap metal is not hazardous, although some types exhibit EP toxicity.

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tailored regulations can or should be developed for hazardous scrap metal.

The Agency expects to determine from this investigation which types of scrap metal are hazardous, whether the regulation of transportation and storage is necessary, and what an appropriate regulatory regime might be for those types of scrap metal that are hazardous. Since we do not yet have answers to these questions, we are deferring regulation.

We are not deferring regulation of non-scrap metal-bearing hazardous wastes that are reclaimed. The Agency already has made a determination that these wastes are hazardous, that regulation is necessary to protect human health and the environment, and what appropriate regulatory standards should be. Thus, such metal-bearing wastes as spent batteries, spent mercury, and spent acids and caustics are subject to § 261.6 (or Part 266) regulatory standards under today's rule.

H. Section 261.6(b) and (c): Requirements for Generators, Transporters, and Storage Facilities

1. *The Generally Applicable Standards.* These provisions state that persons generating, transporting, or storing recyclable materials, who are not explicitly addressed in § 261.6(a), are subject to all of the applicable requirements of Parts 262, 263, 264 and 265 of the regulations, as well as to applicable permit requirements. Thus, hazardous wastes that are to be reclaimed are covered by these provisions. Hazardous wastes that are accumulated speculatively also are covered.[42] As noted, these provisions will apply to most of the activities that would have been conditionally exempt under the proposal, as well as to situations (such as reclamation by an independent reclaimer selling reclaimed products to the general public) that we already proposed to regulate fully.

The following chart compares the extent of coverage under the May 19, 1980 regulations (40 CFR 261.6(b)) with today's final regulation for those recyclable materials not regulated under the special standards in Part 266—namely recyclable materials being reclaimed or accumulated speculatively. For wastes being reclaimed, the principal extension of regulation is to spent materials exhibiting a characteristic of hazardous waste. Sludges that are not listed as hazardous wastes, however, are no longer regulated when reclaimed. In addition, unlisted by-products and spent materials are now subject to regulation when accumulated speculatively (*i.e.* without sufficient amounts being shown to be recycled). Commercial chemical products listed in 40 CFR § 261.33 are not subject to regulation when recycled in any of these ways.

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[42] As we noted in the April 4 preamble, persons who overaccumulate wastes are subject to regulation as storage facilities when a year elapses without sufficient turnover of material. (However, as noted in the rule, and in Section II.F.3.b. of Part 2 of the preamble, materials that are stored in a unit covered by § 261.4(c) are not covered by the overaccumulation provisions.) These persons have a six-month period to come into compliance with applicable storage requirements or to ship all accumulated hazardous wastes to a Subtitle C facility. 48 FR 14499/2-3. Persons accumulating hazardous wastes speculatively are subject to immediate regulation as generators (if they generate the wastes) or as storage facilities (if they store anoter person's wastes, if they store their own wastes in piles or in impoundments, or if they store their own wastes in tanks and containers for longer than 90 days or for less than 90 days without complying with the provisions of § 262.34).

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TABLE 12: Comparison of Regulation Under May 19, 1980 Regulations and Under Amended §261.6 for Recyclable Materials Not Subject to Regulation Under Part 266 Standards

	Reclamation		Acumulation Without Sufficicent Amounts Being Recycled		Accumulation Without A Known Recycling Market	
	May 19	Final Rule	May 19	Final Rule	May 19	Final Rule
Spent Materials Listed in §§261.31 or 261.32	yes	yes	yes	yes	yes	yes
Spent Materials Exhibiting a Characteristic of Hazardous Waste	no	yes	no	yes	yes	yes
Sludges Listed in §§261.31 or 261.32	yes	yes	yes	yes	yes	yes
Sludges Exhibiting a Characteristic of Hazardous Waste	yes	no	yes	yes	yes	yes
By-products Listed in §§261.31 or 261.32	yes	yes	yes	yes	yes	yes
By-products Exhibiting a Characteristic of Hazardous Waste	no	no	no	yes	yes	yes
Scrap metal	no	no	no	no	yes	yes
Commercial Chemical Products Listed in §261.33	no	no	no	no	no	no

Yes - Subject to regulation under Parts 262-265

No - Not subject to regulation

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2. *Conforming Amendments to §§ 261.5, 264.1, and 265.1.* EPA proposed that hazardous wastes that are exempt from regulation when they are to be recycled are not included in the small quantity generator calculation. 48 FR at 14493 n. 38. This proposal was a conforming amendment to existing § 265.1(c), which already embodies this principle. We are promulgating this amendment in final form today. Since there are fewer conditional exemptions than at proposal, however, fewer recycled hazardous wastes will be excluded from the small quantity generator calculation. As at proposal, spent lead-acid batteries that are to be reclaimed are excluded from the small quantity generator calculation because they are not subject to regulation in the hands of the generator.[43]

The amendments to §§ 264.1 and 265.1 also are conforming. They indicate that these sections do not apply to activities that are conditionally exempt or excluded from regulation, or that are regulated under a Part 266 standard. (The Part 266 standard may, of course, make reference to a Part 264 or 265 standard.)

3. *Revision of § 260.10: Definition of "Designated Facility".* In response to comment, the Agency also is adopting a rule relating to manifesting of hazardous wastes to recycling facilities that introduce the wastes directly into the recycling process without prior storage. These recycling facilities are not required to obtain storage permits under the May 19, 1980 rules (§ 261.6(b); see also 48 FR at 14498/2 to the same effect), nor under the rules adopted today. This is because the Agency does not regulate the actual process of recycling, but only generation, transportation, and storage occurring before actual recycling. 45 FR 33093/1 (May 19, 1980). However, generators sending hazardous wastes to these facilities, and transporters carrying these wastes, are required to deliver the wastes to "designated facilities" and to include the name, address, and EPA identification number of these facilities on the accompanying manifest. A "designated facility" is defined as a facility with a Part 264 permit or operating pursuant to interim status (§ 260.10).

These rules consequently are in conflict because recycling facilities that do not store are not "designated facilities" (they do not have permits or interim status), and, under a literal reading of the present rules, are unable to receive wastes for recycling. This obviously was not the Agency's intention. Accordingly, the Agency is amending the definition of designated facility so that recycling facilities that do not store before recycling can receive hazardous wastes.

The amendment states that facilities regulated under § 261.6(c)(2) of the regulations are also to be considered designated facilities. Section 261.6(c)(2), in turn, states that recycling facilities that do not store are required to notify the Agency under Section 3010 (obtaining an identification number in the process), and to comply with manifest requirements under §§ 265.71, 265.72, and 265.76.

The Agency stresses that this amendment is an interim one and is designed to solve the immediate conflict between different regulations. We are not making a final decision that these facilities require only minimal regulation. In fact, we are considering whether these facilities should be subject to additional requirements to be implemented through individual permits.

We also stress that very few facilities recycle wastes without first storing them. In this regard, we note that tanks or containers in which some incidental settling occurs but which are used primarily for storage are subject to regulation under the storage facility permit standards.[44] This is in keeping with the policy of the current regulation that only the actual process of recycling is to be left unregulated. Examples of recycling processes that occur without prior storage are where spent batteries are introduced directly to a battery shredding machine without prior storage, or when spent solvents are placed in a distillation unit without prior storage.

I. Variances

EPA is adopting several variance provisions in the final rule. One of these provisions results in increased regulation (and so is a variance from otherwise applicable standards or exemptions), while the others result in a determination that materials recycled in certain ways are not solid wastes. These provisions are described below.

1. *Case-by-Case Regulation.* a. *The Substantive Standard.* EPA proposed that various recycling activities conditionally exempt from regulation be subject to case-by-case regulation if they accumulated, stored, or burned hazardous wastes in a manner insufficient to protect human health and the environment, to be determined based on criteria enumerated in the rule. Proposed § 261.6(g), 48 FR 14510. We believed this provision necessary in order to regulate individual unsafe operations, while maintaining an otherwise appropriate exemption.

Many comments supported this provision, but other commenters objected. They complained that the Agency was giving with one hand but taking back with the other, that the provision vested too much discretion in the Regional (or authorized State) Administrator because decision-making standards were too broad, and that this type of provision deprived facilities of needed certainty. (Many of these same commenters argued that the Agency should vest Regional Administrators with authority to grant individual variances, based upon standards far broader than in the case-by-case regulatory provision.)

The Agency has determined to adopt most of the provision as proposed, except that we are not promulgating a case-by-case provision for boilers and industrial furnaces burning hazardous waste for energy recovery. We note that the provision has less significance than at proposal, because it applies only to wastes utilized for precious metal reclamation. Applicability at proposal was to other types of conditionally exempt operations, which now will be fully regulated. We believe this type of provision remains needed in spite of its reduced applicability, to guard against mishandling of precious metal-containing waste. Indeed, we know that damage incidents have occurred at these facilities. The case-by-case regulatory provision also allows the Agency to control individual facilities without fully regulating the entire class.

The Agency also does not accept the argument that the regulatory standard is too broad. Regional officials must find that the wastes are not being contained, or that incompatible wastes are being stored together. Relevant factors are the type and quantity of waste accumulated, the mode and length of accumulation, and the type of hazard posed by the site. The Agency not only believes that these standards are sufficiently clear, but notes they are modelled on long-standing provisions in the Agency's National Pollutant Discharge Elimination System permit regulations providing authority for regional officials to require case-by-case regulation of

[43] Precious metal wastes are to be included when making the small quantity generator calculation because these wastes are subject to regulation in the hands of the generator.

[44] For purposes of this point, piles and impoundments are rarely considered to be an integral part of the hazardous waste recycling process because wastes are not secure from loss, and because recovery from them (if any) is inefficient. Piles and impoundments at non-exempt hazardous waste recycling facilities consequently are subject to regulation.

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facilities holding general permits. (See 48 FR 14494 n.40.)

We have a number of reasons for not promulgating the case-by-case provision for boilers and industrial furnaces. Most important, the Agency already is well on the way to establishing standards for these facilities. We will propose to ban burning of hazardous wastes in non-industrial boilers, and shortly will propose permitting standards for remaining boilers and industrial furnaces. These standards should either be effective, or be close to being effective, by the time an enforcement action could be brought, decided, and a permit issued under the case-by-case provision. Furthermore, the Statement of Enforcement Policy (see Section II.D.2.a. of Part 2 of the preamble) remains in force and serves as a partial safeguard against abusive situations until the permit standards become effective. In light of these considerations, it does not seem worth the resources necessary to implement the case-by-case provision for boilers and industrial furnaces.

One commenter argued that the Regional Administrator must show an "imminent threat to human health and the environment" before case-by-case regulation could be invoked. We disagree. This standard, similar to that in Section 7003 of RCRA, may be more stringent than required for issuing a RCRA permit (see Section 3004). Since the case-by-case provision amounts to a determination that an individual facility requires a RCRA permit (or must comply with Part 262 accumulation standards), the suggested standard is inappropriate.

As a matter of organization, we are codifying the substantive standards for case-by-case regulation in § 260.40. These standards are thus grouped with other provisions that are individual in application and effect, such as delistings and variances. Procedures for case-by-case proceedings are found in new § 260.41.

b. *Procedures for Case-by-Case Determinations.* We are adopting the procedures that we proposed. Upon deciding that precious metal-containing waste at a particular location should be regulated, the Regional Admininstrator (or authorized state) will issue a notice to the person storing the waste stating why the waste is considered to be improperly contained (for instance, because contaminated runoff from a pile of the waste is seeping into soil, surface water or ground water). If the person is accumulating the material on-site for less than 90 days and the material is being held in tanks or containers, the notice will require compliance with the provisions of Subparts A, C, D, and E of Part 262. (These generators already are required to comply with subpart B (the manifest requirements) of Part 262. See § 266.70(b)(2).) The notice becomes final within 30 days, unless the person accumulating requests a hearing, in which case a public (non-evidentiary legislative) hearing will be held. EPA will provide notice of the hearing to the public, and allow public participation at the hearing. The Regional Administrator will issue a final order after the hearing stating whether or not compliance with Part 262, Subpart A, C, D, and E is required. The order becomes effective 30 days after service of notice of the decision unless a later date is specified or unless review the Administrator is requested. The order may be appealed to the Administrator by any person who participated in the public hearing. The Administrator may then choose to grant or deny the appeal. Final Agency action occurs when a final order is issued and Agency review procedures are exhausted. (Cf. § 124.19 where analogous procedures are used for appeals from RCRA permits.) Judicial review, in our view, should be in a Court of Appeals since the Agency's decision and implementing procedures are analogous to those used in issuing a permit. (See RCRA Section 7006(b), indicating that review of RCRA permit issuance decisions are in a Court of Appeals.)

If the person is storing the material for longer than 90 days, storing in a pile or impoundment, or storing off-site, the notice will require him to apply for a storage permit within 60 days to six months of being notified, the precise date for applying to be specified by the Region or authorized state.[45] Permit applicants normally have six months to submit a Part B permit application. (See 40 CFR 270.10(e)(4).) We are providing the authority to request a shorter time period because facilities subject to this provision ordinarily will be causing actual harm or have the potential to cause immediate harm. The person can challenge the determination that he is storing a hazardous waste through the permitting process, either in the public hearing, or in comments filed on the draft permit, or on the notice of intent to deny the permit. The fact sheet accompanying the permit would specify the reasons for the Agency's determination. (As noted in the proposal, these procedures are identical to those in 40 CFR 124.52 (case-by-case permitting of facilities otherwise subject to general permit standards under the Clean Water Act).)

Several commenters urged that a separate hearing be afforded before requiring the facility to submit a storage permit application. We think the procedures we have chosen strike a proper balance between public and private interests. The Agency's interest in having a single proceeding is strong. EPA will invoke this provision when a facility is storing wastes in a manner that is insufficient to protect human health and the environment. There may be actual (and certainly threatened) release of hazardous wastes. It will be important, in such situations, that the facility manage the wastes in compliance with Part 264 standards as soon as possible. Substantial delay could result in increased harm or increased risk of harm. A separate initial proceeding (potentially followed by judicial review) to determine whether the facility should be required to obtain a permit could well result in lengthy delay, substantially prejudicing the public interest.

Furthermore, the facility will be engaging in conduct—storage of hazardous waste—that by statute normally requires a permit. They probably will be engaging in conduct which is an abuse of the regulatory exemption for precious metal-containing wastes. The government's interest again is strong that the abuse cease, and that the normally-mandated statutory scheme—issuance of a permit—be implemented without delay.

Finally, the government has an administrative interest in avoiding successive proceedings. As we noted in adopting § 124.52, "(t)o allow (a separate hearing before requiring a permit application) would produce long delays and a potential for two consecutive hearings on closely related issues." 48 FR 32879 (June 7, 1979).

A facility's interest in having a separate hearing is its ability to challenge the determination that a storage permit is required before being required to submit a permit application. We think the facility's interest in avoiding this cost[46] is outweighed by the public interests outlined above. Moreover, EPA would allow the applicant to comment on the determination throughout the permitting process. We note also that EPA's procedures allow the facility to remain

[45] EPA proposed that persons submit permit applications within 60 days of being notified. We are giving the Region or state the option of specifying up to six months to submit applications to allow room for procedural flexibility.

[46] The estimated cost of completing a tank and container permit application is approximately $10,000 (assuming 75 drum capacity or 5,000 gallon capacity). Pope-Reid Associates Inc., *Unit Cost Analysis of Part 264 and Part B Tank and Containers Storage Analysis* (April, 1983).

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operating while it applies for a permit. If the procedure in the rule were unavailable, the Agency might seek more draconian relief against a facility under Section 7003 of RCRA, which could entail cessation of facility waste handling operations.

2. *Variances from Classification of a Solid Waste.* EPA did not propose any variance provisions, but did solicit comments as to whether general or specific types of variances were justified. See 48 FR 14499–500. Industry commenters generally supported the idea of variances, but were not specific about substantive standards for granting or denying them.

EPA continues to think that variances for broad classes of recycled wastes are unwarranted, because the variances would too easily become surrogate permits. Thus, we reject the notion of granting variances because recycled wastes are being stored safely.

We do believe, however, that certain discrete variances are warranted, and we are adopting these in the rules promulgated today. There are three such provisions covering situations where there can be a question of whether the material is a waste. A variance, if granted, would state that the material is not a waste. We describe below what these activities are, and the substantive and procedural standards for granting or denying a variance.

a. *Materials Accumulated Without Sufficient Amounts of Materials Being Recycled.* As explained earlier (see Section II.F.3.f of Part II of the preamble), this provision was proposed on April 4, although it was not formally called a 'variance'. It states that persons who fail to turn over 75 percent of their accumulated wastes in a year can petition the Regional Administrator (or the state in an authorized state) to declare that the material is not a waste, in spite of the failure to recycle 75 percent. The provision now appears in § 260.30 (instead of § 261.2 as proposed. Standards for granting a variance are contained in § 260.31. They are virtually the same as those we proposed, except that variances could continue to be granted beyond a two-year accumulation period, and there are no conditions precedent on the amount to be recycled before applying for a variance.

Procedures for granting or denying this variance are contained in § 260.33. These procedures (identical to those for the other variances) are discussed in Section 3 below.

b. *Materials That Are Reclaimed And Then Reused Within The Original Primary Process in Which They Were Generated.* EPA proposed that materials that are reclaimed and then reused within the original production process in which they were generated are not solid wastes. As explained in Section II.H.2. of Part II of the preamble, we have decided that the proposal was too broad and we have narrowed the provision to apply only to materials returned to the original primary production process without first being reclaimed.

We nevertheless believe that there may be some situations where a material can be reclaimd before being reused within the original primary production process and not be a solid waste. Although the principle is not invariably true, there can be occasions when this type of recycling is an adjunct to the original primary process, constituting a closed loop. See 48 FR 14488. We thus are allowing for these situations by means of a variance.

The standards for granting a variance are contained in § 260.31(b). The Regional Administrator (or authorized state) is to decide whether the reclamation operation is an essential part of the primary production process. The following criteria bear on that decision:

- *How economically viable the production process would be if it were to use virgin materials alone.* The more significant the cost saving, the more the situation is like one single production process. For example, the Kraft paper process cannot be operated economically without some recovery and recycling of black liquor. (See section I. in Part 2 above.)
- *The prevalence of the recycling practice on an industry-wide basis.* The more wide-spread the practice, the more likely it is to be a production process.
- *The extent to which handling of the material before it is reclaimed is designed to minimize loss of material.* Materials utilized in production processes should be stored in a way that minimizes loss.[47] Thus, the more precautions that are taken to store a material before reclaiming it, the more the situation is like a production process. Situations where materials are stored before reclamation in open unlined piles, unlined impoundments, or leaking tanks and drums, consequently are less likely to be granted this variance.
- *The time periods between generation of the material and its reclamation, and between reclamation and reuse in the original process.* The longer the elapsed time between each of these steps, the less likely the operation is to be viewed as a single process. (Operations that are cyclical, or require long accumulation time to be viable, could still be eligible, however.)
- *The location of the reclamation operation in relation to the production process.* We are expanding this criterion beyond the proposal, where we limited the provision to reclamation operations conducted at the same plant site. We are not including this as a condition precedent to granting of this variance, in response to comments that closed-loop recycling situations can extend beyond a plant boundary. However, the more physically close the reclamation operation is to the production process, the more likely the situation is to be viewed as closed-loop recycling.
- *Whether the reclaimed material is used for its original purpose when it is returned to the original primary production process, and whether it is returned in substantially its original form.* Operations are most like a closed-loop operation when the reclaimed material is returned to the original production process in substantially its original form for its original purpose.
- *Other factors, as relevent.*

The Regional Administrator can rely on any or all of these criteria, and can weigh them as he deems appropriate. We also note that there are a number of conditions an applicant must meet before he is eligible for this variance. First, the material must be returned as feedstock to the "original primary production process". "Original primary production process" has the same meaning as in § 261.2(e)(iii), and is discussed in Section II.H.2. of Part II of the preamble. (In response to comment, we note that if a plant were to generate the same secondary material from different processes, commingle the secondary material and reclaim it, and return the reclaimed materials for reuse in the original processes, the operation could be eligible for this variance even though the reclaimed materials have become commingled. The commingling does not so alter the nature of the transaction as to vitiate the underlying policy of this closed-loop variance.) The material that is returned also must be "reused" when returned to the original process. We mean by this that the material must contribute directly to the production process as an ingredient, reactant, or an alternative feedstock. Secondary materials returned to a smelting furnace are an example. Solvents reclaimed and utilized for degreasing are not, because the

[47] See, for example, the many comments to this effect from industry commenters in the record to this rulemaking. See also comments from various industry commenters supporting the Agency's rule—found in § 261.3(a)(2)(iv)(D)—to exempt *de minimis* losses of § 261.33 commercial chemicals to process wastewater from the mixture rule presumption.

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reclaimed solvents are not contributing to the production process.[48] Finally, the reclamation and reuse must both be conducted by the same "person", although not necessarily at a single plant site. ("Person" is defined in § 260.10 and in RCRA as including among others, single corporations and other legal entities.)

c. *Materials That Have Been Reclaimed But Must Be Reclaimed Further Before Recovery Is Completed.* The final variance from being a solid waste is for materials that have been reclaimed but must be reclaimed further before recovery is completed. We indicated in the proposal that reclamation processes are not completed until the end-product of the process is recovered, giving as an example, recovery of lead from spent batteries, which can require two operations—cracking and smelting—to be complete. 48 FR 14499 n.57. The material being reclaimed thus remains a waste until reclamation is finished.

We think this principle is generally sound, but that there may be some exceptions where the initial reclamation step is so substantial that the resulting material is more commodity-like than waste-like even though no end-product has been recovered. Possible examples are processes producing fluxes similar in composition to virgin ore concentrates. We consequently are allowing the Regional Administrator to grant a variance for materials that have been reclaimed, not completely recovered, but after initial reclamation are commodity-like in spite of having to be reclaimed further.

The criteria for making this decision are:

- *The degree of processing that the material has undergone and the degree of further processing required.* The more substantial the initial processing, the more likely the resulting material is to be commodity-like. Conversely, the more substantial the processing that is yet to occur, the less likely the initially-reclaimed material is to be commodity-like. For example, a spent solvent sent to an initial reclaimer who settles out debris and then sends the solvent to be distilled would not be eligible for this variance.
- *The value of the material after it has been reclaimed.* Obviously, the more valuable a material is after initial processing, the more likely it is to be commodity-like.
- *The degree to which the initially-reclaimed material is like an analogous raw material.* If the initially-reclaimed material can substitute for a virgin material, for instance as feedstock to a primary process, it is more likely to be commodity-like.
- *The extent to which an end market for the reclaimed material is guaranteed.* If the applicant can show that there is an existing and guaranteed end market for the initially-reclaimed material (for instance, value, traditional usage or contractual arrangements), the material is more likely to be commodity-like.
- *The extent to which the reclaimed material is handled to minimize loss.* The more carefully a material is handled, the more it is commodity-like.
- *Other relevant factors.*

The Regional Administrator (or an authorized state) may weigh these factors as she sees fit, and may rely on any or all of them to reach a decision. In addition, the variance applies *only* to wastes after they have been initially reclaimed. Applicable regulatory requirements for the waste before initial reclamation are unaffected. The initial reclaimer will thus be a RCRA storage facility, and have to obtain a permit to store the wastes before reclaiming them. If a variance should be granted, however, the recovered material is not a waste and the subsequent reclaimer is not a RCRA facility.

3. *Variance to be Classified as a Boiler.* As discussed in I.B. of Part 2 of the preamble above, EPA also is adopting a variance provision to allow the Regional Administrator to classify certain enclosed flame combustion devices as boilers even though they do not otherwise meet the definition of boiler contained in § 260.10. See § 266.32. The Regional Administrator is to consider how nearly the unit meets the definition of boiler, considering:

- The extent to which the unit has provisions for recovering and exporting energy in the form of steam, heated fluids, or heated gases;
- The extent to which the combustion chamber and energy recovery equipment are of integral design;
- The efficiency of energy recovery, calculated in terms of the recovered energy compared with the thermal value of the fuel;
- The extent to which exported energy is utilized;
- The extent to which the device is in common and customary use as a "boiler" functioning primarily to produce steam, heated fluids, or heated gases; and
- Other factors, as appropriate.

4. *Procedures for Variances.* We are promulgating a new § 260.33 which contains procedures for granting or denying the four types of variances just described. In essence, an applicant must submit a written application to the appropriate EPA Regional Office (or authorized state). If a recycling transaction is conducted in more than one Region or state (i.e. the generator is in one region and the recycler is in another), the application should be submitted to the region or state in which the recycling activity occurs. The application should address the standard and criteria applicable to the particular variance, and state generally why grant of a variance is justified. The Regional Administrator will consider the application and will issue a written draft notice tentatively granting or denying the variance, and giving reasons for this action. (In many cases, an inspection probably is necessary to rule on an application.) Notification of this tentative decision will be provided by newspaper advertisement and radio broadcast in the area where the recycling facility is located. The Regional Administrator will accept comment on the tentative decision for 30 days, and may also hold a public hearing upon request or at his discretion. Any hearings will be nonadjudicatory. The Regional Administrator will issue a final decision after receipt of comments and after the hearing (if any), and this decision may not be appealed to the Administrator.

5. *Should EPA Adopt a Variance for Batch Tolling Agreements.* EPA proposed that hazardous wastes reclaimed pursuant to batch tolling agreements would be conditionally exempt from regulation. A batch tolling agreement is a contract between generator and reclaimer whereby a generator retains ownership of the waste, sends the waste to a reclaimer, and receives back the reclaimed portion. The proposal further specified that: (1) The generator had to send the wastes to a reclaimer within 180-days of generation, (2) the wastes had to be reclaimed and returned within 90 days of receipt by the reclaimer, and (3) the reclaimer could not commingle wastes being reclaimed under a batch tolling agreement with wastes of another generator. In addition, the reclaimer had to be paid according to the amount of reclaimed material returned to the generator, and paid more as the amount of material returned increased (*i.e.* the reclaimer would not be paid a flat fee regardless of the amount of reclaimed material returned).

As discussed above, EPA is not finalizing most of the proposed conditional exemptions because the risk of damage from spills and leaks

[48] The second example on p. 14488/2 of the proposal contained an erroneous implication in this regard.

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indicates that regulation is necessary to protect human health and the environment. We are soliciting further comment, however, as to whether reclaimers who reclaim pursuant to batch tolling agreements should be eligible for a conditional variance. (The conditions would be that records be kept to document existence of the type of batch tolling contracts described above.)

The aspect of the batch tolling contract that might create sufficient incentive to avoid loss is that the reclaimer be paid more as the amount of material returned to the generator increases. EPA can see that under certain circumstances a reclaimer would no longer be able to make a profit (or even recover fully allocated costs) if too much waste is lost before reclamation. However, the point at which this occurs will vary for each reclaimer, and potentially for each transaction. EPA is seeking comment as to the type of showing necessary to demonstrate that the batch tolling contract would become unprofitable unless spills and leaks are avoided. Commenters should address the type of economic data that would be presented, and also should address how this information could be presented in a form amenable to administrative resolution. The administrative proceeding the Agency has in mind is an individual variance proceeding where the reclaimer has the burden of showing that the contract creates sufficient incentives against loss to obviate the need for a storage permit.

The Agency also would like commenters to address whether any reclaimers would apply for this type of variance. The Agency's information is that few reclaimers operate exclusively in the batch tolling mode (see 48 FR 14495, and n.47), so these reclaimers are likely to require a permit in any event. It is not worth the resources to create an elaborate administrative mechanism if it lacks practical significance.

We note finally that any variance for batch tolling would apply only to the reclaimer, not to the waste generator. The tolling contract's provision that payment increase as the amount of material returned increases does not create any additional incentives against loss for the generator. Commenters therefore should also address whether a variance mechanism applying only to reclaimers would have practical significance.

Part IV. Economic, Environmental, and Regulatory Impacts

I. State Authority

A. Applicability in Authorized States

Under Section 3006 of RCRA, EPA may authorize qualified States to administer and enforce their State hazardous waste management programs in lieu of EPA operating the Federal program in those States. (See 40 CFR Part 271 for the standards and requirements for authorization.) Authorization, either interim or final, may be granted to State programs that regulate the identification, generation, and transportation of hazardous wastes and the operation of facilities that manage hazardous waste.

Today's announcement promulgates standards for certain hazardous wastes under the Federal hazardous waste management program. With some exceptions not relevant here, upon authorization of the State program, EPA suspends operation within the State of those parts of the Federal program for which the State is authorized. Therefore, today's promulgation would be applicable only in those States which have not been granted authorization.

It should be noted that 40 CFR 271.9 requires States to control all hazardous wastes controlled under 40 CFR Part 261 in order for their program to be considered equivalent to the Federal program for purposes of Section 3006. EPA is indicating in this regulation that certain types of recycled hazardous secondary materials are not RCRA solid or hazardous wastes (or, in the case of materials subject to variance provisions, need not be wastes). States may choose to regulate these materials as wastes pursuant to State law; Section 3009 of RCRA allows states to impose stricter requirements than those in the Federal program. Such states are considered equivalent for purposes of State authorization. See § 271.1(i).

B. Effect on State Authorization

The rules promulgated under this rulemaking will not apply in authorized states until the state either (1) receives final authorization on the basis of providing controls for hazardous wastes that are equivalent to or more stringent than EPA's or (2) after final authorization, revises its program to include controls for hazardous wastes that are equivalent to, or more stringent than EPA's. The procedures and schedule for state adoption of these regulations is described in 40 CFR 271.21. See 49 FR 21678 (May 22, 1984).

Applying § 271.21(e)(2), states that have final authorization must revise their programs within a year of promulgation of EPA's regulations if only regulatory changes are necessary, and within two years of promulgation if statutory changes are necessary. These deadlines can be extended in exceptional cases. See 40 CFR 271.21(e)(3).

States that submit official applications for final authorization less than 12 months after promulgation of these regulations may be approved without including standards equivalent to those promulgated. However, once authorized, a state must revise its program to include standards equivalent to or more stringent than EPA's within the time period discussed above.

Interim authorization for these requirements under the Hazardous and Solid Waste amendments of 1984 is not allowed. Today's rule is not a requirement deriving from the 1984 amendments; thus, under section 3006(g), interim authorization is not available as a substitute for adopting equivalent regulations.

II. Regulatory Impact

Under Executive Order 12291, EPA must judge whether a regulation is "major" and thus requires a Regulatory Impact Analysis. Based on our analysis, we have determined that this rule is not a major rule because it will not: (1) Have an affect on the economy of $100 million or more, (2) significantly increase costs or prices to industry, or (3) diminish the ability of U.S.-based enterprises to compete in domestic or export markets.

This assessment is based on a study prepared for EPA which evaluated the cost impact on the regulated community for the change to the definition of solid waste and accompanying management standards. This study [49] describes the changes in regulatory requirements, the populations affected by the change, and then summarizes the resulting changes in costs.

The report first identifies those secondary materials and recycling activities which would be subject to different regulatory requirements, comparing the existing regulations with those promulgated today. This analysis indicated the following:

- *Use constituting disposal.*—Non-listed spent materials and non-listed by-products would be subject to increased requirements for generators, transporters, and storers; all secondary

[49] See report entitled, "Cost and Impact Analysis for Final Rule: Change in the Definition of Solid Waste and Accompanying Management Standards for Wastes Which Are Recycled," Industrial Economics, Inc., December, 1984.

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materials (including § 261.33 commercial chemical products) would also be subject to increased requirements for the actual recycling activity.[50]

• *Use/reuse* [51].—All listed wastes and non-listed sludges would be subject to decreased requirements for generators, transporters, and storers.

• *Reclamation.*—Non-listed spent materials would be subject to increased requirements for generators, transporters, and storers; non-listed sludges would be subject to decreased requirements for generators, transporters, and storers; all listed wastes and non-listed sludges that are sent for precious metal reclamation would also be subject to decreased requirements for generators, transporters, and storers.

The report then identified those industrial categories which are involved in recycling that will be affected by this rulemaking. The primary source for this information was the National Survey of Hazardous Waste Generators and Treatment, Storage, and Disposal Facilities. This survey included questions on the various recycling activities. Results were reviewed to determine where affected activities were occuring. In some cases, the actual survey responses were reviewed to determine the accuracy of these results. Two other sources were also used to collect this information. One was the JRB report on affected populations that accompanied the proposal to the definition of solid waste [52] while the other source was provided by an industry trade group who reported on the recycling activities of their members.

Based on this information, we determined that:

• Approximately 128 establishments would have their requirements under the hazardous waste management regulations reduced;

• Approximately 87 establishments that use or reuse secondary materials or reclaim certain secondary materials otherwise considered hazardous wastes would be completely excluded from regulation;

• Approximately 2,171 establishments would have their requirements under the hazardous waste management regulations increased;

• Approximately 380 establishments that recycle hazardous wastes would be newly subject to regulation.

These findings show that a significant number of persons will have increased regulatory requirements under the final rule. However, most of these persons already are subject to regulation under the hazardous waste management regulations; in addition, most of these persons will be regulated as generators rather than as storers of hazardous waste. Therefore, the increased impact is relatively modest. The regulatory impact on persons using or reusing listed hazardous wastes and sludges or who reclaim certain secondary materials—namely, non-listed sludges and listed hazardous wastes and hazardous sludges that are sent for precious metal reclamation—would be reduced. These presently regulated activities would not be regulated at all or regulated minimally under the final rule.

The report then analyzes what these changes will actually cost the regulated community. The study applies the appropriate unit cost populations to arrive at a net cost. (These costs were adjusted to reflect only the volume-dependent variable costs and not the incremental fixed costs already incurred by the affected establishments.)

The results of the study demonstrate that the final rule will decrease compliance costs by an estimated $1.8 million (costs shown are annualized after-tax costs).[53] This figure represents the sum of increases and decreases in annualized costs for all affected establishments, including:

• An estimated decrease in costs of $8.5 million for establishments with reduced regulatory requirements or for establishments that are released from the hazardous waste management regulations entirely; and

• An estimated increase in costs of $6.7 million for newly regulated establishments or for those facing increased regulatory requirements.

Our analysis further suggests that for industries facing increased regulatory requirements under the final rule, there would be no significant cost increases or other adverse affects on competition, employment, or investment.

Finally, it should be noted that many of the assumptions made in the report were conservative. Thus, we believe that our estimates understate the decreased regulatory impact for the final rule. Moreover, a number of provisions that would have reduced requirements could not be completely quanitified (*i.e.*, reclamation of non-listed sludges), even though we know the costs will be reduced. Therefore, because this final rule is not a major regulation, no Regulatory Impact Analysis is being conducted.

This final rule was submitted to the Office of Management and Budget (OMB) for review, as required by Executive Order 12291.

III. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., whenever an agency is required to publish a general notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the rules impact on small (i.e., small businesses, small organizations, and small governmental jurisdications). This analysis is unnecessary, however, if the Agency's Administrator certifies that the rule will not have a significant economic impact on a substantial number of small entities.

EPA and its contractor performed an analysis to determine whether the final rule to the definition of solid waste and the accompanying management standards will impose significant costs on small entities. The resulting report (see footnote 50) indicates that in none of the industry categories would this rule have a significant economic impact on small entities (as this is defined under the criteria that this final rule will not have a significant economic impact on a substantial number of small entities and therefore, does not require a regulatory flexibility analysis.

IV. Paperwork Reduction Act

There are no information collection requirements directly associated with this rule. However, this rule indirectly affects other information collection requirements that have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* These affected requirements have been assigned the following OMB control numbers 2050-0028, 2000-0061, 2000-0404, 2050-0012, 2050-0008, 2050-0011, 2050-0013, 2050-0009, 2000-0445, and 2050-0024. The appropriate changes to these

[50] The Agency is deffering regulation on use constituting disposal activities for commercial products that contain hazardous wastes. Therefore, requirements for the use constituting disposal activity applies only for wastes applied directly to the land (*i.e.*,use "as-is") or applied after mixing that allows its components to be separated by physical means.

[51] Secondary materials that are used to produce waste-derived products that are applied to the land or that are used to produce a fuel are not included under this provision.

[52] See report entitled "Impact on the Regulated Community of Possible Changes in the Definition of Solid Waste: Use, Reuse, Recycling, Reclamation." JRB Associates, February, 1983.

[53] The proposal to the definition of solid waste reported a reduced compliance cost of approximately $24 million. This estimate, however, was based on different population estimates as well as different unit cost estimates. Therefore, this cost is not directly comparable with the compliance cost derived for the rule promulgated today.

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requirements are now being submitted to OMB for approval.

Lists of Subjects

40 CFR Part 260

Administrative practice and procedure, Hazardous materials, Waste treatment and disposal.

40 CFR Part 261

Hazardous materials, Waste treatment and disposal, Recycling.

40 CFR Part 264

Hazardous materials, Packaging and containers, Reporting requirements, Security measures, Surety bonds, Waste treatment and disposal.

40 CFR Part 265

Hazardous materials, Packaging and containers, Reporting requirements, Security measures, Surety bonds, Waste treatment and disposal, Water supply.

40 CFR Part 266

Hazardous materials.

Dated: December 20, 1984.

Alvin L. Alm,

Acting Administrator.

APPENDIX A.—SUMMARY OF DAMAGE INCIDENTS RESULTING FROM RECYCLING OF HAZARDOUS WASTES

Types of recycling operation, wastes present, damages caused, or hazards posed	Source of information
1. Resolve, Inc. (located in N. Dartmouth, Mass) stored spent solvent distillation bottoms in unlined lagoons prior to reclamation. Substantial groundwater contamination has resulted.	Superfund Interim Priority Site.
2. The Gold Coast Oil Facility (located in Miami) is a solvent and paint thinner reclamation operation. It also obtained drums of other miscellaneous wastes containing phenols, metals and other organic compounds. Nearly 3,000 of these drums have accumulated without their contents being recycled. In addition, still bottoms from the solvent reclamation operation were disposed of improperly. Substantial contamination of a drinking water aquifer has resulted.	Superfund Interim Priority Site.
3. Sapp Battery Salvage (in Jackson County, Florida) recovered lead from spent batteries. Damage to surface and ground water was caused by spillage of acid from the spent batteries, leaching from severed battery casings, and (to a lesser degree) from runoff from batteries stored prior to being recovered.	Superfund Interim Priority Site.
4. Seymour Recycling Corp. (located in Indiana) is an inactive waste recycling and incineration facility which overaccumulated inventory and eventually ceased operation, leaving over 60,000 drums of one-half million gallons of bulk waste. Wastes are toxic ignitable, and corrosive. Ground and surface water contamination resulted, and there also is danger of fire or explosion.	Seymour Recycling Corp. (N.D. Ind.) (RCRA § 7003 action); Superfund Interim Priority Site.
5. A waste processing company (located in New Jersey) operated an oil recycling plant which purchased waste oil for reclamation. Waste oil, some of it PCB contaminated, was stored in unlined settling lagoons. Filter clay from the settling operation was also used to build a road to the site. The site was abandoned, leaving all waste material in place in the unlined lagoons. Contamination of an aquifer used as a public water supply is suspected. (Some damage at the site also resulted from disposal of waste from the reclamation process.)	Superfund Interim Priority Site (known as Burnt Fly Bog).
6. The Chem-Dyne facility (located in Ohio) engaged in reclamation of spent solvents and other organic chemicals. It also blended these wastes and sold the mixture as a fuel. The facility overaccumulated huge amounts of these materials, and also mishandled materials that were processed. Materials present include phenol, naphthalene, polyvinyl chloride distillation waste, paint sludges, ink sludges, vanadium pentoxide, cyanide, methylmercaptan, silicate resins, freon, acetaldehyde, benzyl chloride, cumenes, asbestos, epichlorohydrin, arsenic, toluene diioscyanate, pentachloronitrobenzene, phthalate esters, and plastic and rubber industry resins. Clean-up costs are estimated at $3.5 million. The company presently is in receivership. Hazards posed by this site include human health, contamination of air and surface water, fish kills, noticeable odors, actual fire, explosions, spills and runoff, storm sewer problems, erosion problems, inadequate security, and presence of incompatible wastes.	*U.S. v. Chem-Dyne, Inc.* (§ 7003 and Superfund action); Superfund Interim Priority Site; Hazardous Waste Report, December 14, 1981, p. 15.
7. The Bridgeport Rental and Oil Services site (located in Bridgeport, New Jersey) stored waste oil in an unlined lagoon prior to recycling it. The waste oil is known to be contaminated with benzene, vinyl chloride, methylene chloride, trichlorethylene and toluene. Overflow and leaching from the lagoon has been documented; groundwater used as a human drinking water source from nearby wells is contaminated.	Superfund Interim Priority Site; *U.S. v. Bridgeport Rental and Oil Services* (§ 7003 actions).
8. Chemical Metals Industries (located in Maryland) engaged in the reclamation of precious metals primarily from various electroplating wastes, as well as other spent chemical reprocessing. Most materials were taken pursuant to tolling agreements. Waste materials were accumulated sloppily, resulting in spills of acid and metal-bearing wastes. The facility later was abandoned, leaving over 1,500 drums of unreclaimed wastes, many corroded or leaking. Over $350,000 in federal, state and municipal funds has been expended to date on clean-up.	Superfund Interior Priority Site; Hazardous Waste Report, January 25, 1982, p. 4.
9. The Chemicals and Minerals Reclamation Company (located in Cleveland) acted as a waste broker, receiving flammable organics, solvents, and resins prior to recycling or disposal. A massive fire resulted from unsafe accumulation of these materials. The facility closed after the fire, leaving waste inventory (over 1,500 drums) for clean-up.	*U.S. v. Chemicals and Minerals Reclamation* § 7003 action); Superfund Interim Priority Site.
10. The Midwest Solvent Recovery Company, a solvent reclaimer located in Gary, Indiana, stored spent solvents improperly in drums, tanks, and open pits. These materials were often flammable, in many cases incompatible (acids and cyanides, for example), and were badly overaccumulated. A fire of "tremendous size" (484 F. Supp. at 140) broke out at the reclamation site, and burned for a week before it could be extinguished. The company continued to operate for a number of years after the fire without any change in practice. Soil and groundwater contamination have occurred. A preliminary injunction ordering clean-up was eventually entered in the government's imminent hazard action.	*U.S. Midwest Solvent Recovery Inc.* (§ 7003 action).
11. Solvent Recovery Service (located in Connecticut) obtained a variety of chlorinated solvents for reclamation. These solvents were stored improperly in leaking drums. Wastes were also disposed in a lagoon on the site. Aquifer contamination has resulted and the local drinking water supply has been affected.	*U.S. v. Solvent Recovery Service of New England* (§ 7003 action).
12. Andover Sites (located in Andover, Minn.) are a group of five sites which operated as waste brokers. They accepted metal-bearing wastes, solvents, waste oils, paints, inks, and glues. A recycling market was found for some of this material but a great deal overaccumulated. Some of this material was ultimately dumped or burned improperly. Many drums still remain. Ground and surface water have been contaminated by metals and organic contaminants.	Superfund Interior Priority Site.
13. Fritt Industries (in Walnut Ridge, Arkansas) obtained sulfate and other wastes from generators and used them as an ingredient in fertilizer production. These materials, along with other process ingredients, are stored in large, exposed piles. An enormous fire occurred when the piles of wastes ignited; runoff from water used to fight the fire contaminated soil and surface waters.	Superfund Interim Priority Site.
14. The South Carolina Recycling and Disposal Company was a waste broker accepting volatile organic wastes and waste oils. These materials were accumulated improperly prior to reclamation or disposal. Among the compounds present are solvents, waste oils, acetaldehyde, methyl acetate, cyanuric acid, ethylene chlorohydrin, acetone cyanohydrin, trichloroethylene, mixed acids sulfuric acid, mercuric oxide yellow, and other caustics and acids. Massive overaccumulation, fire hazard and actual fires, and groundwater contamination near drinking water wells resulted.	*U.S. v. South Carolina Recycling and Disposal Company* (Bluff Roads); (§ 7003 action); Superfund Interim Priority Site.
15. (* * *) accepts steel mill flue dust, pickle liquors, solvents, and acids for regeneration and material recovery. Some of these materials also are used as ingredients in fertilizers. The facility used surface impoundments and piles for storage. These storage facilities were unsecure and leaked heavy metals and chlorinated solvents. The facility also burns waste oil, spent solvents, and solvent distillation bottoms as fuels, creating air pollution problems. A local Air Pollution Control Agency has initiated action against the company to require monitoring of incoming wastes and of boiler flue gas emissions.	*Damages and Threats From Hazardous Material Sites*, EPA/430/9-80/004, p. 251; followup phone conversations with representatives of Ecology and Environment (EPA Superfund contractors); Superfund Interim Priority Site.
16. PCB contaminated waste oil was stored prior to recycling or road application. No market developed and the facility operator was unable to dispose of the contaminated oil. Over 24,000 gallons are accumulated, and the State probably will have to pay disposal costs.	*Damages and Threats From Hazardous Material Sites*, p.103.
17. The Laskin Greenhouse and Waste Oil Co. (located in Jefferson, Ohio) accepted waste oil and spent solvents for storage prior to use as fuels or for road oiling. Millions of gallons accumulated without being recycled, resulting in a substantial hazard. The boilers in which the waste oil was burnt were incapable of destroying the contained contaminants (including PCB's) resulting in air pollution. Approximately $1.7 million has already been expended; additional funds are to be allocated.	*U.S. Laskin Greenhouse and Waste Oil Co.* (§ 7003 action); Hazardous Waste Report, January 25, 1982, pp. 5-6, Superfund Interim Priority Site.
18. This facility (located in Illinois) engaged in petroleum reclamation from waste oil, and also reclaimed metal hydroxide sludges, spent acids and caustics, and miscellaneous sludges. These materials overaccumulated in pits, lagoons, and tanks. PCB's, phenol, and PAH's are found in the waste oil. Chromium, cadmium, and lead are also present, as are benzene, toluene, and trichloroethylene. Leaching and drainage to surface waters has caused extensive damage. Over $300,000 has been spent on clean-up to date.	*U.S. v. A&F Materials Co.* (§ 7003 action) Superfund Interim Priority Site.

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APPENDIX A.—SUMMARY OF DAMAGE INCIDENTS RESULTING FROM RECYCLING OF HAZARDOUS WASTES—Continued

Types of recycling operation, wastes present, damages caused, or hazards posed	Source of information
19. This scrap metal reclaimer stored materials destined for reclamation in leaking drums. Some ongoing disposal occurred as well. Paint sludge, 465 resin flux, and miscellaneous oily materials were on hand, contaminating soil and possibly ground and surface water.	*U.S. v. Acme Refining Co.* (§ 7003 action).
20. The site (located in Tennessee) engaged in waste salvage and disposal operations involving improperly drummed and buried materials; most constituents that leaked or spilled appear to be chlorinated solvents, 1,2-Dichloropropane has also been found.	*U.S. v. Automated Industrial Disposal and Salvage Co.* (§ 7003 action).
21. The Dewey-Loeffel, landfill (located in Nassau County, New York) was used in an oil reclamation and storage operation. PCB contaminated oil was stored at the site. Ground and surface water in the vicinity have been found to be contaminated with PCB.	*Damages and Threats from Hazardous Material Sites*, p. 193.
22. (* * *) is a solvent and chemical recovery and waste recycling operation. It also separates out and resells acids, caustics, and poisons. Some on-going disposal occurs as well. Chemicals which have been present at the site include acetone, ether, benzene, ketones, acetaldehyde, aniline, methanol, chlorinated solvents, cyanides, HCl, H_2SO, formic acid, PCBs, beryllium, penthachlorophenol and caustics. The government's complaint alleges that damages and hazards include overaccumulation, improper storage (including unsafe storage in underground bulk storage tanks), mislabelling, fire hazard, soil contamination and possible water contamination. A preliminary injunction has been entered ordering the facility to comply with certain of the interim status standards for storage.	*U.S. v. West* (§ 7003 action).
23. Improper storage of spent solvents by this Ohio solvent recovery operation led to contamination of ground and surface water and air. PCBs, tetrachloroethene, toluene, MEK, and xylene are among the toxicants involved.	*U.S. v. Chemical Recovery Systems* (§ 7003 action).
24. This Indiana scrap metal recovery operation accepted steel drums containing flammable toxic materials. These drums were stored and handled improperly. Substances present include cyanide, asbestos, and paint residues.	*U.S. v. Ken Industries* (§ 7003 action).
25. This Indiana facility engages in solvent reclamation. Disposal of incoming materials and still bottoms also occurred. A large fire was caused by overaccumulation and storage. Compounds present include arsenic, chromium, cadmium, lead, mercury, nickel, selenium, antimony, cyanides, dimethylphenols, phthalate esters, naphthalene, and solvents.	*U.S. v. Fisher-Calo Chemicals and Solvent Corp.* (§ 7003 action).
26. Doxin-contaminated waste oil was sprayed in horse show arenas, in Missouri, leading to poisoning of exposed individuals and livestock.	EPA Damage Incident Files.
27. Radioactive mining wastes are used as foundation fill for residential dwellings throughout Denver	Superfund Interim Priority Site (known as Denver radium site); also cited in Eckhardt Report).
28. Radioactive mining wastes are used as foundation fill for residential dwellings in Montana	Eckhardt Report.
29. Radioactive phosphate mining wastes are used as foundation fill for residential dwellings in Florida	Background Document 6 to EPA's 1978 proposed regulations.
30. Air pollution from solvent reclamation operations	Subtitle C Environmental Impact Statement, Vol. 11, p. J-1.
31. The American Ecological Recycle Research Corporation (located in Jefferson, Colorado) stores and reclaims solvents, waste oil, and other chemical wastes. Many of these materials are incompatible, including oxidizers and solvents, and cyanides and acids. These materials were stored together haphazardly, often in leaking drums. A large fire gutted portions of the facility, releasing toxic fumes and causing cyanide poisoning of firefighters. A continuing fire hazard and soil and water contamination threat remains.	*U.S. v. American Ecological Recycle Research Corp.* (§ 7003 action).
32. Air, ground water, and surface water contamination resulted from solvent recovery operations in Maryland (including volatilization of solvents from distillation units).	*U.S. v. Spectron, Inc.* (§ 7003 action).
33. Drinking water was contaminated because of improper storage of organic solvents at a reclamation facility	Minnesota State Damage File D2306.
34. The Schuylkill Metals Company (located in Hillsboro County, Florida) reclaims lead from spent batteries. Acid spillage from the battery cracking operations, acid and metal leaching from stored casings, and runoff from piled spent batteries have contaminated ground water in the area.	Interviews with officials of Hillsboro County Environmental Protection Commission.
35. The Chloride Metals Company (located in Tampa) is a secondary lead smelter reclaiming lead from spent batteries. Ground water is contaminated with acid and metals from the battery cracking operation (which recovers lead from smelting), and from runoff from piled casings and spent batteries.	Interviews with officials of Hillsboro County Environmental Protection Commission.
36. Reclamation of tetraethyl lead sludges stored in ponds prior to reclamation. Damage is from air pollution and from fumes in transit	§ 3004 damage incidents, also cited in H.R. Rep. 94-1491, pp. 20-21
37. Metal reclamation of "waste stockpiled raw materials." Leachate from these piles contaminated public drinking water supplies with metals, closing a number of wells.	H.R. Rep. 94-1491, p. 18.
38. A company reclaims copper from "industrial wastes"; these materials are stored in cement-lined lagoons. The lagoons cracked contaminating the ground and surface waters.	H.R. Rep. 94-1491, p. 17.
39. The McKin Company (located in Gray, Maine) was used as a transfer station and processing point for contaminated waste oils prior to final shipment to re-refiners. Both waste oil from oil spills and fuel still bottoms are reprocessed. Evidence exists that wastes were spilled at the processing facility and leached into the underlying aquifer. Organic toxicants were eventually identified in ground water, residential drinking wells, and the public water system. The damage appears to be attributable to waste disposal as well as waste oil processing. Specific contaminants found include trichlorethane, trichlorethylene, acetone, xylene, dimethyl sulfide, trimethylsilanol, and alcohols. The state eventually ordered the facility closed.	*Damage and Threats From Hazardous Material Sites*, p. 14.
40. Mercury-containing sludges generated by a number of different companies were sent to a Mexican reclaimer for metal recovery. The wastes were abandoned before they reached Mexico. In most cases, the drummed wastes were unlabelled and unmanifested, so that it is difficult to pinpoint responsibility or determine the precise nature of the drummed materials.	*U.S. v. Monochem, Inc.* (enforcement action).
41. Damage resulted from burning waste oil and solvents as fuel in boilers and landspreading of PCB-contaminated waste oil, coupled with improper tank and pond storage.	Tel. comm. with state site insp. on May 4, 1981; Task Force Source Data Report.
42. The Southern Metal Processing Company (located in Alabama) a reclamation facility for acid and metal-containing wastes, allowed over 10,000 drums to accumulate; leakage from these drummed wastes polluted surface waters. A fire at the site injured two firemen.	*Damages and Threats Caused by Hazardous Material Sites*, p. 43.
43. Waste oil contaminated with organics (including carbon tetrachloride) was used as a dust suppressant. Well contamination resulted	EPA, New Hampshire State Damage File, Code D2315.
44. Use of cadimum-contaminated POTW sludge as a fertilizer for farm land	EPA, New York State Damage File, Code D2317.
45. Waste oil storage results in ground water contamination from organics. Site also was used for disposal	EPA, New York State Damage File, Code D2317.
46. (* * *) engages in solvent reclamation and waste brokerage operations. Paint residues (to a lesser degree) are also redistilled at this plant. Hazards posed by the site include contamination of ground water and soil, noticeable odors, risk of fire/explosion, spills/runoff, sewer/storm problems, and presence of incompatible wastes.	Telephone conversation with state site inspector on May 5, 1981; Task Force Source Data Report.
47. (* * *) was paid by waste generators to store waste oil on-site. Prior to reclamation operations, waste oils were carelessly stored in surface impoundments or bulk tanks resulting in waste oil leakage.	Telephone conversation with state inspector on May 4, 1981; Task Force Source Data Report.
48. (* * *) reclaims both solvent and waste oil. Huge drum inventory resulted with some drums being stacked up as long as two years. Surface water was contaminated when hazardous waste leached from containers with unbroken seals. Paint solids were stored so long that reclamation became virtually impossible (due to thinner evaporation and rain dilution). Hazards posed by the site include contamination of water supply, contamination of surface water, and soil contamination from spills and runoff.	Telephone conversation with state inspector on May 4, 1981; Task Force Source Data Report.
49. (* * *) is a reclaimed solvent distributing plant that packages solvents in drums and sells them. If a company switches from one solvent to another, a pipeline must be washed out with the new product. The solvent mixture wash would be drummed, sold to (* * *) where the solvents would be separated and redistributed. Hazards posed by the site include worker injury contamination of soil, and spills/runoff.	Task Force Source Data Report.
50. (* * *) is predominantly a solvent reclamation operation. Solvents are stored in drums and tanks prior to reclamation. (* * *) paid to return refined materials to the manufacturer. The site was investigated primarily because of a spillage problem from loading and unloading drums outside. Potential hazards on the site include contamination of air, water supply, and ground water, risk of fire and explosion, spills, leaks, runoff and inadequate security.	Task Force Source Data Report.
51. (* * *) is a solvent reclamation operation. The waste generator buys back the reclaimed waste. Pre-RCRA (* * *) piled wastes for long periods of time in the open on permeable soil. No labels were on the drums and toxic chemicals leached.	Telephone conversation with state site inspector on May 5, 1981.
52. An oil reclamation firm in Region V recycles oil for large manufacturing plants. The firm takes used oil, restores it to desired levels of purity, blends it with virgin oil, and finally sells it back to the dealer to be sold. Hazard description/incident includes human health hazard, contamination of surface water, soil, and air, noticeable odors, fire/explosion, spills, runoff, and erosion problems.	Telephone conversation with state site inspector on May 5, 1981, Task Force Source Data Report.
53. The Sifresim Chemical Corp. (located in Massachusetts) engaged primarily in solvent reclamation, but also accumulated many other types of wastes. These materials overaccumulated and incompatible wastes were stored indiscriminately. An office fire triggered an explosion and a spectacular fire. The site is now bankrupt and over 30,000 drums, most containing unknown toxicants, remain $2.9 million has been spent on cleanup to date.	EPA Damage Incident Files, Superfund Interim Priority Site.

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APPENDIX A.—SUMMARY OF DAMAGE INCIDENTS RESULTING FROM RECYCLING OF HAZARDOUS WASTES—Continued

Types of recycling operation, wastes present, damages caused, or hazards posed	Source of information
54. (* * *) a New Jersey facility recycling organo-tin compounds, presently stores approximately 500 drums in poor condition. A potential fire hazard also exists and site security is inadequate.	EPA, Region II officials.
55. (* * *) a New Jersey facility, operated an oil/solvent reclamation facility. The site was abandoned, leaving hazardous wastes for cleanup.	EPA, Region II officials.
56. (* * *) a New Jersey drum reconditioner, went out of business leaving approximately 3000 drums on the site. There is extensive soil contamination and runoff into an adjacent drainage ditch.	EPA, Region II officials.
57. Quanta, Inc. (located in New Jersey) received tainted waste oils and spent solvents which it blended into fuels. The fuel was sold to apartment buildings for burning. PCBs, metals, bromoform, and halogenated solvents are present at the site and in the fuels. The site now has been abandoned.	EPA, Region II officials. (This site was also the subject of ABC's "20/20" broadcast on waste oil).
58. The Ferguson site (located in Rock Hill, South Carolina) stored spent solvents prior to reclamation. The solvents were stored in corroded and leaking drums, and leakage from the drums contaminated soil and seeped into surface water. Toxic chemicals in the waste and surrounding soil including toluene, bis(2-ethylhexyl) phthalate, xylene, ethyl chloride, diethyl carbometoxy phosphate, alcohols, and toxic metals. The site eventually was abandoned leaving about 2,500–5,000 drums. $143,000 was spent so far for site cleanup, and cleanup is not yet complete.	U.S. EPA, *Remedial Actions at Hazardous Waste Sites, Survey and Cost Studies*, EPA 430/9-81-05.
59. Chromium-bearing wastes were used as a landfill cap at the Monument St. Landfill in Baltimore, Md. The wastes began to leach toxic metals, and the runoff contaminated soil and surface water.	Report of the House Committee on Energy and Commerce (May 1982).
60. Commercial-grade pentachlorophenol is burnt as a fuel in diesel trucks. Chlorinated phenols, burnt at low temperatures and short residence times, are likely to form chlorinated dioxins and dibenzofurans.	EPA, Region VII officials.
61. B + L. Oil (located in Newark, New Jersey) sold contaminated waste oil as fuel. The blended fuel contained phenolic compounds, volatile chlorinated hydrocarbons, and aromatic hydrocarbons. The company and its president both have been convicted criminally in the New Jersey state courts.	New Jersey Hazardous Waste News, April 1982. Conversations with New Jersey state officials.
62. Madison Industries (located in Old Bridge, New Jersey) manufactures zinc chloride and zinc sulfate from waste zinc and spent acids, which it obtains from other sources. These materials were accumulated improperly in large quantities, causing damage.	Transcript of state enforcement proceedings.
63. Air pollution resulted from solvent and waste oil recovery operations conducted by Frinck's Industrial Waste facility (located in Pecatonica County, Ill).	Documents from Illinois Environmental Protection Agency.
64. The Old Inger Oil Refinery (located in Darrow, La.) operated an oil reclamation plant. Storage tanks overflowed into holding ponds which were later abandoned without cleanup.	Superfund Interim Priority Site.
65. York Oil Co. (located in Moira, New York) is an abandoned waste oil recycling facility. Lagoons used in the recovery of waste oil discharged into adjacent wetlands. The lagoons and wetlands remain contaminated with PCB-containing oil.	Superfund Interim Priority Site.
66. Enviro-Chem, a hazardous waste recycling facility in Indiana, was investigated by State officials after an employee died in a tank of hazardous waste. The officials found 21,000 barrels of hazardous waste at the site. The facility has been ordered to close down due to failure to remove sludge and contaminated soil from a pit, failure to provide adequate concrete pads for 14,000 barrels of hazardous waste being stored on the ground at the site, and failure to store hazardous materials in compliance with State fire marshal rules and regulations.	EPA, Region V officials.
67. American Recovery, a chemical waste reprocessing facility (located in the Baltimore area) has suffered a number of fires caused by explosions of accumulated wastes. The facility also was fined for violation of various state regulatory requirements.	EPA, Region III officials.

Note.—Summaries of § 7003 actions are based on allegations in the Government's verified complaints. The courts hearing these must decide ultimately whether these allegations have been proven. In citing these allegations, we are not seeking to prejudice the outcome of these actions. At the same time, these statements reflect the results of the Government's investigation of these sites, and the Agency believes the statements to be accurate. In many cases, we are citing these allegations to demonstrate that there is a need for regulation in this area, not to ascertain the potential liability of particular facilities.

In addition, certain sites are not named specifically in this Appendix, because the companies involved are the subject of ongoing enforcement investigation. These companies are indicated by (* * *) in the summary.

The Agency's task force source data report is a confidential compilation of inspections of damage sites by Federal and State Officials. It also contains reports of some § 3007 inspections whether or not the sites were causing damage.

APPENDIX B.—DEFINITION OF A SOLID WASTE DAMAGE INCIDENTS—ADDITIONS LIST

Damage Incident	Source
1. New Castle Steel (New Castle County, Delaware) recycles electric furnace dust. Run-off from the site is contaminated and there is potential for contamination of ground water.	National Priorities List. Aug. 1983.
2. The Arrcom Corp. (Rathdrum, Idaho) recycled waste oils containing solvents, prior to abandoning the site in January 1982. Remaining on-site are 17 partially filled storage tanks, the contents of which remain largely undetermined. Chloroform has been found in a soil sample. Wastes processed at the site may have included PCBs. EPA has collected soil samples to document leakage on site.	Do.
3. The Cross Brothers Pail Recycling (Pembroke Township, Illinois) recycled pails and drums at the site between 1961 and 1980. The operation involved burning out pail and drum residue using hazardous waste solvents as fuel, and then sand-blasting and painting. During these operations, soil and ground water became contaminated. Investigations by the State discovered over 10,000 5-gallon pails (mostly empty), 10 acres of contaminated soil, at least 10 covered trenches of unknown wastes, and a plume of contaminated ground water leaving the site.	Do.
4. The LaSalle Electrical Utilities Site (LaSalle, Illinois) manufactured capacitors using PCBs from the late 1940s to late 1978. The company reportedly used waste oils from this process to control dust in the parking lot until 1969. More than 1,000 parts per million PCBs remain in the soil throughout the site.	Do.
5. The Old Inger Oil Refinery Site (Darrow, Louisiana) reclaimed oil from refinery wastes in 1976. A spill in 1976 contaminated a large surface area. In 1981, Louisiana officially declared the site "abandoned." It has nine oil storage tanks, which have overflowed into nearby holding ponds and a swamp. Ground water and soil are contaminated by organic chemicals. This is the top priority site in Louisiana.	Do.
6. The PSC Resources Site (Palmer, Massachusetts) formerly owned by Phillips Resources, Inc., holds 34,000 gallons of waste. The inactive facility reclaimed waste oil from Massachusetts collection points. These products were then heat treated and sold as a base for lubricating oil, road spray oil, and fuel. After a spill in June 1982, EPA discovered several leaking tanks and containment dikes, as well as saturated soils. Surface waters, wetlands, and ground water are directly threatened by the waste. Trichlorethane and PCBs have been identified in an adjacent swamp.	Do.
7. York Oil Co. (Moira, New York) formerly recycled waste oils. Before the site was abandoned, it consisted of eight steel storage tanks, two buildings, and three lagoons. The berms of the lagoons have failed in the past, discharging PCB-contaminated oil into the adjacent wetlands that drain into Lawrence Brook. Analyses indicate 50 parts per million (ppm) of PCB in lagoon waters, over 500 ppm in lagoon sludge, up to 26 parts per billion (ppb) in ground water; and up to 350 ppm in solids.	Do.
8. The Arcanum Iron & Metal Site (Darke County, Ohio) has been in the scrap metal/recycling business since the early 1960s. It now recycles lead batteries. Large piles of battery casings, lead, and lead oxides are on the property, as well as standing pools of acid wastes. Acid overflow from this operation has killed both fish and vegetation in Painter Creek, downstream of the site.	Do.
9. The Metal Banks Site (Philadelphia, Pennsylvania) processed transformers and oil contaminated with PCBs there for a number of years until closing the operation in 1972. In 1977, EPA determined that periodic oil slicks found in the Delaware River adjacent to the site were contaminated with PCBs. The site was subsequently identified as the source of the slicks. A U.S. Coast Guard study revealed that up to 20,000 gallons of PCB-contaminated oil were in the ground water under the site and were leaking into the Delaware River.	Do.
10. In 1970, the road through Quail Run Mobile Manor (2 miles east of Gray Summit, Missouri) was sprayed with 25 barrels of dioxin contaminated waste oil. In 1974, soil was excavated to a depth of 2 feet from one road in the park. This was deposited in the area between the road and a lagoon. On February 2, 1983, EPA identified dioxin at the site. Analysis of soil samples detected 1.4 parts per billion (ppb), 14 ppb, and 23 ppb of dioxin. Additional sampling on March 9, 1983, revealed a range of levels from 6 ppb to 1,100 ppb.	National Priorities List Update, July 1984.
11. The Sand Springs Petrochemical Complex (near Sand Springs, Oklahoma) consists of three adjacent areas on the abandoned Old Sinclair Refinery, including a waste oil recycling facility, a solvents recycling facility, and the Sinclair Refinery acid pits—an original part of the Old Sinclair Refiner. The two recycling companies have been in business since the mid-1970s. Over the years, hazardous substances were stored or disposed of in drums, tanks, and unlined pits, or were simply buried on-site. These substances include volatile and nonvolatile organics, acids, caustics, chlorinated solvents, and sludges containing heavy metals. Poor operations have contaminated local ground-water, and there is the potential for contaminants to leave the site in run-off.	Do.
12. Waste Research & Reclamation Co. (Eau Claire, Wisconsin) has recycled oil and solvents from industrial sources since 1975. The techniques used to handle and store drums allowed wastes to spill on the site. Run-off from waste processing has been collected in unlined impoundments. Organic solvents from the site contaminate ground water.	Do.

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APPENDIX B.—DEFINITION OF A SOLID WASTE DAMAGE INCIDENTS—ADDITIONS LIST—Continued

Damage Incident	Source
13. The NL Industries site (Salem County, New Jersey) recovers lead from spent automotive batteries and separates the plastic from the rubber casings. As a result of improper storage of batteries on the site and other factors relating to their processing, ground water, surface water, and soils are extensively contaminated with various heavy metals.	National Priorities List Aug. 1983.
14. Scientific Chemical Processing, Inc. (Carlstadt, New Jersey) recovered and recycled various chemical wastes. As a result of a State Order, the company ceased operations in 1980. About 375,000 gallons of hazardous substances are stored on the site in tanks, drums, and tank trailers. Soils are extensively contaminated, run-off from the site is contaminated, and ground water contamination is likely.	Do.
15. In 1983, the State of Indiana filed suit against Norman Poer, an individual who contracted with Inmont Corporation to purchase what he was told was paint and solvent, in an attempt to recycle them to produce low grade paint. When Mr. Poer was unable to sell or give away the paint, he abandoned it on a 5-acre field he owned in Jackson Township, Indiana. Ground water samples indicate that the well on site contains hazardous levels of arsenic and lead. In addition, further tests have indicated that the paint waste has elevated levels of lead and chromium and that the ignitability of the waste classifies it as hazardous. The barrels remain on site, leaking contents onto the ground.	National Priorities List Update, July 1984.

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

PART 260—HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for Part 260 reads as follows:

Authority: Secs. 1006, 2002(a), 3001 through 3007, and 3010 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended [42 U.S.C. 6905, 6912(a), 6921 through 6927, and 6930].

2. Section 261.10 is amended by adding new definitions for "Boiler" and "Industrial Furnace" to appear alphabetically and by revising the definitions of "Designated facility" and "Incinerator."

§ 260.10 Definitions

* * * * *

"Boiler" means an enclosed device using controlled flame combustion and having the following characteristics:

(1) (i) The unit must have physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

(ii) The unit's combustion chamber and primary energy recovery sections(s) must be of integral design. To be of integral design, the combustion chamber and the primary energy recovery section(s) (such as waterwalls and superheaters) must be physically formed into one manufactured or assembled unit. A unit in which the combustion chamber and the primary energy recovery section(s) are joined only by ducts or connections carrying flue gas is not integrally designed; however, secondary energy recovery equipment (such as economizers or air preheaters) need not be physically formed into the same unit as the combustion chamber and the primary energy recovery section. The following units are not precluded from being boilers solely because they are not of integral design: process heaters (units that transfer energy directly to a process stream), and fluidized bed combustion units; and

(iii) While in operation, the unit must maintain a thermal energy recovery efficiency of at least 60 percent, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

(iv) The unit must export and utilize at least 75 percent of the recovered energy, calculated on an annual basis. In this calculation, no credit shall be given for recovered heat used internally in the same unit. (Examples of internal use are the preheating of fuel or combustion air, and the driving of induced or forced draft fans or feedwater pumps); or

(2) The unit is one which the Regional Administrator has determined, on a case-by-case basis, to be a boiler, after considering the standards in § 260.32.

"Designated facility" means a hazardous waste treatment, storage, or disposal facility which has received an EPA permit (or a facility with interim status) in accordance with the requirements of Parts 270 and 124 of this Chapter, a permit from a State authorized in accordance with Part 271 of this Chapter, or that is regulated under § 261.6(c)(2) or Subpart F of Part 266 of this Chapter, and that has been designated on the manifest by the generator pursuant to § 262.20.

* * * * *

"Incinerator" means any enclosed device using controlled flame combustion that neither meets the criteria for classification as a boiler nor is listed as an industrial furnace.

"Industrial furnace" means any of the following enclosed devices that are integral components of manufacturing processes and that use controlled flame devices to accomplish recovery of materials or energy:

(1) Cement kilns
(2) Lime kilns
(3) Aggregate kilns
(4) Phosphate kilns
(5) Coke ovens
(6) Blast furnaces
(7) Smelting, melting and refining furnaces (including pyrometallurgical devices such as cupolas, reverberator furnaces, sintering machine, roasters, and foundry furnaces)
(8) Titanium dioxide chloride process oxidation reactors
(9) Methane reforming furnaces
(10) Pulping liquor recovery furnaces
(11) Combustion devices used in the recovery of sulfur values from spent sulfuric acid
(12) Such other devices as the Administrator may, after notice and comment, add to this list on the basis of one or more of the following factors:

(i) The design and use of the device primarily to accomplish recovery of material products;

(ii) The use of the device to burn or reduce raw materials to make a material product;

(iii) The use of the device to burn or reduce secondary materials as effective substitutes for raw materials, in processes using raw materials as principal feedstocks;

(iv) The use of the device to burn or reduce secondary materials as ingredients in an industrial process to make a material product;

(v) The use of the device in common industrial practice to produce a material product; and

(vi) Other factors, as appropriate.

* * * * *

3. In Subpart C of Part 260, add the following § 260.30:

§ 260.30 Variances from classification as a solid waste.

In accordance with the standards and criteria in § 260.31 and the procedures in § 260.33, the Regional Administrator may determine on a case-by-case basis that the following recycled materials are not solid wastes:

(a) Materials that are accumulated speculatively without sufficient amounts being recycled (as defined in § 261.1(c)(8)(B) of this Chapter);

(b) Materials that are reclaimed and then reused within the original primary production process in which they were generated;

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(c) Materials that have been reclaimed but must be reclaimed further before the materials are completely recovered.

4. In Subpart C of Part 260, add the following § 260.31:

§ 260.31 Standards and criteria for variances from classification as a solid waste.

(a) The Regional Administrator may grant requests for a variance from classifying as a solid waste those materials that are accumulated speculatively without sufficient amounts being recycled if the applicant demonstrates that sufficient amounts of the material will be recycled or transferred for recycling in the following year. If a variance is granted, it is valid only for the following year, but can be renewed, on an annual basis, by filing a new application. The Regional Administrator's decision will be based on the following standards and criteria:

(1) The manner in which the material is expected to be recycled, when the material is expected to be recycled, and whether this expected disposition is likely to occur (for example, because of past practice, market factors, the nature of the material, or contractual arrangements for recycling);

(2) The reason that the applicant has accumulated the material for one or more years without recycling 75 percent of the volume accumulated at the beginning of the year;

(3) The quantity of material already accumulated and the quantity expected to be generated and accumulated before the material is recycled;

(4) The extent to which the material is handled to minimize loss;

(5) Other relevant factors.

(b) The Regional Administrator may grant requests for a variance from classifying as a solid waste those materials that are reclaimed and then reused as feedstock within the original primary production process in which the materials were generated if the reclamation operation is an essential part of the production process. This determination will be based on the following criteria:

(1) How economically viable the production process would be if it were to use virgin materials, rather than reclaimed materials;

(2) The prevalence of the practice on an industry-wide basis;

(3) The extent to which the material is handled before reclamation to minimize loss;

(4) The time periods between generating the material and its reclamation, and between reclamation and return to the original primary production process;

(5) The location of the reclamation operation in relation to the production process;

(6) Whether the reclaimed material is used for the purpose for which it was originally produced when it is returned to the original process, and whether it is returned to the process in substantially its original form;

(7) Whether the person who generates the material also reclaims it;

(8) Other relevant factors.

(c) The Regional Administrator may grant requests for a variance from classifying as a solid waste those materials that have been reclaimed but must be reclaimed further before recovery is completed if, after initial reclamation, the resulting material is commodity-like (even though it is not yet a commercial product, and has to be reclaimed further). This determination will be based on the following factors:

(1) The degree of processing the material has undergone and the degree of further processing that is required;

(2) The value of the material after it has been reclaimed;

(3) The degree to which the reclaimed material is like an analogous raw material;

(4) The extent to which an end market for the reclaimed material is guaranteed;

(5) The extent to which the reclaimed material is handled to minimize loss;

(6) Other relevant factors.

5. In Subpart C of Part 260, add the following § 260.32:

§ 260.32 Variance to be classified as a boiler.

In accordance with the standards and criteria in § 260.10 (definition of "boiler"), and the procedures in § 260.33, the Regional Administrator may determine on a case-by-case basis that certain enclosed devices using controlled flame combustion are boilers, even though they do not otherwise meet the definition of boiler contained in § 260.10, after considering the following criteria:

(a) The extent to which the unit has provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

(b) The extent to which the combustion chamber and energy recovery equipment are of integral design; and

(c) The efficiency of energy recovery, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

(d) The extent to which exported energy is utilized; and

(e) The extent to which the device is in common and customary use as a "boiler" functioning primarily to produce steam, heated fluids, or heated gases; and

(f) Other factors, as appropriate.

6. In Subpart C of Part 260, add the following § 260.33:

§ 260.33 Procedures for variances from classification as a solid waste or to be classified as a boiler.

The Regional Administrator will use the following procedures in evaluating applications for variances from classification as a solid waste or applications to classify particular enclosed flame combustion devices as boilers:

(a) The applicant must apply to the Regional Administrator in the region where the recycler is located. The application must address the relevant criteria contained in § 260.31 or § 260.32 of this Part.

(b) The Regional Administrator will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be provided by newspaper advertisement and radio broadcast in the locality where the recycler is located. The Regional Administrator will accept comment on the tentative decision for 30 days, and may also hold a public hearing upon request or at his discretion. The Regional Administrator will issue a final decision after receipt of comments and after the hearing (if any), and this decision may not be appealed to the Administrator.

7. In Subpart C of Part 260, add the following § 260.40:

§ 260.40 Additional regulation of certain hazardous waste recycling activities on a case-by-case basis.

(a) The Regional Administrator may decide on a case-by-case basis that persons accumulating or storing the recyclable materials described in § 261.6(a)(2)(iv) of this Chapter should be regulated under § 261.6 (b) and (c) of this Chapter. The basis for this decision is that the materials are being accumulated or stored in a manner that does not protect human health and the environment because the materials or their toxic constituents have not been adequately contained, or because the materials being accumulated or stored together are incompatible. In making this decision, the Regional Administrator will consider the following factors:

(1) The types of materials accumulated or stored and the amounts accumulated or stored;

(2) The method of accumulation or storage;

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(3) The length of time the materials have been accumulated or stored before being reclaimed;

(4) Whether any contaminants are being released into the environment, or are likely to be so released; and

(5) Other relevant factors.

The procedures for this decision are set forth in §260.41 of this Chapter.

8. In Subpart C of Part 260, add the following § 260.41:

§260.41 Procedures for case-by-case regulation of hazardous waste recycling activities.

The Regional Administrator will use the following procedures when determining whether to regulate hazardous waste recycling activities described in § 261.6(a)(2)(iv) under the provisions of § 261.6 (b) and (c), rather than under the provisions of Subpart F of Part 266 of this Chapter.

(a) If a generator is accumulating the waste, the Regional Administrator will issue a notice setting forth the factual basis for the decision and stating that the person must comply with the applicable requirements of Subparts A, C, D, and E of Part 262 of this Chapter. The notice will become final within 30 days, unless the person served requests a public hearing to challenge the decision. Upon receiving such a request, the Regional Administrator will hold a public hearing. The Regional Administrator will provide notice of the hearing to the public and allow public participation at the hearing. The Regional Administrator will issue a final order after the hearing stating whether or not compliance with Part 262 is required. The order becomes effective 30 days after service of the decision unless the Regional Administrator specifies a later date or unless review by the Administrator is requested. The order may be appealed to the Administrator by any person who participated in the public hearing. The Administrator may choose to grant or to deny the appeal. Final Agency action occurs when a final order is issued and Agency review procedures are exhausted.

(b) If the person is accumulating the recyclable material as a storage facility, the notice will state that the person must obtain a permit in accordance with all applicable provisions of Parts 270 and 124 of this Chapter. The owner or operator of the facility must apply for a permit within no less than 60 days and no more than six months of notice, as specified in the notice. If the owner or operator of the facility wishes to challenge the Regional Administrator's decision, he may do so in his permit application, in a public hearing held on the draft permit, or in comments filed on the draft permit or on the notice of intent to deny the permit. The fact sheet accompanying the permit will specify the reasons for the Agency's determination. The question of whether the Regional Administrator's decision was proper will remain open for consideration during the public comment period discussed under § 124.11 of this Chapter and in any subsequent hearing.

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

9. The authority citation for Part 261 reads as follows:

Authority: Secs. 1006, 2002(a), 3001, and 3002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended [42 U.S.C. 6905, 6912(a), 6921, and 6922].

10. In § 261.1, paragraph (c) is added and paragraph (b) is revised to read as follows:

§ 261.1 Purpose and scope.

* * * * *

(b)(1) The definition of solid waste contained in this Part applies only to wastes that also are hazardous for purposes of the regulations implementing Subtitle C of RCRA. For example, it does not apply to materials (such as non-hazardous scrap, paper, textiles, or rubber) that are not otherwise hazardous wastes and that are recycled.

(2) This Part identifies only some of the materials which are solid wastes and hazardous wastes under Sections 3007, 3013, and 7003 of RCRA. A material which is not defined as a solid waste in this Part, or is not a hazardous waste identified or listed in this Part, is still a solid waste and a hazardous waste for purposes of these sections if:

(i) In the case of Sections 3007 and 3013, EPA has reason to believe that the material may be a solid waste within the meaning of Section 1004(27) of RCRA and a hazardous waste within the meaning of Section 1004(5) of RCRA; or

(ii) In the case of Section 7003, the statutory elements are established.

(c) For the purposes of Sections 261.2 and 261.6:

(1) A "spent material" is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing;

(2) "Sludge" has the same meaning used in § 260.10 of this Chapter;

(3) A "by-product" is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. Examples are process residues such as slags or distillation column bottoms. The term does not include a co-product that is produced for the general public's use and is ordinarily used in the form it is produced by the process.

(4) A material is "reclaimed" if it is processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents.

(5) A material is "used or reused" if it is either:

(i) Employed as an ingredient (including use as an intermediate) in an industrial process to make a product (for example, distillation bottoms from one process used as feedstock in another process). However, a material will not satisfy this condition if distinct components of the material are recovered as separate end products (as when metals are recovered from metal-containing secondary materials); or

(ii) Employed in a particular function or application as an effective substitute for a commercial product (for example, spent pickle liquor used as phosphorous precipitant and sludge conditioner in wastewater treatment).

(6) "Scrap metal" is bits and pieces of metal parts (*e.g.*,) bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (*e.g.*, radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.

(7) A material is "recycled" if it is used, reused, or reclaimed.

(8) A material is "accumulated speculatively" if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that—during the calendar year (commencing on January 1)—the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the 75 percent requirement is to be applied to each material of the same type (*e.g.*, slags from a single smelting process) that is recycled in the same way (*i.e.*, from which the same material is recovered or that is used in the same way). Materials accumulating in units that would be exempt from regulation under § 261.4(c) are not be included in making the calculation. (Materials that are already defined as solid wastes also are not to be included in making the

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calculation.) Materials are no longer in this category once they are removed from accumulation for recycling, however.

11. Section 261.2 is revised to read as follows:

§ 261.2 Definition of solid waste.

(a)(1) A *solid waste* is any discarded material that is not excluded by § 261.4(a) or that is not excluded by variance granted under §§ 260.30 and 260.31.

(2) A *discarded material* is any material which is:

(i) *Abandoned,* as explained in paragraph (b) of this section; or

(ii) *Recycled,* as explained in paragraph (c) of this section; or

(iii) Considered *inherently waste-like,* as explained in paragraph (d) of this section.

(b) Materials are solid waste if they are *abandoned* by being:

(1) Disposed of; or

(2) Burned or incinerated; or

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

(c) Materials are solid wastes if they are *recycled*—or accumulated, stored, or treated before recycling—as specified in paragraphs (c)(1) through (c)(4) of this section.

(1) *Used in a manner constituting disposal.* (i) Materials noted with a "*" in Column 1 of Table I are solid wastes when they are:

(A) Applied to or placed on the land in a manner that constitutes disposal; or

(B) Contained in products that are applied to the land (in which case the product itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use.

(2) *Burning for energy recovery.* (i) Materials noted with a "*" in column 2 of Table 1 are solid wastes when they are:

(A) Burned to recover energy;

(B) Used to produce a fuel;

(C) Contained in fuels (in which case the fuel itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are themselves fuels.

(3) *Reclaimed.* Materials noted with a "*" in column 3 of Table 1 are solid wastes when reclaimed.

(4) *Accumulated speculatively.* Materials noted with a "*" in column 4 of Table 1 are solid wastes when accumulated speculatively.

TABLE 1

	Use constituting disposal (261.2(c)(1)) (1)	Energy recovery/fuel (261.2(c)(2)) (2)	Reclamation (261.2(c)(3)) (3)	Speculative accumulation (261.2(c)(4)) (4)
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 CFR Part 261.31 or .32)	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)		(*)
By-products (listed in 40 CFR Part 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)		(*)
Commercial chemical products listed in 40 CFR § 261.33	(*)	(*)		
Scrap metal	(*)	(*)	(*)	(*)

Note.—The terms "spent materials", "sludges", "by-products," and "scrap metal" are defined in § 261.1.

(d) *Inherently waste-like materials.* The following materials are solid wastes when they are recycled in any manner:

(1) Hazardous Waste Nos. F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.

(2) The Administrator will use the following criteria to add wastes to that list:

(i)(A) The materials are ordinarily disposed of, burned, or incinerated; or

(B) The materials contain toxic constituents listed in Appendix VIII of Part 261 and these constituents are not ordinarily found in raw materials or products for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

(ii) The material may pose a substantial hazard to human health and the environment when recycled.

(e) *Materials that are not solid waste when recycled.* (1) Materials are not solid wastes when they can be shown to be recycled by being:

(i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

(ii) Used or reused as effective substitutes for commercial products; or

(iii) Returned to the original process from which they are generated, without first being reclaimed. The material must be returned as a substitute for raw material feedstock, and the process must use raw materials as principal feedstocks.

(2) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in paragraphs (e)(1)(i)–(iii) of this section:

(i) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or

(ii) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

(iii) Materials accumulated speculatively; or

(iv) Materials listed in paragraph (d)(1) of this section.

(f) *Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation.* Respondents in actions to enforce regulations implementing Subtitle C of RCRA who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

12. Section 261.3 is amended by revising paragraph (c)(2) to read as follows:

§ 261.3 Definition of Hazardous Waste.

* * * * *

(c) * * *

(2) Any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate (but not including precipitation run-off), is a hazardous waste. (However, materials that are reclaimed from solid wastes and that are used beneficially are not solid wastes and hence are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.)

* * * * *

13. Section 261.4 is revised by adding paragraphs (a)(6) and (a)(7) to read as follows:

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§ 261.4 Exclusions.

(a) * * *

* * * * *

(6) Black liquor that is reclaimed in a Kraft pulping liquor recovery furnace and then reused in the Kraft paper process, unless it is accumulated speculatively as defined in § 261.1(c) of this Chapter;

(7) Spent sulfuric acid used to produce virgin sulfuric acid, unless it is accumulated speculatively as defined in § 261.1(c) of this Chapter.

* * * * *

14. Section 261.5 is amended by revising paragraph (c) to read as follows:

§ 261.5 Special requirements for hazardous waste generated by small quantity generators.

* * * * *

(c) Hazardous waste that is recycled and that is excluded from regulation under §§ 261.6 (a)(2)(iii) and (v), (a)(3), or 266.36 is not included in the quantity determinations of this section and is not subject to any requirements of this section. Hazardous waste that is subject to the requirements of §§ 261.6 (b) and (c) and Subparts C and D of Part 266 is included in the quantity determination of this section and is subject to the requirements of this section.

* * * * *

15. Section 261.6 is revised to read as follows

§ 261.6 Requirements for recyclable materials.

(a)(1) Hazardous wastes that are recycled are subject to the requirements for generators, transporters, and storage facilities of paragraphs (b) and (c) of this section, except for the materials listed in paragraphs (a)(2) and (a)(3) of this section. Hazardous wastes that are recycled will be known as "recyclable materials."

(2) The following recyclable materials are not subject to the requirements of this section but are regulated under Subparts C through G of Part 266 of this Chapter and all applicable provisions in Parts 270 and 124 of this Chapter:

(i) Recyclable materials used in a manner constituting disposal (Subpart C);

(ii) Hazardous wastes burned for energy recovery in boilers and industrial furnaces that are not regulated under Subpart O of Part 264 or 265 of this Chapter (Subpart D);

(iii) [Reserved for used oil];

(iv) Recyclable materials from which precious metals are reclaimed (Subpart F);

(v) Spent lead-acid batteries that are being reclaimed (Subpart G).

(3) The following recyclable materials are not subject to regulation under Parts 262 through 266 or Parts 270 or 124 of this Chapter, and are not subject to the notification requirements of Section 3010 of RCRA:

(i) Industrial ethyl alcohol that is reclaimed;

(ii) Used batteries (or used battery cells) returned to a battery manufacturer for regeneration;

(iii) Used oil that exhibits one or more of the characteristics of hazardous waste; or

(iv) Scrap metal.

(b) Generators and transporters of recyclable materials are subject to the applicable requirements of Parts 262 and 263 of this Chapter and the notification requirements under Section 3010 of RCRA, except as provided in paragraph (a) of this section.

(c)(1) Owners or operators of facilities that store recyclable materials are regulated under all applicable provisions of Subparts A through L of Parts 264 and 265 and Parts 270 and 124 of this Chapter and the notification requirement under Section 3010 of RCRA, except as provided in paragraph (a) of this section.

(2) Owners or operators of facilities that recycle recyclable materials without storing them before they are recycled are subject to the following requirements, except as provided in paragraph (a) of this section:

(i) Notification requirements under section 3010 of RCRA;

(ii) Sections 265.71 and 265.72 (dealing with the use of the manifest and manifest discrepancies) of this Chapter.

16. Section 261.31 is amended by revising the hazardous waste listings F007, F008, F009, F010, F011, and F012 to read as follows:

§ 261.31 Hazardous waste from non-specific sources.

* * * * *

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Generic:		
F007	Spent cyanide plating bath solutions from electroplating operations.	(R, T)
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	(R, T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(R, T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	(R, T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	(R, T)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)

* * * * *

17. Section 261.33 is amended by revising the introductory text to read as follows:

§ 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

The following materials or items are hazardous wastes when they are discarded or intended to be discarded as described in § 261.2(a)(2)(i), when they are burned for purposes of energy recovery in lieu of their original intended use, when they are used to produce fuels in lieu of their original intended use, when they are applied to the land in lieu of their original intended use, or when they are contained in products that are applied to the land in lieu of their original intended use.

* * * * *

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

18. The authority citation for Part 264 reads as follows:

Authority. Secs. 1006, 2002(a), 3004, and 3005 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6905, 6912(a), 6924, and 6925).

19. In § 264.1, paragraph (g)(2) is revised to read as follows:

§ 264.1 Purpose, scope, and applicability.

* * * * *

(g) * * *

(2) The owner or operator of a facility managing recyclable materials described in § 261.6(a) (2) and (3) of this Chapter (except to the extent that requirements of this Part are referred to in Subparts C, D, F, or G of Part 266 of this Chapter).

* * * * *

20. Section 264.340(a) is revised to read as follows:

§ 264.340 Applicability.

(a) The regulations in this Subpart apply to owners or operators of facilities that incinerate hazardous waste, except

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as § 264.1 provides otherwise. The following facility owners or operators are considered to incinerate hazardous waste:

(1) Owners or operators of hazardous waste incinerators (as defined in § 260.10 of this Chapter); and

(2) Owners or operators who burn hazardous waste in boilers or in industrial furnaces in order to destroy the wastes.

* * * * *

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

21. The authority citation for Part 265 reads as follows:

Authority: Secs. 1006, 2002(a), 3004, and 3005 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6905, 6921(a), 6924, and 6925).

22. In § 265.1, paragraph (c)(6) is revised to read as follows:

§ 265.1 Purpose, Scope, and Applicability.

* * * * *

(c) * * *

(6) The owner and operator of a facility managing recyclable materials described in § 261.6 (a) (2) and (3) of this Chapter (except to the extent that requirements of this Part are referred to in Subparts C, D, F, or G of Part 266 of this Chapter).

* * * * *

23. Section 265.340(a) is revised to read as follows:

§ 265.340 Applicability.

(a) The regulations in this Subpart apply to owners or operators of facilities that incinerate hazardous waste, except as § 264.1 provides otherwise. The following facility owners or operators are considered to incinerate hazardous waste:

(1) Owners or operators of hazardous waste incinerators (as defined in § 260.10 of this Chapter); and

(2) Owners or operators who burn hazardous wastes in boilers or in industrial furnaces in order to destroy the wastes.

* * * * *

24. Section 265.370 is revised to read as follows:

§ 265.370 Other thermal treatment.

The regulations in this Subpart apply to owners or operators of facilities that thermally treat hazardous waste in devices other than enclosed devices using controlled flame combustion, except as § 265.1 provides otherwise. Thermal treatment in enclosed devices using controlled flame combustion is subject to the requirements of Subpart O if the unit is an incinerator.

25. Part 266 is added to read as follows:

PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

Subparts A-B—[Reserved]

Subpart C—Recyclable Materials Used in a Manner Constituting Disposal

Sec.
266.20 Applicability.
266.21 Standards applicable to generators and transporters of materials used in a manner that constitute disposal.
266.22 Standards applicable to storers of materials that are to be used in a manner that constitutes disposal who are not the ultimate users.
266.23 Standards applicable to users of materials that are used in a manner that constitutes disposal.

Subpart D—Hazardous Waste Burned for Energy Recovery

266.30 Applicability.
266.31 Prohibitions. [Reserved]
266.32 Standards applicable to generators of hazardous waste fuel.
266.33 Standards applicable to transporters of hazardous waste fuel.
266.34 Standards applicable to marketers of hazardous waste fuel.
266.35 Standards applicable to burners of hazardous waste fuel.
266.36 Conditional exemption for spent materials and byproducts exhibiting a characteristic of hazardous waste.

Subpart E—[Reserved]

Subpart F—Recyclable Materials Utilized for Precious Metal Recovery

266.70 Applicability and requirements.

Subpart G—Spent Lead-acid Batteries Being Reclaimed

266.80 Applicability and requirements.

Authority: Sec. 1006, 2002(a), and 3004 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6905, 6912(a), and 6924).

Subparts A-B—[Reserved]

Subpart C—Recyclable Materials Used in a Manner Constituting Disposal

§ 266.20 Applicability.

(a) The regulations of this Subpart apply to recyclable materials that are applied to or placed on the land:

(1) without mixing with any other substance(s); or

(2) after mixing with any other substance(s), unless the recyclable material undergoes a chemical reaction so as to become inseparable from the other substance(s) by physical means; or

(3) after combination with any other substance(s) if the resulting combined material is not produced for the general public's use. These materials will be referred to throughout this Subpart as "materials used in a manner that constitutes disposal."

(b) Products produced for the general public's use that are used in a manner that constitutes disposal and that contain recyclable materials are not presently subject to regulation if the recyclable materials have undergone a chemical reaction in the course of producing the product so as to become inseparable by physical means. Commercial fertilizers that are produced for the general public's use that contain recyclable materials also are not presently subject to regulation.

§ 266.21 Standards applicable to generators and transporters of materials used in a manner that constitute disposal.

Generators and transporters of materials that are used in a manner that constitutes disposal are subject to the applicable requirements of Parts 262 and 263 of this chapter, and the notification requirement under Section 3010 of RCRA.

§ 266.22 Standards applicable to storers of materials that are to be used in a manner that constitutes disposal who are not the ultimate users.

Owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable provisions of Subparts A through L of Parts 264 and 265 and Parts 270 and 124 of this chapter and the notification requirement under Section 3010 of RCRA.

§ 266.23 Standards applicable to users of materials that are used in a manner that constitutes disposal.

Owners or operators of facilities that use recyclable materials in a manner that constitutes disposal are regulated under all applicable provisions of Subparts A through N of Parts 264 and 265 and Parts 270 and 124 of this chapter and the notification requirement under Section 3010 of RCRA. (These requirements do not apply to products which contain these recyclable materials under the provisions of § 266.20(b) of this chapter.)

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Subpart D—Hazardous Waste Burned for Energy Recovery

§ 266.30 Applicability.

(a) The regulations of this Subpart apply to hazardous wastes that are burned for energy recovery in any boiler or industrial furnace that is not regulated under Subpart O of Part 264 or 265 of this chapter, except as provided by paragraph (b) of this section. Such hazardous wastes burned for energy recovery are termed "hazardous waste fuel". However, hazardous waste fuels produced from hazardous waste by blending or other treatment by a person who neither generated the waste nor burns the fuel are not subject to regulation at the present time.

(b) The following hazardous wastes are not regulated under this subpart:

(1) Used oil burned for energy recovery that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste identified in Subpart C of Part 261 of this chapter. Such used oil is subject to regulation under Subpart E of Part 266 rather than this subpart; and

(2) Hazardous wastes that are exempt from regulation under the provisions of § 261.4 of this Chapter and hazardous wastes that are subject to the special requirements for small quantity generators under the provisions of § 261.5 of this Chapter.

§ 266.31 Prohibitions. [Reserved]

§ 266.32 Standards applicable to generators of hazardous waste fuel.

(a) Generators of hazardous waste fuel are subject to the requirements of Part 262 of this chapter except that § 266.36 exempts certain spent materials and by-products from these provisions;

(b) Generators who are marketers also must comply with § 266.34;

(c) Generators who are burners also must comply with § 266.35.

§ 266.33 Standards applicable to transporters of hazardous waste fuel.

(a) Transporters of hazardous waste fuel from generator to marketer, or from a generator to a burner are subject to the requirements of Part 263 of this Chapter, except that § 266.36 exempts certain spent materials and by-products from these provisions.

(b) Transporters of hazardous waste fuel from marketers to burners are not presently subject to regulation.

§ 266.34 Standards applicable to marketers of hazardous waste fuel.

Persons who market hazardous waste fuel are called "marketers". Marketers include generators who market hazardous waste fuel directly to a burner, and persons who receive hazardous waste from generators and produce, process, or blend hazardous waste fuel from these hazardous wastes. Persons who distribute but do not process or blend hazardous waste fuel are also marketers, but are not presently subject to regulation. Marketers (other than distributors) are subject to the following requirements: *Prohibitions:*

(a)-(b) [Reserved]

(c) *Storage.* (1) Marketers who are generators are subject to the requirements of § 262.34 of this chapter, or to Subparts A through L of Parts 264 and 265 and Parts 270 and 124 of this chapter, except as provided by § 266.36 of this Subpart for certain spent materials and by-products;

(2) Marketers who receive hazardous wastes from generators, and produce, process, or blend hazardous waste fuel from these hazardous wastes, are subject to regulation under all applicable provisions of Subparts A through L of Parts 264 and 265 and Parts 270 and 124 of this chapter, except as provided by § 266.36 of this subpart for certain spent materials and by-products.

§ 266.35 Standards applicable to burners of hazardous waste fuel.

(a) [Reserved]

(b) *Notification.* [Reserved]

(c) Burners that store hazardous waste fuel prior to burning are subject to the requirements of § 262.34 of this chapter, or to all applicable requirements in Subparts A through L of Part 264 or Part 265 of this chapter with respect to such storage, except as provided by § 266.36 of this subpart for certain spent materials and by-products.

§ 266.36 Conditional exemption for spent materials and by-products exhibiting a characteristic of hazardous waste.

(a) Except as provided in paragraph (b), hazardous waste fuels that are spent materials and by-products and that are hazardous only because they exhibit a characteristic of hazardous waste are not subject to the notification requirements of Section 3010 of RCRA, the generator, transporter, or storage requirements of Parts 262 through 265, 270 and 124 of this chapter.

(b) This exemption does not apply when the spent material or by-product is stored in a surface impoundment prior to burning.

Subpart E—[Reserved]

Subpart F—Recyclable Materials Utilized for Precious Metal Recovery

§ 266.70 Applicability and requirements.

(a) The regulations of this subpart apply to recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, paladium, irridium, osmium, rhodium, ruthenium, or any combination of these.

(b) Persons who generate, transport, or store recyclable materials that are regulated under this Subpart are subject to the following requirements:

(1) Notification requirements under Section 3010 of RCRA;

(2) Subpart B of Part 262 (for generators), §§ 263.20 and 263.21 (for transporters), and §§ 265.71 and 265.72 (for persons who store) of this chapter;

(c) Persons who store recycled materials that are regulated under this Subpart must keep the following records to document that they are not accumulating these materials speculatively (as defined in § 261.1(c) of this chapter);

(i) Records showing the volume of these materials stored at the beginning of the calendar year;

(ii) The amount of these materials generated or received during the calendar year; and

(iii) the amount of materials remaining at the end of the calendar year.

(d) Recyclable materials that are regulated under this Subpart that are accumulated speculatively (as defined in § 261.1(c) of this chapter) are subject to all applicable provisions of Parts 262 through 265, 270 and 124 of this chapter.

Subpart G—Spent Lead-Acid Batteries Being Reclaimed

§ 266.30 Applicability and requirements.

(a) The regulations of this Subpart apply to persons who reclaim spent lead-acid batteries that are recyclable materials ("spent batteries"). Persons who generate, transport, or collect spent batteries, or who store spent batteries but do not reclaim them are not subject to regulation under Parts 262 through 266 or Parts 270 or 124 of this Chapter, and also are not subject to the requirements of Section 3010 of RCRA.

(b) Owners or operators of facilities that store spent batteries before reclaiming them are subject to the following requirements.

(1) Notification requirements under Section 3010 of RCRA;

(2) All applicable provisions in Subparts A, B (but not § 264.13 (waste analysis)), C, D, E (but not § 264.71 or § 264.72 (dealing with the use of the manifest and manifest discrepancies)), and F through L of Part 264 of this chapter;

(3) All applicable provisions in Subparts A, B (but not § 265.13 (waste analysis)), C, D, E (but not §265.71 and

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§ 265.72 (dealing with use of the manifest and manifest discrepancies)), and F through L of Part 265 of this chapter;

(4) All applicable provisions in Parts 270 and 124 of this chapter.

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