

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Parts 148, 261, 268, and 271**

[FRL 5400-4]

RIN 2050-AE05

**Land Disposal Restrictions—
Supplemental Proposal to Phase IV:
Clarification of Bevill Exclusion for
Mining Wastes, Changes to the
Definition of Solid Waste for Mineral
Processing Wastes, Treatment
Standards for Characteristic Mineral
Processing Wastes, and Associated
Issues****AGENCY:** Environmental Protection Agency (EPA, the Agency).**ACTION:** Supplemental proposed rule.

SUMMARY: EPA has found that wastes from mineral processing can cause environmental damage to ground water and surface water when they are placed in piles or ponds. The damage is caused by such characteristics of the waste as corrosivity or high levels of toxic metals such as lead.

The intended effects of this proposal are to encourage safe recycling of mineral processing secondary materials by lifting regulatory obstacles, and to ensure that discarded materials are properly treated and disposed of. This would be accomplished by clarifying the regulatory distinctions between excluded recycling and waste management. To be excluded from the definition of waste, the materials must be managed to meet conditions such as being legitimately recycled, stored only for short periods, and not causing contamination. Mineral processing secondary materials would also be excluded from federal waste regulations if they are returned to beneficiation units and meet certain conditions. If the materials do not meet the conditions excluding them from being wastes, and they test hazardous, they must be treated to meet land disposal restrictions, which are newly proposed in this rule.

The EPA is also addressing a set of issues concerning mineral processing wastes which have been remanded by courts to EPA for further consideration. This includes retaining the Toxicity Characteristic Leaching Procedure as the test for evaluating the toxicity characteristic for mineral processing wastes, and readdressing the regulatory status of a number of miscellaneous mineral processing wastes.

In addition, EPA is proposing to significantly reduce the paperwork requirements associated with the Land

Disposal Restrictions rules that apply to hazardous wastes generally. Finally, this document proposes to exclude from RCRA jurisdiction two types of materials: processed scrap metal that is recycled, and shredded circuit boards destined for metal recovery that are managed in containers prior to recovery.

DATES: Comments on this proposed rule must be submitted by March 25, 1996.

ADDRESSES: To submit comments, the public must send an original and two copies to Docket Number F-95-PH4A-FFFFF, located at the RCRA Docket. The official address is: RCRA Information Center, U.S. Environmental Protection Agency (5305W), 401 M Street, S.W., Washington, D.C. 20460. Although the mailing address for the RCRA Information Center has not changed, the office was physically moved in November 1995. Therefore, hand-delivered comments should be taken to the new address: 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. (Also see the section under "Supplementary Information" regarding the paperless office effort for submitting public comments.) The RCRA Information Center is open for public inspection and copying of supporting information for RCRA rules from 9:00 am to 4:00 pm Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603-9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost \$0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information or to order paper copies of the Federal Register document, call the RCRA Hotline. Callers within the Washington, Metropolitan Area must dial 703-412-9810 or TDD 703-412-3323 (hearing impaired). Long-distance callers may call 1-800-424-9346 or TDD 1-800-553-7672. The RCRA Hotline is open Monday-Friday, 9:00 a.m. to 6:00 p.m., Eastern Standard Time. Information is also available on mineral processing issues from Van Housman at (703) 308-8419 or Steve Hoffman of the Industrial and Extractive Wastes Branch at (703) 308-8413. For information on treatment standards, call Anita Cummings of the Waste Treatment Branch at (703) 308-8303. For questions about the regulatory impact analysis, call Paul Borst of the Economics, Methods, and Risk Assessment Division at (202) 260-6713. For information on the proposed exclusions for scrap metal and shredded circuit boards, contact Ross Elliott of the Hazardous Waste Identification Division at (202) 260-3152. For information on

the capacity analyses, contact Bill Kline of the Capacity Programs Branch, phone (703) 308-8440. For other questions, call Sue Slotnick of the Waste Treatment Branch at (703) 308-8462.

SUPPLEMENTARY INFORMATION:**Paperless Office Effort**

EPA is asking prospective commenters to voluntarily submit one additional copy of their comments on labeled personal computer diskettes in ASCII (TEXT) format or a word processing format that can be converted to ASCII (TEXT). It is essential to specify on the disk label the word processing software and version/edition as well as the commenter's name. This will allow EPA to convert the comments into one of the word processing formats utilized by the Agency. Please use mailing envelopes designed to physically protect the submitted diskettes. EPA emphasizes that submission of comments on diskettes is not mandatory, nor will it result in any advantage or disadvantage to any commenter. Rather, EPA is experimenting with this procedure as an attempt to expedite our internal review and response to comments. This expedited procedure is in conjunction with the Agency "Paperless Office" campaign. For further information on the submission of diskettes, contact Sue Slotnick of the Waste Treatment Branch at (703) 308-8462.

This Federal Register notice is available on the Internet System through EPA Public Access Server at gopher.epa.gov. For the text of the notice, choose: Rules, Regulations, and Legislation; the FR-Waste; finally, Year/Month/Day. In addition, several technical background documents contained in the docket supporting this rule will be available on the Internet.

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Part One: Mineral Processing Issues

Summary of Rule's Contents on Mineral Processing Issues

EPA is proposing treatment standards under the land disposal restrictions (LDR) program for hazardous wastes from mineral processing operations. The treatment standards, when finalized, must be met in order to land dispose these hazardous wastes. In order to satisfy the terms of a consent decree,

EPA must propose these treatment standards by December 15, 1995. This rule, however, first proposes changes in the rules for which mineral processing secondary materials recycled within the mineral processing industry sector are solid wastes. If such materials are not solid wastes, the proposed treatment standards would not apply. This rule proposes changing the current definition of solid waste by providing a conditional exclusion for primary mineral processing secondary materials that are further processed within the industry. Under this approach, mineral processing secondary materials would not be solid wastes if certain conditions are met. This rule also proposes to rescind the current regulatory provisions applicable to reclamation of characteristic by-products, sludges, and spent materials for the primary mineral processing industry only. Also, this rule allows mineral processing secondary materials to be added to the feedstocks of a mining or mineral process that generates a Bevill exempt waste, without changing the exempt status of the resulting Bevill waste, provided that metals are legitimately being recovered and do not significantly affect the composition of the resulting wastes. However, mineral processing hazardous wastes directly disposed of with Bevill exempt wastes would be subject to Subtitle C controls.

EPA is proposing that the Toxicity Characteristic Leaching Procedure (TCLP) be the appropriate test for evaluating whether mineral processing wastes exhibit the toxicity characteristic. EPA is proposing to not list five smelting wastes as hazardous wastes, but rather rely on the wastes' hazardous characteristics to ascertain the wastes' hazardousness. EPA is proposing that iron chloride waste acid generated from the chloride-ilmenite process of titanium tetrachloride production be classified as a mineral processing waste. EPA is proposing that air pollution control dust and sludges generated from lightweight aggregate production be classified as mineral processing wastes.

Introduction to Mineral Processing Issues in This Proposal

In this supplemental proposal, EPA is proposing to establish land disposal restriction prohibitions and treatment standards for the newly identified hazardous wastes that were determined in EPA's 1989 rulemaking to be ineligible for excluded status under the Bevill Amendment. 54 FR 36592 (September 1, 1989). However, the threshold issue to be addressed is which mineral processing materials would be

subject to the prohibitions. This involves consideration of these threshold questions: (1) whether the materials are solid wastes if they are recycled; (2) whether they have excluded status under the Bevill Amendment because they are actually from beneficiation rather than from mineral processing; (3) whether they otherwise may have Bevill status and therefore be excluded; and (4) whether they are hazardous. These issues are discussed in the first four sections of this preamble, before the discussion of the land disposal prohibitions and treatment standards.

I. Whether Mineral Processing Secondary Materials Recycled Within the Industry Should Be Considered to Be Solid Wastes

A. Background

In July of 1988, the court in *Environmental Defense Fund v. EPA (EDF II)*, 852 F.2d 1316 (D.C. Cir. 1988), cert. denied, 109 S. Ct. 1120 (1989), ordered EPA to restrict the scope of the Bevill mining waste exemption as it applied to mineral processing wastes, to include only "large volume, low hazard" wastes. In response, the Agency proposed and promulgated several rules that redefined the boundaries of the Bevill exemption for mineral processing wastes. These rulemakings included explicit criteria for defining "mineral processing" and "large volume and low hazard." The rules also evaluated which specific mineral processing industry wastes were in conformance with these criteria and thus were eligible for the temporary exclusion provided by RCRA 3001(b)(3)(A)(ii).

This rulemaking process was completed with the publication of final rules on September 1, 1989 (54 FR 36592) and on January 23, 1990 (54 FR 2322). EPA's evaluations led to the finding that only 20 specific mineral processing wastes fulfilled the promulgated special wastes' high volume, low hazard criteria. The list is set out at 261.4(b)(7). The vast majority of mineral processing wastes did not meet both of the criteria and so were removed from the Bevill exemption.

All high volume and low hazard mineral processing wastes retained under the final Bevill mineral processing waste exemption were subjected to detailed study by EPA. The findings of this study were contained in a Report to Congress that was submitted to Congress on July 31, 1990 (Report to Congress on Special Wastes from Mineral Processing).

One of the findings of the study is that most of the mineral processing wastes

removed from the Bevill exemption appear to be characteristic for TC metals (D004–D011), corrosivity (D002), and/or reactivity (D003). EPA considers these wastes to be “newly identified” because they were brought into the RCRA Subtitle C system after the date of enactment of the Hazardous and Solid Waste Act Amendments on November 8, 1984. 55 FR at 22667 (June 1, 1990). In brief, at the time of the Third Third rule EPA had not performed technical characterizations of these newly identified wastes. The issue was further complicated by the fact that the list of non-exempt mineral processing wastes was not final at that time, because the regulatory determination for the 20 wastes studied in the 1990 Report to Congress had not yet been promulgated. The boundaries of the exemption have now been firmly established, and the Agency is ready to propose treatment standards for newly identified hazardous mineral processing wastes.

B. Introduction

A key and threshold question in this rulemaking is determining when mineral processing secondary materials returned to mineral processing operations for legitimate mineral recovery can be solid wastes, and hence within the jurisdictional reach of RCRA Subtitle C. If these materials are not solid wastes, then the LDR prohibitions proposed elsewhere in this rule would not apply. See 268. 1 (b) and 55 FR at 22061 (June 1, 1990). Nor would the remainder of the Subtitle C rules.

EPA has recently dealt with the question of whether recoverable secondary materials generated by and recycled within a single industry need be classified as solid (and potentially hazardous) wastes. We stated that recovered oil generated by any facet of the petroleum exploration, production, and retailing industry which is returned to the petroleum refining industry is not a solid waste. 59 FR 58936 (July 28, 1994). We recently proposed to extend this principle to a wider range of oil-bearing secondary materials. 60 FR 57747, 57753 (November 20, 1995). These rules are (or, with respect to the proposed rule, would be) conditioned on there being no management of the materials in land-based units.

The issue considered here is similar. Like the petroleum industry, mineral processing involves the extraction of a contained mineral value, which can occur in multiple steps. Processing of mineral-containing material from within the industry thus can have aspects of an on-going process justifying a conclusion that such materials need not be classified as solid wastes. A key

complicating factor here is that unlike most other industries, the mineral processing industry includes land-based units—piles and impoundments—which can function as components of its production process. Land placement of wastes and prevention of resulting harms is, of course, a prime focus of RCRA. RCRA section 1002 (b) (7). And of immediate consequence, any mineral processing secondary material classified as a solid and hazardous waste would be prohibited from placement into such a land-based unit under today’s rule unless first treated to meet the applicable treatment standard.

EPA is proposing in this rule that mineral processing secondary materials would not be classified as solid wastes when recycled legitimately within the mineral processing industry. This proposal would apply even when secondary materials are recycled via placement in land-based process units (including storage, staging, and preprocessing units). However, if land-based units are used, they must truly function as process units, not disposal units. The rule proposes conditions which would distinguish process units from disposal units.

There are a related set of issues to consider when mineral processing secondary materials are recycled in mining and beneficiation operations. These issues are discussed in section II. below.

C. Solid Waste Issues

1. Factual Background

The Agency studied over 200 mineral processing facilities that generate over 350 different secondary materials, some of which can be recycled and some of which cannot. The Agency has reviewed the various mineral processing steps that contribute to the production of a valuable product. In general, many mineral processing secondary materials are amenable to recycling. These recycling activities can sometimes resemble the type of on-going, sequential processing of metal values typical of a continuing production process. On the other hand, other operations are more tangential, and can involve secondary materials of lower value, held in units whose function is ancillary to the main process, with materials moving across less directly-related mineral processing industry sectors, with the materials being held for significant lengths of time before recovery occurs. As set out in the following paragraphs, there are in fact continuums relating to whether units holding secondary materials function as process or ancillary units; relating to the

value of the secondary material; and relating to the timing and location of recovery.

Ancillary operations are those steps that occur tangential to the main production but are not critical in the daily production of the product. Most mineral processing facilities operate 24 hours per day, continually taking in raw feedstocks and producing final products. Invariably there are other activities that must take place over time that are not part of the normal production but do contribute to overall production. These include surge ponds for process upsets, cooling and incidental settling ponds, incidental storage of vessel cleanouts and other slip streams. The Agency has found these ancillary operations commonly use land-based storage of mineral processing secondary materials. Indeed, some land-based units potentially serve a dual function of eventual permanent waste repository and processing unit. For example, some surface impoundments recover needed liquids (for example acids), but are also designed to allow settling of unused solids. The impoundment then becomes the permanent disposal unit for these solids when the unit stops operating.

The mineral processing secondary materials that are placed in land based units tend to have less value, and are less quickly returned to production than the more valuable mainstream feedstocks such as ore concentrate. This is in contrast to the more valuable materials used in main production processes, where secure bunkers, lined tanks, and enclosed buildings are utilized for material holding. For example, copper smelter bricks that contain low concentrations of copper are only periodically removed from a smelter. These smelter bricks may then sit on the ground miles from the smelter for months or years before being reprocessed. Other bricks, such as those generated daily from a copper convertor furnace that contain relatively high concentrations of copper, are stored near the smelter in bunkers or enclosed buildings and re-processed daily.

Many types of mineral recovery do not occur solely within the same facility. The Agency has also found that one mineral sector may generate a residue that can no longer be recycled on site so it is often shipped across different mineral sectors to recover various metals. For example, copper smelters generate acid plant blowdown high in lead concentration that can be further processed to eventually be recovered in a lead smelter. A lead smelter generates a copper-bearing

speiss that can be directly fed into a copper smelter.

Land-based process units in the mineral processing industry have the potential to cause the types of environmental problems associated with classic land disposal units. Indeed, this is not merely a potential but an actual problem. Part of the record for this proposed rule is a compendium of environmental damage cases caused by land-based process units within the mineral processing and mining industries (see Human Health and Environmental Damages from Mining and Mineral Processing Wastes, EPA Office of Solid Waste 1995).

The Agency nevertheless recognizes that such land-based units have historically been a significant part of the production processes typical of the mining and mineral processing industries. This is mainly a function of the large volumes of materials managed by this industry (or, in some cases, due to the heat of the material precluding any other type of immediate handling). Notwithstanding that mineral processing hazardous wastes are generated in quantities below the "high volume" threshold for distinguishing Bevill eligibility, many of these wastes are generated in volumes exceeding practical management in anything but land-based units. For example, copper smelter acid plant blowdown, which is frequently recovered for metal and acid value, can be generated in volumes on the order of tens of thousands of metric tons per year per facility. Similar examples are bertrandite thickener slurry from primary beryllium production and flue dust from molybdenum smelting. For this reason, the Agency regards the mineral processing industry atypical, and relatively unique in its use of land-based process units. Today's proposal thus should not be regarded as precedential for recognizing as process units land-based units in other industries, nor is the Agency aware of any claim that such units are used in other industries¹.

However, the Agency has also seen a trend for some mineral processing facilities to move away from land-based units and store more secondary materials in tanks or other units with more integrity. The Agency believes that this is a function of technological advances, process changes, and sometimes in response to increasing environmental liability.

¹ One significant exception is impoundments used by the pulp and paper industry to store black liquor. See 50 FR at 641-642.

2. Regulatory Background

This is not the first time that EPA has dealt with the question of which secondary materials generated by and recycled within the mineral processing sector are solid wastes. The existing regulatory definition of solid waste classifies metal recovery operations as a type of reclamation activity, and then states that certain secondary materials being reclaimed are, or are not, solid wastes depending on what the type of material is. Thus, any spent material being reclaimed is a solid waste, while only sludges and byproducts that are otherwise listed as hazardous wastes are solid wastes. Put another way, characteristic sludges and byproducts being reclaimed are not solid wastes, but any type of spent material is. See generally 261.2(c)(3) and 50 FR at 633-634, 639-641 (January 4, 1985). Other parts of the rule, however, do not subdivide among material types when classifying materials returned to an industrial process as feedstock. Under 261.2(e)(1)(i), for example, secondary materials that are used as ingredients in an industrial process to make a product are not solid wastes at all (unless the materials are reclaimed).

In addition to these rules, there are a series of judicial opinions which must be taken into account. In *American Mining Congress v. EPA*, 824 F. 2d 1177 (D.C. Cir. 1987) ("*AMC I*"), the court found that in some respects the rules exceeded the statutory grant of authority because, at least with respect to the mineral processing (and petroleum) industries, the rules asserted authority over secondary materials that were not "discarded". 824 F. 2d at 1193 ("discarded" being the key term in the statutory definition of solid waste, RCRA section 1004 (27)). Subsequent judicial opinions have sharply limited the scope of *AMC I*, so that the only absolute bar on the Agency's authority to define recycled secondary materials as solid wastes is to "materials that are 'destined for immediate reuse in another phase of the industry's ongoing production process' and that 'have not yet become part of the waste disposal problem' ". *American Mining Congress v. EPA*, 907 F. 2d 1179, 1186 (D.C. Cir. 1990) ("*AMC II*") quoting *AMC I*, 824 F. 2d at 1186.²

² The other cases which have similarly stressed this narrow reading of *AMC I* are *American Petroleum Inst. v. EPA*, 906 F. 2d 726, 741 (D.C. Cir. 1990); *Shell Oil v. EPA*, 950 F. 2d 741, 755-56 (D.C. Cir. 1991); *Chemical Waste Management v. EPA*, 976 F. 2d 2, 14 (D.C. Cir. 1992); *United States v. Ilco, Inc.*, 996 F. 2d 1126, 1131 (5th Cir. 1993); and *Owen Electric Steel Co. v. Browner*, 37 F. 3d 146, 149-50 (4th Cir. 1994).

EPA is proposing in this rule to both deal with remaining issues posed by the mandate in *AMC I*,³ and at the same time continue the process of improving the current federal regulatory definition of solid waste.⁴

D. Jurisdiction

The issue of jurisdiction over recycled secondary materials raises difficult issues, particularly so with respect to secondary materials managed in land-based units. Representatives of the mineral processing industry maintain that metal-bearing materials generated within and returned to a mineral processing operation are necessarily not wastes because they are not being literally discarded. They view these activities, for the most part, as the type of sequential processing of an initial raw material stated to be outside the Agency's jurisdiction by the court in *AMC I*.

Representatives of environmental groups argue that secondary materials placed in land-based units are necessarily wastes because the land placement itself is a type of disposal, and that the units are therefore disposal units. They cite *AMC II* in support.

EPA does not read the statute or the cases as necessitating either of these positions. First, the cases establish that "discarded", the critical statutory term, is ambiguous and hence susceptible to interpretation. Second, in interpreting the term, the Agency may take into account whether the materials "have become part of the waste disposal problem." In light of these principles, neither absolute position is compelled.

With respect to the industry position, there are significant elements of discard that can be associated with recycling of mineral processing secondary materials in land-based units. As described above, the practices can involve cross-sector transfer of materials, lack of immediate reuse, and utilization of land-based units for low value materials. These

³ The D. C. Circuit has in fact indicated by Order that the mandate of *AMC I* "does not . . . require [EPA] to revise its regulations." Order of November 4, 1992 in no. 85-1206 (although the same order indicates that the Agency is obliged to issue some type of rule addressing concerns raised by the petitioners in *AMC I*).

⁴ The Agency notes that there is an on-going effort, in conjunction with State regulatory agencies to reevaluate the current definition of solid waste and develop a new regulatory framework that will more clearly define RCRA jurisdiction and encourage the environmentally sound recycling of hazardous wastes. Today's proposal addresses the jurisdictional issues specific to secondary materials generated and processed within the primary mineral processing industry and is similar to the November 20, 1995 proposal in which the Agency addressed various secondary materials generated within the petroleum refining industry. 60 FR 57747.

units can also be performing some quasi-waste management types of functions, such as storage or restoring materials to a usable condition, that are ancillary to the production process. Most important, these land-based units can be part of the waste disposal problem. Land-based units, and impoundments in particular, have certain inherent indicia of discarding due to their inability to prevent releases of contained materials. RCRA section 1002 (b) (7); *AMC II*, 907 F. 2d at 1187; 53 FR at 521, 525 (Jan. 8, 1988). The environmental damage cases resulting from use of land-based units in the mineral processing sector bear out that use of these units for recycling can be part of the waste disposal problem.

It also should be noted that these units may have an element of associated discard irrespective of whether recycled materials placed in the units are considered to be solid and hazardous wastes. As described earlier, these units are often the ultimate repositories—i.e. disposal point—of the material in the unit which is not used in the process. This material builds up over time and may never be used.

With respect to the environmentalist position, EPA believes that there are jurisdictional constraints over materials that are destined for immediate reuse in another phase of the industry's ongoing production process. The mineral processing industry, of course, functions in order to extract mineral values from an initial raw material. This creates the need for particular sensitivity in a regulatory classification scheme to avoid interdicting the on-going processing of that initial material. It also proves too much to say that land placement *per se* makes such a material a solid waste. Placement of raw materials into land-based units, for example, does not invariably transform those materials into RCRA solid wastes nor the units into regulated units.

The Agency's view is that it is addressing a borderline classification situation here. As noted, there are aspects of quasi in-process material utilization here, particularly if involving on-site or intra-company higher-value material utilization and utilization of units proximate to the main processing activity.⁵ On the other hand, factors pointing toward discarding include the potential quasi-disposal nature of some of the units receiving the waste, namely those which are land-based and in some cases functioning in a manner ancillary to the process.

The Agency's proposed approach to classification is to set out conditions to address the most problematic classification issue: that of the land-based units. The conditions would be designed to assure that these units are designed and operated with sufficient integrity to prevent substantial discard, and so to function as process units which are not part of the waste disposal problem. Given the basic function of the industry to extract contained mineral values (including in sequential steps), the Agency is then proposing that so long as these conditions are satisfied, any within-industry transfer of secondary materials for legitimate mineral recovery would not involve solid wastes.

E. General Principles for Redefining Solid Waste Within the Mineral Processing Sector

The Agency's goal through this proposal is to simplify the regulatory definition of solid waste as it applies to the mineral processing industry in a manner that encourages within-industry secondary material recovery, does not interfere with metal recovery operations within this industry sector, but at the same time prevents land-based process units from serving as the means of discarding those materials. The simplification in the rules would come from eliminating the distinctions among spent materials/byproducts/sludges and between reclamation in mineral processing operations and direct use as a feedstock in other industries. The basic principle justifying these changes would be that, at least for this industry, distinctions among secondary material types are not especially meaningful. The critical factor that may involve discarding does not relate to the type of metal-bearing materials being recovered but to the type of unit involved in the recycling activity. In other words, whether the material generated by and recovered in a mineral processing operation is a spent material, sludge, or byproduct is of little consequence for determining if the material is being discarded. What matters is how that secondary material is managed, so that the chief focus of the definition can be on the types of units receiving the material.

Focusing on the types of management units involved in the recycling activity coincides with a critical feature of the test enunciated repeatedly by the courts: whether the materials have become part of the waste disposal problem. It also can lead to rules more directed at environmental problems than the current rules, and, for that reason, to

rules that are narrower in scope and easier to understand and to apply.

Thus, the basic principle proposed in this rule is that a secondary material generated by and recovered within the mineral processing industry sector is not a solid waste, provided it is managed in process units, not units from which the materials are discarded. Tanks, containment buildings, and containers would be considered automatically to be process units. With respect to land-based units, in distinguishing between process units and waste management units, the Agency believes it is appropriate to use certain criteria that indicate whether the unit is designed and operated to prevent substantial release of contained materials, consistent with the ostensible use of the units to hold valuable feedstock. Such criteria would include conditions relating to whether the unit is operated or designed in a manner that assures that excessive discarding is not occurring.

F. Proposed Regulatory Scheme

EPA is proposing that metal-bearing secondary materials that are generated by and recovered within the mineral processing industry sector are not solid wastes unless persons managing the wastes fail to comply with enumerated conditions relating to assuring that units managing the secondary materials function as process units, not as means of discarding the materials. These conditions are discussed in the following preamble subsections.

1. Generally Applicable Conditions

EPA is proposing the following set of conditions that would apply whether or not the mineral-bearing residue is managed in a land-based unit.

a. Conditions Related to Legitimate Recycling. The first conditions EPA is proposing attempt to assure that legitimate recycling is indeed occurring. As a threshold matter, EPA has considered the need for a sham recycling test under the circumstances presented by this proposed rule: within-industry transfers of materials to units that (in the case of land-based units) are adhering to conditions designed to ensure that the units are not part of the waste disposal problem. It might be argued that under these circumstances, assessing recycling legitimacy does not appreciably alter the risks posed (since the same units would be used for material management) and imposes some costs on legitimate recovery operations in the form of (at least) administrative inconvenience, and possible analytic costs. The Agency, however, continues to believe that an

⁵ See also EPA's further solicitation of comment on this issue in section I. H. below.

evaluation of legitimacy (in some form) is needed here as a matter of both law and policy.

Sham recycling is, of course, nothing more than waste disposal or waste treatment. (See *U.S. v. Self*, 2 F. 3d 1071, 1079 (10th Cir. 1993) (“[f]ollowing the 1985 amendment, the EPA’s distinction between legitimate and sham burning became significant, not only by continuing to determine the applicability of the recycling exemption, but also by determining whether a material is being burned or incinerated—i.e. burned for destruction—and, therefore, abandoned. . . .”).) Hazardous waste disposal is subject to certain legally-mandated requirements, among them a permit requirement, pretreatment of wastes before disposal, financial responsibility to assure proper unit closure, and minimum technology requirements, among others. RCRA sections 3005 (a), 3004 (d)–(g), 3004 (a), 3004 (o). There is no authority of which the Agency is aware that would allow it to waive these requirements here.

The Agency also notes that the line it is attempting to create in this proposal between land-based process units and disposal units is conceptually ambiguous. For this reason, the Agency believes that the assurance that the unit must only be used for materials that serve a legitimate function in the process is an important component of a set of conditions that meaningfully distinguishes process units from waste disposal units.

Under the current scheme, persons claiming to be recycling have the burden of showing, on a case-by-case basis, that they are recycling legitimately. 261.2 (f). EPA has set out factors which are likely to be relevant in assessing such claims. See, e.g., 50 FR at 638 (Jan. 4, 1985); 53 FR at 522 (Jan. 8, 1988); 56 FR at 7145, 7185 (Feb. 21, 1991). EPA has not quantified any of these factors, and the relative weight to attach to them (if relevant) can vary depending upon circumstances. This can lead to uncertainty as to the status of particular operations (potentially discouraging new recycling operations), and also to resource-intensive case-by-case evaluations. For these reasons, EPA is considering adopting certain quantitative legitimacy tests as rules for this industry sector. However, as a threshold matter, EPA is soliciting comment on whether such quantified tests are necessary here. Depending on its stringency relative to the factors discussed above, a quantified test would diminish the flexibility now available, and may also impose certain additional costs such as increased analysis. It

might also be argued that since the proposal covers only materials being recycled within the mineral processing industry sector, there is less need for a quantified standard. On the other hand, because this rule deals with better-defined and narrower circumstances than the entire panoply of recycling transactions covered by the solid waste definition, it is easier to develop a meaningful quantified test here. EPA believes that a quantified test may reduce regulatory uncertainty. EPA requests that commenters address this question, as well as the specific types of quantified tests discussed below.

EPA is proposing the following conditions to prevent sham recycling—i.e. disposal masquerading as recycling—of mineral processing secondary materials. The Agency sets forth in the preamble alternatives to these conditions and solicits comment on the appropriateness of these conditions and the alternative policy options.

i. *Concentrations of Recoverable Mineral and Acid*. First, the secondary materials must have recoverable amounts of minerals. Sham recycling may be occurring if minerals are not being recovered. 50 FR at 638; 53 FR at 522 (Jan. 8, 1988); 266. 100 (c) and 56 FR at 7143 (Feb. 21, 1991). In considering legitimacy for recoverable amounts of minerals, the Agency is concerned about secondary materials that contain such low concentrations of minerals that there is no reasonable expectation to believe that the minerals would end up in the product. The Agency requests comments on whether, as a threshold issue, the concentrations of minerals, etc. in the secondary material should be a significant factor in establishing the legitimacy of the recycling activity. While the Agency currently uses qualitative factors in assessing legitimacy, it may be possible to develop a quantitative test which provides for greater certainty and may be a low cost method to establish legitimacy. The Agency seeks comments as to whether any of the following quantitative legitimacy tests meet this goal.

Ore Cutoff Grade. An alternative to determine the presence of recoverable amounts of minerals is whether the secondary material has a mineral content equal to or greater than the concentration of mineral found within the facility’s ore cutoff grade. This cutoff grade is typically based on an economic decision of whether or not to mine a particular grade of ore. By definition, mineral concentrations above this cutoff grade are recovered in the product. The

Agency solicits comments on the ore-cutoff grade test for legitimacy.

Normal Operating Range. Another alternative would be based on whether the mineral content in the secondary material is equal to or greater than the concentration of minerals found within the facility’s normal operating range. EPA believes it is a common industry practice for a facility to establish a metallurgical profile of feedstock concentrations of desired metals and other properties for particular mineral processing units. This is often referred to as the normal operating range of the mineral processing unit, which takes into account fluctuations over time of metal content in feedstocks. The Agency seeks comment on these alternatives.

Efficiency Standard. EPA has found that both mineral processing units and beneficiation units are designed to recover a high percentage of available minerals. Recovery efficiencies of over 90 percent of the mineral value of interest are commonly achieved. While these processes usually achieve a high efficiency in the percentage of minerals recovered, a certain percentage of the minerals in the feedstock is unavoidably lost. The standard would be that the efficiency of recovering the mineral in the secondary material must be equal to or greater than the efficiency of recovering the mineral value of interest in the virgin feedstock, regardless of the amount of mineral in the secondary material. The advantage of this approach is that the facility can re-process secondary materials with relatively low mineral concentrations if they can show that the minerals are being recovered to the same extent that minerals are recovered in virgin feedstocks. The Agency seeks comment on this alternative.

Economic Test. Under this approach, it would be economical, and therefore legitimate, if the added value gained from recovering the secondary material is greater than the incremental cost of processing the secondary material on a per unit basis. Sham recycling would be indicated if an operator were unable to show that the recycling activity were economical, taking into account both the value of the minerals recovered and any cost savings of recycling (including some reduced treatment and disposal costs). Of course, if all that is occurring is avoidance of disposal or treatment costs, the activity would not be recycling. 50 FR at 638. This alternative would offer substantially greater recycling opportunities to operators. EPA notes, however, the Agency’s experience with quantified economic tests for legitimate recycling are limited, due in part to lack of Agency expertise

in evaluating operating costs and financial transactions and companies' understandable reluctance to divulge financial information. See 48 FR at 14481 (April 4, 1983). EPA solicits further comment on use of this economic test.

In the event the Agency were to adopt a quantified test, EPA solicits comment as to whether a variance mechanism should be allowed for a facility which makes a valid showing of legitimate recycling based on its individual circumstances. This would be similar to existing § 260.31 which provides for such variances from other provisions of the solid waste regulatory definition. Factors that could be considered in evaluating such a variance would be the extent to which the material is handled to minimize loss, the effectiveness of the material in comparison to the virgin material it is replacing, whether the material contains hazardous constituents that do not contribute to the recovery process and the concentrations of such hazardous constituents, and in general, how the material contributes to the recovery process. See 50 FR at 638; 53 FR at 522.

A special case arises when certain materials, which are essentially devoid of recoverable minerals, are recycled. The issue is whether water itself with no recoverable minerals should qualify under a legitimacy test. By setting this standard, EPA is concerned that unnecessary hazardous constituents would be introduced in the process and ultimately be released into the environment. However, the Agency has historically encouraged facilities to recycle wastewaters, and has developed categorical effluent guidelines, which in many cases necessitate wastewater recycling. Further, reconstituting and recycling of low level acid streams has also been recognized as a beneficial operation. The Agency believes that acidic solutions can similarly be legitimately recovered for the value of the acid (e.g., acidic solutions from copper smelting and phosphoric acid production).⁶ Although these wastes may not be "equivalent" replacements for raw materials, there may be cases where such recycling provides considerable economic and/or environmental benefits. EPA solicits comments on approaches which could include such recycling practices as legitimate.

ii. *Constraints on Nonrecoverable Hazardous Constituents.* As a generally-

⁶ EPA in this context will use the term mineral to mean all metals, inorganic non-metals (e.g., lanthanides, boron, lithium, phosphorus), and acidic solutions produced from primary mineral processing.

applicable indication, EPA has suggested that sham recycling may be occurring if hazardous constituents different from those normally present in the customarily-used raw materials are present in secondary materials and do not contribute to the recycling process. 53 FR at 522 (Jan. 8, 1988); 56 FR at 7185 (Feb. 21, 1991). Similarly, EPA has also suggested that an inference of sham recycling is possible if non-contributing toxic constituents are present significantly in excess of those normally present in virgin materials. 50 FR at 638; 53 FR at 522. The reason for the inference is the possibility that the process may be a means of treating and discarding the excess toxic.

EPA solicits comment on whether such indications are appropriate in mineral processing and whether there is a need to quantify any such test as part of this rule. For example, if the Agency were to adopt an economic legitimacy test as described in subsection i, should this be an exclusive test such that there is no need to further inquire about the presence of nonrecoverable hazardous constituents.

Because the rule would be limited to secondary materials generated within the mineral processing sector, the possibility of substantial concentrations of "non-indigenous toxics"—non-contributing hazardous constituents not found in the usual virgin feedstocks—appears remote. The possibility of build-up of indigenous toxics is a real one, but in many cases would not be an indication of sham recycling. The very act of mineral processing increases the concentration of both the desired mineral and undesired contaminants in a residue. At the least, so long as the ratio of desired to undesired metal remains roughly the same as it is in the virgin feedstock to a process unit, a finding of sham recycling would be unwarranted. For example, if a unit normally takes in a feedstock of 5% copper (desirable) and 2% arsenic (undesirable), then a mineral processing secondary material having 10% copper and on the order of 4% arsenic would still be within the normal operating range of the unit.

EPA notes that, like other industries, the mineral processing and beneficiation sectors can use secondary materials as substitutes for finished commercial products used in the process. For example, a secondary acid could be used in lieu of virgin acid under 261.2(e)(1)(ii). This is in addition to the case where acid is part of the mineral value and qualifies for the legitimacy test as described in subsection i.

EPA is concerned, however, of the possibility of abuse. There are documented instances, for example, where "feedstocks" consisting of less than 1% desired mineral and over 50% unwanted contaminant—a ratio well outside that in the normal operating range—have been allegedly 'recycled'.⁷ This is apparently disposal. The Agency thus is seeking comment as to whether a ratio test—whereby the mineral processing secondary materials would have to have a mineral/contaminant ratio that is within one order of magnitude of the mineral/contaminant ratio found in the feedstock—would be adopted to rule out this type of abuse. A baseline ratio would need to be established, which is often performed as part of the startup operations of a unit. Weekly or monthly testing of desirable to undesirable contaminants may be reasonable for industries that perform assays of these types of materials on a daily and sometimes hourly basis.⁸ (See Office of Solid Waste, U.S. EPA, Gold, Copper, Lead/Zinc, and Iron Technical Resource Documents (July 1994)). The Agency realizes that some variability in testing frequency may be warranted depending on the type of unit and operation. The Agency is soliciting comment on the frequency of testing mineral processing secondary materials to ascertain whether the constituents fall within the normal operating range.

The Agency is not proposing any specific means of demonstrating that mineral processing secondary materials are within this normal operating range. Rather, consistent with existing 261.2(f), a facility would have to demonstrate, if challenged, that the desired minerals in the secondary material are being legitimately recycled.

iii. *No speculative accumulation.* Consistent with existing rules for all other types of secondary material

⁷ See EPA Site Visit Reports to Mines and Mineral Processing Facilities, Office of Solid Waste (1995); Human Health and Environmental Damages from Mining and Mineral Processing Wastes, EPA Office of Solid Waste (1995); Mineral Processing Facilities Storing Mixtures of Exempt and Non-Exempt Wastes In On-Site Waste Management Units, EPA Office of Solid Waste (1995); Identification and Description of Mineral Processing Sectors and Waste Streams, EPA Office of Solid Waste (1995).

⁸ The necessity for such a test should also be considered if the Agency adopts the type of comparison test discussed below in section II.B. Under this test, wastes significantly affected by the addition of non-beneficiation materials to a beneficiation process could lose their Bevill status because they would no longer be the type of waste for which the Agency had determined that Bevill status was appropriate. Were EPA to adopt this test, it would seem that the test would constrain the use in Bevill process units of secondary materials with concentrations of hazardous constituents significantly different from those found in the customary raw materials.

recycling, EPA is proposing that there be no speculative accumulation of mineral processing secondary materials. "Speculative accumulation" is a defined term (see 261.1(c)(8)) meaning essentially that 75% of a given material present on the first day of the calendar year be recovered⁹ by the end of the year, or what remains is a solid waste. The rules also provide means of extending the one-year period in appropriate circumstances, such as a change in market conditions. 260.31(a). The burden of showing that sufficient amounts of material have been recovered is on the person claiming the exclusion 261.2(f).

b. *One-time Notification.* EPA is further proposing that mineral processing secondary materials generating and recovery facilities provide EPA (or an authorized state) with a one-time notification which describes the mineral processing materials to be recycled and the recycling process. The one-time notification would be submitted by the operator of the land-based unit and would generally describe how mineral processing secondary materials are being recycled, the location of the activities, and the annual quantity being placed in land-based units. EPA expects this notification to be general in nature and to provide short paragraph-length descriptions.

An amended notification would not be required unless the facility has significant process changes affecting the generation, location, or recovery of mineral processing secondary materials.

c. *Conditions Relating to Groundwater Protection.* EPA is proposing that a land-based unit receiving mineral processing secondary materials not contribute to significant groundwater contamination through discard. The general approach EPA is proposing is to set out in the rule an environmental performance standard that would indicate that units cannot be used as a means of discard and hence be part of the waste disposal problem. This condition could be met in one of three ways. First, a facility could demonstrate that it is not polluting groundwater at levels exceeding the Maximum Contaminant Level for any hazardous constituent likely to be in the secondary materials (the toxic metals listed in Appendix VIII of Part 261 and

cyanide) at a designated location. Compliance would be demonstrated by means of groundwater monitoring. In the event a release exceeds the MCL, the unit would be required to perform unit-specific corrective action to redress the release. Second, a facility could design units in a prescribed manner so as to obviate the need for any such demonstration. Third, a facility could obtain a determination from an authorized state or (in unauthorized states) from the Regional Administrator, that a management practice or alternative design provides adequate assurance that the unit provides effective containment and will not become part of the waste disposal problem through discarding. EPA expects that states may deviate somewhat from the conditions but only after having made ad hoc determinations that alternative requirements are protective.

We discuss below each of these alternatives in turn.

i. *Ground Water Protection Standard. Levels of Contamination.* EPA is proposing to use exceedances of a ground water protection standard as one measure of significant discarding. This standard would apply to the hazardous constituents that are likely to be present in mineral processing wastes, namely the metal constituents in Appendix VIII of Part 261 (antimony, arsenic, barium, beryllium, cadmium, chromium(total), lead, mercury, nickel, selenium, silver, and thallium, vanadium) and cyanide. The corrosivity standard in § 261.22 also applies (an aqueous solution with a pH equal to or less than 2 or equal to or greater than 12.5), as well as the ignitability standard in § 261.21 (some phosphorous and lithium-bearing mineral processing secondary materials spontaneously combust).¹⁰ This standard would operate for each of the regulated constituents as follows: (1) if an MCL is available, the MCL is the ground water protection standard unless background concentrations already exceed the MCL, in which case the background level would become the standard (so that the unit would not contribute further to the contamination); (2) in the absence of an MCL, a state or tribal risk-based number (i.e., 10 times the state or tribal ground water protection number) would be used for

the regulated constituent (see 258.55(i); in an unauthorized state, an appropriate level could be provided by the EPA Region under the third alternative, as discussed below. The level for cyanide would be 0.2 mg/l as determined by the weak acid dissociable (WAD) method.¹¹

The MCL serves as a measure of acceptable drinking water and is the traditional measure used by the Agency in its various groundwater protection programs. (See 258.55 and .56; 264.94)

This would be measured at a designated location, within 150 meters of the unit boundary. This is the maximum distance for a point of compliance allowed under the Subtitle D landfill rules. See 56 FR at 50996. A land-based unit receiving hazardous mineral processing secondary materials which causes this much groundwater contamination and, as explained below, does not correct the source of contamination, can realistically be viewed as part of the waste disposal problem.

Groundwater Monitoring. Under this alternative, the Agency is further proposing that groundwater monitoring be required to assess the presence of regulated constituents in the groundwater. EPA is proposing that the ground water monitoring and corrective action regulations for municipal solid waste landfills (MSWLFs) under the Subtitle D program (Solid Waste Disposal Facility Criteria, 56 FR 50978, October 9, 1991) be adopted with modifications for the monitoring and remediation. In referencing the MSWLF rule for ground water monitoring and corrective action activities for units managing mineral processing secondary materials, the Agency is proposing to adopt only those provisions that are self-implementing. Thus, any provision of the MSWLF rule requiring state approval would *not* apply.¹²

If ground water monitoring is triggered, owners or operators are required to undertake a monitoring program under § 258.55 of the MSWLF rule to monitor for only those Appendix 8 metals constituents and cyanide that are present in the hazardous mineral processing secondary material prior to its placement in the unit.

The ground water monitoring system must include at a minimum one

¹¹ This is based on Nevada State Law N.A.C. § 445.24342 and § 445.132.

¹² The flexibility provided in the subtitle D rule to account for site specific circumstances is provided here as the third alternative means of showing that a land-based unit is functioning as a process unit, namely a site-specific determination from an authorized state of EPA Region that a specific unit can be designed or operated in a manner different than that set out in the groundwater protection or design alternatives.

⁹ EPA has received comment asking whether the speculative accumulation provision can be satisfied if initially accumulated materials are removed for disposal rather than recycling during the course of the year. This is not the Agency's reading of the provision, nor would such a reading be consistent with the purpose of the provision. The definition in fact states that "the 75 percent requirement is to be applied to each material of the same type . . . that is recycled in the same way . . ."

¹⁰ In its September 1, 1989 rule (54 FR 36592, 36600), EPA stated that it did not believe that mineral processing wastes were particularly ignitable or reactive. EPA has since found that certain mineral processing wastes are indeed ignitable and reactive (see Multi-Media Compliance Investigation of FMC Corporation, Phosphorous Chemicals, EPA National Enforcement Investigations Center (August 1994).

upgradient well and three downgradient wells. The downgradient wells must be located not further than 150 meters from the unit boundary. The groundwater monitoring system must be capable of ascertaining the background quality of groundwater and assessing the quality of groundwater within 150 meters of the unit boundary, as certified by a qualified groundwater scientist. See 258.51 (a), (b), and (d).

In another proposed departure from the MSWLF rule, today's proposed rule does not require facilities to scan for the § 258 Appendix II constituents. Rather, owner/operators under today's rule would be required to move directly to assessment of corrective measures upon detecting that releases are exceeding the ground water protection standard. The Agency initially believes that given the limited number of inorganic constituents present in these mineral processing units, as opposed to the variability of contaminants often found in a municipal solid waste landfill, a second level of assessment would not be necessary.

EPA also solicits comment on an alternative to groundwater monitoring proposed in the Phase IV rule for impoundments receiving decharacterized wastewaters. There, the Agency proposed that groundwater monitoring would be unnecessary if concentrations of hazardous constituents in the impoundment were less than 10 times the MCL (or alternative level). This proposal rested on the theory that given normal dilution and attenuation, it would be unlikely that any groundwater protection standard would be exceeded under these conditions. 60 FR at 43669 (August 22, 1995). EPA is uncertain that land-based mineral processing units would ever be able to satisfy this condition. At least some of the metal levels would likely exceed 10 times the MCL in the unit since these often are some of the target metals being recovered by the facility. EPA nevertheless solicits comment on this alternative.

EPA also requests comments on whether alternative downgradient well location, such as at the facility boundary (i.e., on an across-the-board basis rather than on a case-by-case basis, as provided in the third alternative discussed below), should be considered under this alternative. For example, criteria based on the potential for exposure to humans or sensitive ecosystems, and other site-specific factors such as topography, climate, and hydrogeology, might provide greater efficiency in the use of monitoring resources. However, these criteria must

be weighed against the preventative goals of RCRA. EPA seeks comment on the appropriateness of this alternative.

Corrective Action. In the event of a release from the unit exceeding the groundwater performance standard, corrective action would be triggered and the facility would have to remediate the releases so that the standard is no longer exceeded. In other words, the facility would have to perform unit-specific corrective action, namely interdict the released material and repair the leaking unit. This condition is consistent with the distinctions between process and waste management units: if there are releases of valuable feedstock materials from a process unit, one would expect the facility to capture releases of its inventory. Conversely, allowing such releases to continue indicates that the unit is being used to discard the mineral processing secondary material and is doing so in a manner that is part of the waste disposal problem.

EPA is *not* proposing that the land-based unit becomes a waste management unit in the event of an exceedance of the groundwater protection standard. Rather, EPA is trying to create an incentive for a facility to rapidly capture released material and prevent further leakage. (Cf. 261.33 and 55 FR at 22671 (June 1, 1990) (released commercial chemical products are not solid wastes if captured and put to some productive use)). On the other hand, depending on the extent, frequency and time to remediate releases to groundwater from the unit, the Agency would retain the option of classifying the unit as a regulated waste disposal unit.

Thus, the ability of a facility to capture a released material via a corrective action regime indicates that the unit is functioning as a process unit, and is not operating in a manner causing the mineral processing secondary material input to become part of the waste disposal problem.

As discussed above, today's rule would also state that once it is determined that corrective measures are necessary, the facility would be required to implement the following: (1) Cease placement of mineral processing secondary materials into the unit as soon as is practical, and (2) use appropriate design or management practices which eliminates the threat of further leaks. Mineral processing secondary materials could be placed back into a unit after it has undergone successful corrective action. If the owner/operator has taken action to address minor releases and can affirm that the unit is again meeting the

groundwater protection standard, no further corrective action need be taken.

In the event further remediation beyond reaching the groundwater protection standard is necessary, the Agency would invoke case-specific remediation authorities to require such a remedy. In addition, as noted above, the severity of a release could also be a factor in whether to continue to classify the unit as a process unit.

ii. *Alternatives Based on Unit Design.* EPA is proposing as a second alternative that any surface impoundments otherwise covered by the proposal that are constructed to have the transmissivity equivalent of a 40 mil geomembrane liner on a surface of 12 inches of 10–5 hydraulic conductivity soil would be considered to be process units and would not have to demonstrate compliance with the groundwater protection standard. EPA is also proposing that for solids in piles located on concrete, asphalt, or soil any of which have the equivalent transmissivity of three feet of clay with 10–7 cm/sec hydraulic conductivity would not have to demonstrate compliance with the groundwater protection standard. If any free liquids are present in the solids pile, then all standards applicable to surface impoundments would be applicable for that pile. The Agency believes that this is a protective standard for piles based in part on § 264.251. The Agency further believes that most solids process piles from mineral processing meet or exceed this standard. (See Office of Solid Waste, U.S. EPA, Gold, Copper, Lead/Zinc, and Iron Technical Resource Documents (July 1994); Site Visit Reports to Mines and Mineral Processing Facilities, Office of Solid Waste (1995); Mining Waste Management, California Mining Association).

iii. *Site Specific Determinations from an Authorized State or By an EPA Region.* EPA believes that the groundwater performance standard or design conditions set out above would assure that a land-based unit is not operating as a means of discarding. However, EPA further believes that other more appropriate conditions can be developed on a unit-by-unit basis to address site specific conditions. It is critical that the flexibility to account for these circumstances be available. The Agency has repeatedly recognized that "ground water is a uniquely local resource due to the ease with which small sources can affect it, and the impact that use and hydrogeologic characteristics can have on its quality." Protecting the Nation's Ground Water: EPA's Strategy for the 1990's (USEPA

1991). The need for the flexibility to take individualized action also is inherent in the number of variables (such as depth to groundwater, rainfall, soil types, and site-specific hydrogeological factors) that can influence the possibility and extent of groundwater contamination. EPA is proposing to allow for this necessary flexibility by providing that a facility can obtain an individual determination from an authorized State, or from a Regional Administrator, that its mode of operation provides adequate assurance that the unit is not serving as a mode of discard. Moreover, in States that have existing groundwater protection programs that apply to a particular unit, EPA is proposing that once the program is authorized for purposes of this rule, State determinations made pursuant to that program would serve as an adequate measure that land-based units receiving mineral processing secondary materials are not serving as a means of discard.

EPA thus is proposing that authorized state programs can operate in lieu of the federal conditions pertaining to excessive leakage where the state program addresses the mineral processing land-based unit and, on a case-by-case basis, is protective. As explained more fully below in the preamble section on State Authorization, EPA would evaluate during the authorization process whether the state program has the legal authority to control leakage to groundwater from these units, has resources to implement these authorities, has the overall object of protecting public health and the environment from leakage to groundwater, provides means for detecting and responding to groundwater contamination, has enforcement authorities and capabilities adequate to implement and to monitor compliance with any requirements adopted pursuant to the state program, and provides for public participation in the process of developing requirements for particular land-based units. (As stated in the section on authorization below, these authorities need not be provided solely, or in part, by State RCRA authorities. Plenary state authorities for aquifer protection, or over mining activities generally, for example, would be acceptable and appropriate.)

Factors typically to be considered by authorized States, or EPA Regions, in making site-specific determinations would include those set out in the environmental performance standard found at 267.10. These include the volume and physical and chemical

characteristics of the materials in the unit, including potential for release; hydrogeologic characteristics of the unit and surrounding soils; quantity, quality and directions of groundwater flow; existing quality of groundwater; and potential for damage to humans and to the ambient environment. Pathways other than releases to groundwater also could be taken into account.

The result of a site-specific determination thus could be that a particular unit can be determined to be a process unit without satisfying some or all of the conditions in the groundwater protection or the design alternatives described in the previous sections. For example, an authorized State or EPA Region could determine that a unit located in an arid region with a remote water table and distant potential receptors could have a different compliance point, compliance standard or monitoring regime than set out in the groundwater protection alternative. Some type of design different from those set out in the proposed design alternative also could be determined to be adequate. Any such determination would, of course, have to be justified based on the basis of the administrative record developed in support of the determination, taking into account the factors set out in 267.10 which are relevant in the particular determination, and after considering any public comment received.

d. *Issues Related to Unit Closure.* As discussed earlier, land-based units in the mineral processing industry can serve as the ultimate repository of the unused materials left in them when the unit stops operation. EPA is soliciting comment on whether there should be a mandatory condition that all process units must remove hazardous wastes remaining in the unit at the time the unit stops operation. The time for removing hazardous wastes could not exceed 90 days from when the unit ceases operation. This condition would be analogous to the requirement presently found at 261.4(c) whereby hazardous wastes that are generated in tank and container process units are exempt from regulation until they are removed from the unit or until 90 days after the unit has ceased operating.

The basis for such a condition is that allowing hazardous waste to build up in and remain in the unit after the time the unit is a disposal unit is inconsistent with designation of such units as process units. See 261.4(c). They would be serving a classic hazardous waste disposal function and could consequently be regarded as part of the waste disposal problem and within the Agency's Subtitle C jurisdiction. EPA

notes further, moreover, that it is the Agency's experience that hazardous metals can be removed while the unit is operating so that a facility can assure that hazardous wastes are not present in the unit when it ceases operation. This appears to serve the goal of hazardous waste minimization through recycling, RCRA § 1003(b). EPA also solicits comment on the feasibility of such practices.

e. *Issues Related to Basic Unit Integrity.* EPA is soliciting comment on whether an additional condition of basic integrity is warranted. Here, EPA desires to assure that land-based units function as process units in that the units have basic design integrity and is not indiscriminately leaking or otherwise dispersing their contents. The general theory is that a unit of any type which is not designed to prevent wholesale releases is serving as a disposal unit. For example, a raw material tank without a bottom could be viewed as a disposal unit because its contents would necessarily be disposed every time material is placed in the tank. Similarly, a land-based unit designed so that significant portions of materials in the unit will escape need not be classified as a process unit. Put another way, secondary materials put into land based units designed so that there will be significant releases of those materials can be viewed as wastes because of the significant element of discard inherent in the defective design.

The Agency believes that the land-based process unit should be designed to contain the secondary materials placed in it. Land based process units vary in design, liners, and materials of construction. For example, some units are located on solid bedrock, some use compacted clay, while others use 40-mil or greater synthetic liners on top of impermeable soils. Agency review of various types of mine waste management units has found that most are designed to meet at least 10–6 cm/sec permeability, using various methods of soil thickness and compaction.¹³

For these purposes, basic integrity would mean that the land-based unit meets the equivalent permeability standard of 10–6 cm/sec using 3 feet of compacted clay. An infiltration pond, or a unit that is lined with compacted silt with a hydraulic conductivity of 10–5 cm/sec thus would not meet EPA's basic integrity standard. The consequence of failing this design integrity standard would be that the hazardous secondary materials received by the unit would be

¹³ Ian P.G. Hutchison, Richard D. Ellison, Mine Waste Management, California Mining Association, Lewis Publishers Inc. (1992).

solid and hazardous wastes, and the unit itself would be a type of disposal unit. This accords with what would actually be occurring: wholesale and foreseeable release of the materials due to the unit's design.

This basic unit integrity would be an additional condition to the other conditions of the groundwater performance standard as described in subsection c. i and also in addition to the *ad hoc* determinations made by the state or EPA region as described in subsection c. iii. However, this basic unit integrity standard would not be applicable to the unit design alternative in subsection c. ii since the integrity of this alternative already surpasses the basic integrity test.

G. Units and Secondary Materials Outside the Scope of this Proposal

1. Wastewater Treatment Impoundments

In distinguishing between process units and waste management units, EPA is proposing that wastewater treatment impoundments not qualify as process units. Thus, any surface impoundment whose discharge is ultimately regulated under the Clean Water Act's NPDES regime, including units subject to zero discharge requirements and emergency bypass permit conditions, would not be eligible for consideration as a process unit. Even if some portion of the mineral processing secondary material going into such units may be recycled back into a production process, the essential purpose of these units is waste management rather than production. See 59 FR at 58936 (July 28, 1994) where EPA made similar findings regarding wastewater treatment units in the petroleum refining industry. The D.C. Circuit has in fact held that wastewater treatment impoundments can be classified as waste management units, notwithstanding that all of the entrained solids in the unit are eventually recycled as feedstock. *AMC II*, 907 F. 2d at 1186-87.

2. Secondary Materials Generated by Outside Industries and Listed Hazardous Wastes

The National Mining Association (NMA) has proposed that the Agency provide an exclusion for metal-bearing secondary materials from outside industries (e.g., electroplating sludge from the metal finishing industry, F006) that are processed within the primary mineral processing industry. The focus of this request is the reclamation of listed hazardous wastes, since characteristic byproducts and sludges being reclaimed are currently excluded

from the definition of solid waste. The NMA's position is that, in general, these listed hazardous wastes can have recoverable levels of metals similar to normal feedstock, that the management of these materials is environmentally sound, and that EPA should encourage this type of recycling.

First, as a prudential matter, such a request is beyond the scope of this rulemaking. EPA is proposing to amend the solid waste definition specifically for the mineral processing industry at this time in order to most accurately set out the scope of the land disposal prohibition and treatment standard for mineral processing wastes. The schedule for establishing these LDR standards is established in a proposed consent decree and leaves the Agency very little time to complete the task. Since non-mineral processing materials would not be subject to these LDR standards, EPA sees no need to consider the issue at this time. It is more appropriately dealt with under the Agency's comprehensive efforts to amend the regulatory definition of solid waste described in the last paragraph of this preamble section.

The Agency notes further that, in many cases, metal-bearing secondary materials (including wastes that have been specifically listed as hazardous wastes) from other industries may be suitable feedstocks to a metal recovery process and that one goal of RCRA is to encourage environmentally sound recycling. The Agency also notes, however, that as a legal matter the processing of wastes generated by a separate industry is a different situation than the "continuous on-going" processing of secondary materials within the same industry, lacking the element of continuity of production inherent in the continual multi-step processing of virgin ores into a variety of end products (see *API v. EPA*, 906 F. 2d at 741-42). The recovery of metals from hazardous wastes generated by an outside industry thus more arguably involves the management of wastes.

In addition to limiting the scope of materials to those secondary materials generated within the primary mineral processing industry, the Agency is also proposing that secondary materials generated within the mineral processing industry that have specifically been listed as hazardous wastes (e.g., K061—emission control dust/sludge from the primary production of steel in electric furnaces, and K088—spent potliners from primary aluminum reduction) remain subject to regulation as hazardous wastes, even when processed within the mineral processing industry. The process of listing a secondary

material as a hazardous waste includes an evaluation of the manner in which the material is managed and the potential for the material to cause harm to human health and the environment. When a secondary material is found to be typically managed through recycling, the Agency evaluates whether such processing constitutes continuous on-going manufacturing or waste management. In other words, by listing a secondary material as a hazardous waste, the Agency has made a specific determination that the material is a solid waste, even when recycled. The Agency has in fact evaluated each listed waste against the criteria set out at 50 FR at 641 and 53 FR at 526-27 and determined that all of the listed wastes should still be classified as solid and hazardous wastes when recycled by reclamation. (See Background Document to the January 8, 1988 proposed rule "Summary Table: Effect of the Revised Solid Waste Definition on Whether Reclaimed Sludges and By-Products are Solid Wastes" F-88-SWRP-S0006).

While EPA is not taking the position that the regulatory status of a material listed as hazardous waste is beyond reconsideration, the Agency is stating that such a review is beyond the scope of this rulemaking. The proposed modification to the definition of solid waste is very broad, potentially allowing for the cross-transfer of secondary materials from considerably different mineral processing sectors. (The Agency notes that in this proposal, EPA is putting forward and seeking comment on an expansive definition of "mineral processing industry"—comprising over 40 mineral sectors¹⁴—in order to encourage and facilitate the protective recycling of valuable constituents from secondary materials that would otherwise be discarded, an approach that EPA believes to be at the Agency's discretion, and that goes beyond the concept of secondary materials that are "destined for beneficial reuse or recycling in a continuous process by the generating industry itself" enunciated by the court in *AMC I*, 824 F. 2d at 1186. Therefore, the Agency believes that the exclusion should not, in this rulemaking, extend to those materials that have already been specifically evaluated and defined by rulemaking as solid wastes subject to RCRA Subtitle C regulation. Thus, the scope of the proposed exclusion for secondary materials generated and processed

¹⁴ A detailed description of 41 mineral commodities are presented in Identification and Description of Mineral Processing Sectors and Waste Streams, EPA Office of Solid Waste 1995.

within the mineral processing industry does not include listed hazardous wastes, even those listed wastes generated within the mineral processing industry.

EPA (working in conjunction with State regulatory agencies) is currently involved in an effort to reevaluate the definition of solid waste and the regulations applicable to hazardous waste recycling. The goal of this effort is to simplify and clarify the existing definition of solid waste, as well as to encourage environmentally sound recycling. Given that the suggestion presented by the NMA (i.e., the recycling of listed hazardous wastes generated by an outside industry as feedstock into their normal mineral production processes) is typical of hazardous wastes being recycled by "normal" production processes, the Agency believes it is more appropriate to address such a scenario in the context of the overall effort to redefine the definition of solid waste. In the interim, the existing regulatory framework will continue to apply to secondary materials generated by outside industries, as well as to all listed hazardous wastes, being processed by the primary mineral processing industry. Thus, characteristic sludges and byproducts generated by outside industries being reclaimed by the mineral processing industry will continue to be excluded from the definition of solid waste; spent materials generated by outside industries, as well as all listed sludges and byproducts being reclaimed will continue to be regulated as hazardous wastes. Today's proposed amendment to the definition of solid waste addresses only those characteristic secondary materials that are both generated and processed within the primary mineral processing industry.

H. Alternative Approaches

EPA has also evaluated other potential approaches for dealing with issues of solid waste classification of mineral processing secondary materials. The Agency is also seeking comment on these alternatives.

1. Status Quo

One alternative approach is to not make any changes to the definition of solid waste and simply apply applicable waste treatment standards to mineral processing materials currently defined as solid and hazardous wastes. Efforts to amend the regulatory definition could be undertaken as part of the Agency's longer-term effort to address this issue comprehensively.

This approach would thus retain the distinctions between characteristic byproducts, sludges, and spent materials, at least for now. For reasons stated earlier, the Agency believes that these rules can be improved, and in particular that this type of material-by-material classification is inappropriate for the mineral processing industry. In addition, strict adherence to current Subtitle C rules may mean that mining companies would forgo legitimate recovery of these secondary materials. Thus, the Agency also believes that this is an overly restrictive approach.

Finally, as a prudential matter, since the Agency must necessarily develop land disposal prohibitions for mineral processing wastes at this time, the Agency believes it best, if at all possible, to deal with the jurisdictional issue at the same time, so that the scope of the prohibitions is clearly established.

2. Apply Solid Waste Changes Only to Spent Materials

Under this alternative, the Agency's proposed approach in Section I would only apply to spent materials as currently defined in 261.1. The current classification of byproducts and sludges would remain the same. While EPA believes that this approach may encourage recovery of mineral processing spent materials that would otherwise be abandoned, it still maintains the unnecessary and potentially arbitrary distinctions among characteristic byproducts, sludges, and spent materials. It also does nothing to address risks from byproducts and sludges in land-based units engaged in recovery which are serving as means of disposal and hence part of the waste disposal problem.

On the other hand, this proposal would only remove the existing regulatory distinction between exempt sludges and byproducts and spent materials for mineral processing wastes and therefore create an inconsistency with how other wastes streams are treated. EPA plans to address the issue more generally in a forthcoming rulemaking on the definition of solid waste. It may be argued that the present distinction should be maintained for mineral processing wastes until the issue is resolved in the broader rulemaking. EPA is therefore seeking comment on this alternative.

3. National Mining Association Approach

The National Mining Association (NMA) provided the Agency an August 31, 1995 draft proposal for addressing secondary materials from mineral processing (see Docket No. F-95-PH4A-

FFFFF). NMA's approach proposes three categories of materials which would not be considered solid wastes. The first categorical exclusion is for mineral processing secondary materials which can be substitutes for or supplements to feedstocks in a mining or mineral processing operation. These materials would be considered either co-products, intermediates, or in-process which and would be excluded under the regulatory definition of solid waste and hence Subtitle C regulation, whether or not managed in land-based units.

The second delineated category are secondary metal-bearing materials that do not meet the criteria set forth for the first category for in-process materials but which may still contain economically recoverable mineral values and thus can be used in and returned to a beneficiation or mineral processing unit. For NMA's second category "such mineral or metal-bearing secondary materials are not subject to RCRA Subtitle C and are excluded as long as the materials: (1) are in-process or utilized in an ongoing production process, and not discarded or intended for discard; (2) are managed or handled in a manner comparable to or consistent with virgin ores, raw materials, or feedstocks in production or raw material units or ore staging units; (3) contain a metal content that is comparable to or above the normal range of virgin ores or feedstocks, contain levels of minerals or metals recoverable by the technology being employed, or contain materials necessary to be an effective substitute for commercial products; (4) are not accumulated for more than 18 months without being used or processed in a primary production or recovery process (if they are accumulated beyond 18 months, provisions like those of the "speculative accumulation" rule, which continues to exist as a regulatory requirement, will apply); and (5) are not indiscriminately spilled or leaked into the environment, as long as any significant spill or leak of such materials is promptly addressed and returned to the production unit."¹⁵ (National Mining Association Draft Proposal, p. 10, August 31, 1995).

Finally, NMA proposes a third category called "extra-industrial" materials. These are hazardous secondary materials generated in industries other than the mining and primary mineral processing industry

¹⁵ It should be noted that NMA, in suggesting a conditioned exclusion approach for these 'Category 2' materials, still maintains its legal argument that such materials are absolutely excluded from subtitle C jurisdiction because they are not "discarded" within the meaning of *AMC I*.

that may be utilized in primary mineral processing operations. Under this approach, as long as the material is managed in a manner consistent with raw materials or feedstocks, it is not further regulated under RCRA Subtitle C. Such materials could not, however, be managed in land-based units.

There are certain similarities between NMA's suggested approach and that proposed by the Agency. In particular, the approach to Category 2 materials, although differing with respect to many details, appears similar conceptually to the Agency's proposal in the use of exclusions conditioned on some level of assurance that land-based units are not utilized as means of disposal. The chief difference is that NMA's proposal would exclude from jurisdiction an appreciable class of materials. Many of these can fall along the waste-like end of the management continuum discussed earlier, in terms of proximity to the process, immediacy of recovery, and value of material. For example, not all furnace bricks from copper smelters are recycled back through a beneficiation mill. Some copper smelters dispose of these bricks in on-site landfills, while others may wait years before recycling them. In addition, Category 1 materials have been managed in ways that are part of the waste disposal problem, due to their placement in land-based units. For example, smelter flue dusts at some primary mineral processing facilities have caused significant environmental damages (see Mining Sites on the National Priorities List, Office of Solid Waste 1995; Human Health and Environmental Damages from Mining and Mineral Processing Wastes, EPA Office of Solid Waste 1995).

Nevertheless, EPA specifically solicits comment on crafting an exclusion for in-process materials incorporating some of the concepts of NMA's Category 1. Such an exclusion could reflect the following principles: such materials would be returned for recovery to the process from which they are generated (see existing 261. 2 (e)(1)(iii) which already contains a similar exclusion); they would be managed in a timely fashion contiguous to the process unit such that they are an integral part of the process; materials managed in surface impoundments could not be eligible for outright exclusion. In addition, basic conditions as to recovery being legitimate and no speculative accumulation occurring would apply.

With respect to NMA's third category of secondary materials outside of the mineral processing industry, the Agency is deferring any proposal for changing the regulatory status to the larger

Agency efforts on Definition of Solid Waste (see preceding discussion on secondary materials outside the scope of this rule above).

4. Iron and Steel Industry Approach

As part of EPA's Common Sense Initiative for the iron and steel industry, the Specialty Steel Industry of North America, the Steel Manufacturers Association, the American Iron and Steel Institute, and the Metals Industry Recycling Coalition provided EPA a June 27, 1995 draft approach for redefining solid wastes (see Docket No. F-95-PH4A-FFFFF). This approach calls for flexible minimum management standards to be met which conditionally exclude recyclable materials from the definition of solid waste. This approach would require a Facility Operating Plan which includes: a spill prevention plan and procedures; types, quantities, and analysis of recycled materials; product specifications; speculative accumulation and storage requirements; closure plan; and recordkeeping and reporting for off-site shipments. A one time notification to EPA and State would be required, with a renewal of notification for material changes. The notification would be available for public review in EPA files.

Conditional exclusion would apply only to secondary mineral processing, i.e., those facilities that use scrap metal for over 51 percent of feedstocks. Hazardous waste manifest would be required for off-site shipments. Secondary materials must be stored in a manner to prevent release into the environment such as on asphalt or concrete pads.

Secondary materials could not be stored for longer than 12 months. Increase in inventory of quantity stored must have a reasonable market justification. Land applied products produced from a secondary material may not be used unless the product satisfies EPA's current use constituting disposal regulations.

It should be noted that the Agency is not endorsing the Iron and Steel Industry approach at this time. It is discussed here for the purpose of soliciting comments from other parties. Also, the Agency has summarized here only certain parts of this approach. Commentors are encouraged to review the Iron and Steel Industry's entire document, which is available in the RCRA docket.

5. Alternatives Suggested by Environmental Groups

Representatives of environmental groups have also suggested alternatives to EPA's proposal. As noted earlier,

their basic legal argument is that land-based units have sufficient nexus with disposal to be within RCRA jurisdiction. They also have suggested specific changes to the approach EPA is proposing today.¹⁶ In particular, they suggest further conditions relating to use of land-based units. To be considered process units, an owner operator would need to demonstrate to an authorized State or to EPA that the facility routinely manages virgin materials in land-based units and that there are no practical alternatives to use of land-based units for secondary mineral processing materials. They also suggest a no backsliding condition: facilities not using land-based units before the rule became effective could not add land-based process units thereafter. Finally, they suggest that eligibility for being process units hinge on control of releases via pathways other than groundwater contamination, and thus include conditions to prevent releases to air and surface water.

The Agency solicits comment on these points. We note, however, that the Agency does not, on initial consideration, favor case-by-case adjudication of the practicality of use of land-based processing units. This would appear to be cumbersome and difficult to administer. The suggested backsliding provision might have associated administrative difficulties as well, when dealing with such questions as incremental expansions or allowing alternatives for existing facilities commencing a different type of production activity. With respect to releases via exposure pathways other than groundwater, the Agency notes that releases to surface waters are already regulated under the Clean Water Act, and releases to ambient air are either controlled or potentially controlled by the Clean Air Act. In addition, such pathways would be amenable to control if needed under the case-by-case alternative for satisfying the process unit condition, as discussed above. Although RCRA authorities certainly can and do apply to these types of exposure pathways, the Agency does not initially believe they are the critical ones for assessing in every situation whether the mineral processing unit is functioning as a process unit. EPA solicits further comment on these points, however.

¹⁶ Memoranda documenting the specific comments received from representatives of these groups (which include the Environmental Defense Fund) are part of the record for this proposed rule.

II. Addition of Mineral Processing Secondary Materials to Units Processing Bevill Raw Materials

A. Introduction

This section of the preamble considers a similar fact pattern to the one just discussed. Metal-bearing mineral processing secondary materials are added to a process unit, except that instead of a process unit in the mineral processing industry, the addition is to a unit involved in beneficiation. Such a unit, considered without the addition of the mineral processing secondary materials, is thus processing Bevill raw materials, and the wastes from the unit would be exempted from Subtitle C regulation by the Bevill amendment (section 3001 (a)(3)(A)(ii), codified at 261.4(b)(7)) and the Agency's 198 regulatory determination. The issues addressed here are whether the addition of mineral processing secondary materials changes the status of the resulting wastes from Bevill to non-Bevill, and whether addition of mineral processing secondary materials converts the status of a process unit into a waste management unit.

The Agency's initial view is that these questions cannot be considered apart from the existing Bevill determination. EPA has already determined that the wastes from these processes should not be controlled under Subtitle C. 51 FR 24496 July 3, 1986 (upheld in *Environmental Defense Fund v. EPA*, 852 F.2d 1309 (D.C. Cir. 1988)). Although this determination can be reconsidered, and altered if appropriate, if the determination is to be reconsidered, it should be addressed directly pursuant to the Bevill determination criteria set out in section 8002, not through a potentially back-door route. Change in status of wastes or a unit due to addition of mineral processing secondary materials could be such a back-door route.

B. When Wastes From Co-processing Retain Bevill Status

EPA is thus proposing that wastes from beneficiation units that also receive metal-bearing secondary materials for legitimate recovery retain their Bevill status, subject to the following conditions, all designed to assure that the wastes remained the type that the Agency determined to exempt from Subtitle C. First, the wastes need to result from operations that process greater than 50% beneficiation raw materials. This is the standard condition EPA applies to all of the Bevill categories to distinguish when wastes result from the enumerated activity exempted by Congress. See 56 FR at

7198 February 21, 1991; 50 FR at 49190 November 25, 1985; 54 FR at 33620 September 1, 1989; *Horsehead Resource Development Co. v. Browner*, 16 F.3d 1246, 1256 (D.C. Cir. 1994) (upholding this test); *Solite Corp. v. EPA*, 952 F.2d 473, 491 (D.C. Cir. 1991) (upholding this test). Second, addition of the mineral processing secondary could not be used as a means of surreptitious disposal. Consequently, the Agency would require the same quantified test for legitimate recycling set out in the previous section. In addition, case-by-case determinations of sham recycling could also be made, as explained above.

EPA also solicits comment on whether to adopt a quantified test to assure that addition of mineral processing secondary materials does not have a significant effect upon the wastes resulting from the process, so that the wastes remain the type EPA determined warranted Subtitle C exemption. EPA has already adopted such a test with respect to wastes generated from Bevill devices co-processing hazardous waste with Bevill raw materials, stating in essence that the resulting wastes (for example, cement kiln dust from a cement kiln burning hazardous waste fuel) retain Bevill status so long as their content is not significantly affected by the hazardous waste management activity. "Significantly affected" is assessed on the basis of either a statistically significant increase in concentrations of hazardous constituents (or increase in leachable concentrations) over the non-waste baseline (i.e. the baseline being the wastes that would result if hazardous wastes were not co-processed) or environmentally significant increase in concentrations of hazardous constituents (or increase in leachable concentrations). See 266.112.

Mineral processing industry representatives have criticized applying this test here, on both technical and legal grounds. They contend that there are difficulties in measuring the contaminants apportioned to the Bevill unit through mineral processing; that the undesirable contaminants are concentrated through mineral processing and effectively passed through the Bevill unit in sufficient volumes such that Bevill materials may be affected over long periods of time. They further object on the basis that these mineral processing secondary materials are in-process intermediates which are not solid waste and therefore not subject to RCRA jurisdiction (see Oct 2, 1995 meeting National Mining Association notes, RCRA Docket F-95-PH4A-FFFFF). The legal objection is that the situation here is not analogous

to that in § 266.112 because the secondary materials come from beneficiation and do not result from commingling with a hazardous waste treatment residue.

EPA's initial view is that the situation discussed here is sufficiently similar to that dealt with in § 266.112 that some type of comparability test to ascertain that resulting wastes have not been significantly affected is desirable. As discussed earlier, although the proposal would not classify mineral processing secondary materials as hazardous wastes per se, they are coming from a different industry segment than beneficiation, can contain higher concentrations of and different hazardous constituents than are found in beneficiation raw materials, and can be managed in land-based units. At some point, if waste resulting from such activities "is 'significantly affected,' it is no longer just [beneficiation waste], but [beneficiation waste] plus" the other hazardous component. *Horsehead Resource Development Co.*, 16 F.3d at 1258.

The Agency is soliciting comments on alternative methods for determining whether a Bevill waste has been significantly affected (i.e., made significantly more hazardous) by the introduction and re-processing of mineral processing secondary materials. The Agency recognizes that the ability to determine whether a Bevill waste has been significantly affected may be more difficult for some Bevill units, especially copper dump leaching. In this case, acid solutions from non-mineral processing sources are continuously added and circulated through the process making it difficult to apportion the contribution of contaminants from Bevill and non-Bevill sources over time. The Agency seeks comments on how to determine significant changes to the Bevill waste in these types of situations. One option could be to wait until the Bevill unit ceases activity before making the determination that the wastes in the unit qualify for the Bevill exclusion. However, the Agency still generally believes that beneficiation wastes are generated in such large quantities that the introduction of contaminants from mineral processing secondary materials should not result in significantly changing the hazardousness of the Bevill waste.

Provided these tests are met, the Agency is proposing that resulting residues retain Bevill status. We reiterate that in these situations the wastes remain the type of waste EPA has determined should not be regulated under Subtitle C.

C. Status of Units Receiving Mineral Processing Secondary Materials

EPA is further proposing that so long as mineral processing secondary materials introduced into beneficiation units are being legitimately recycled, then no further conditions would apply to those units. The Agency is thus not proposing conditions distinguishing when beneficiation units are truly functioning as process units (the issue discussed in the previous section of the preamble). As explained above, to do so would appear to undermine EPA's existing determination that any wastes from the unit—which would include leakage from the unit—are to be accorded the Bevill exemption. The addition of mineral processing secondary materials is not changing the character of the material discarded from the unit. EPA does not see why it should seek to condition addition of mineral processing secondary materials to the unit when the Agency has found it unnecessary to develop controls directly as part of the Bevill determination. EPA solicits comment on this issue, however.

D. Mixing of Mineral Processing Hazardous Wastes With Bevill Wastes

EPA is further proposing that if any mineral processing hazardous waste, or indeed any hazardous waste, is disposed with, mixed with, or otherwise combined with a Bevill waste, the resulting waste is regulated under RCRA Subtitle C (or, in the situation where the mixture results in elimination of a characteristic, that the activity be regulated as a form of treatment subject to regulation under Subtitle C). This situation differs from that discussed above. Mineral processing secondary materials are not being recycled, but are simply being disposed. They are not being co-processed with raw materials, but being mixed with wastes. The Agency is proposing that Bevill wastes not be allowed as an unregulated dumping ground for normal Subtitle C hazardous wastes. Cf. *Horsehead Resource Development Co. v. Browner*, 16 F. 3d at 1258 (“it simply makes no sense to permit Bevill devices to become inadequately regulated dumping grounds for hazardous materials”). Environmental releases of Bevill-exempt wastes are well documented and the Agency is concerned about the potential human health and environmental risks due to increased hazardous constituents resulting from mixtures of hazardous waste with Bevill-exempt wastes. (See *Human Health and Environmental Damages from Mining and Mineral Processing Wastes*, EPA Office of Solid

Waste 1995). Also of concern is Bevill-exempt waste direct contact and ingestion, when used as soil supplements, fill materials, and for landscaping purposes.

1. Background

The Subtitle C rules state generally that mixtures of listed wastes and solid wastes remain hazardous until delisted. Mixtures of characteristic wastes and solid wastes stop being hazardous when the resulting mixture no longer exhibits a characteristic, although the mixing is normally a form of RCRA treatment because it is designed to render the waste non-hazardous or less hazardous. See generally 261.3(a)(2)(iv) and (d) and the definition of “treatment” in 260.10. More basically, placement of hazardous waste in a storage or disposal unit is ordinarily regulated under Subtitle C, even if there is also non-hazardous waste in the unit. RCRA section 3004(a) and 264.170 and 264.300. These rules were promulgated in 1980. EPA did not specifically address their applicability when the waste being mixed with a hazardous waste was a waste exempted under the Bevill amendment.

EPA took up that issue in 1989. 54 FR 36592 (September 1, 1989). EPA stated in that rulemaking that the mixture rule does apply to mixtures of listed wastes and Bevill-exempt solid wastes. The Agency further stated that mixtures of characteristic hazardous waste and Bevill-exempt solid wastes, which mixtures exhibit a characteristic, would be subject to Subtitle C unless (1) the resulting mixture did not exhibit any characteristic, or (2) the mixture exhibited a characteristic imparted to the mixture solely from the Bevill-exempt portion. 54 FR at 36622 and 36641. The Agency also exempted from any requirement pertaining to treatment situations where characteristic wastes were mixed with Bevill-exempt wastes where the resulting mixture no longer exhibited a characteristic. EPA did so largely to avoid regulating situations where characteristic mineral processing materials were added to production processes and mixed with Bevill raw materials (a situation being addressed elsewhere in this proposal, as discussed in the preceding subsection). 54 FR at 36622 and 36641.

These rules were challenged and remanded as part of the 1991 *Solite* decision, the panel deeming the issue to be controlled by the court's decision in *Shell Oil* dealing with the general mixture rule (*Solite Corp. v. EPA*, 952 F. 2d 473, 493–94 (D.C. Cir. 1991)). EPA reinstated this so-called Bevill mixture rule as part of the emergency

reinstatement of the mixture and derived-from rules. 57 FR 7628 March 3, 1992. This reinstatement was later found to be procedurally defective in *Mobil Oil v. EPA*, 35 F.3d 579 (D.C. Cir. 1994) where the court vacated the rules applicable to the mixing of characteristic hazardous waste with a Bevill waste. EPA in this proposal is responding to the court's mandate in that opinion.

2. Proposed Amendments to Bevill Mixture Rule

EPA is proposing here to have all normal Subtitle C consequences apply when hazardous wastes are disposed with, stored with, mixed with or otherwise combined with Bevill-exempt solid wastes. If a listed waste is mixed, the resulting mixture is a Subtitle C hazardous waste unless delisted. This is the same result for mixing a listed hazardous waste with any solid waste (see 261.3(a)(2)(iv)). If a characteristic waste is mixed with a Bevill-exempt solid waste, and the resulting mixture exhibits the characteristic of the hazardous waste, the resulting mixture would be a Subtitle C hazardous waste. If the resulting mixture does not exhibit a characteristic or exhibits only the characteristic of the Bevill waste, the activity would be treatment normally requiring some type of RCRA control. Moreover, the unit to which the characteristic hazardous waste (i.e. the non-Bevill waste) is added would be a regulated unit due to the initial placement of hazardous waste¹⁷, as well as by virtue of the treatment activity.

EPA is taking this position so that Bevill-exempt wastes are not used as a means for regulated hazardous wastes to avoid the Congressionally prescribed controls for hazardous wastes. The Bevill exemption is not meant to provide a harbor for other hazardous wastes and EPA is concerned about the degree of mixing that occurs for some mineral sectors (see *Mineral Processing Facilities Placing Mixtures of Exempt and Non-Exempt Wastes in On-Site Waste Management Units; Human Health and Environmental Damages from Mining and Mineral Processing Wastes*, EPA Office of Solid Waste 1995) EPA Office of Solid Waste 1995). The Agency is, of course, altering somewhat its 1989 position which allowed some mixed characteristic/Bevill-exempt mixtures to avoid Subtitle C consequences, but, as explained above, the Agency did so largely to allow characteristic mineral processing secondary materials to be mixed in

¹⁷ See, e.g., *Chemical Waste Management v. EPA*, 976 F. 2d at 20 n. 4.

Bevill process units. The Agency is addressing this situation directly in today's proposal in the provisions dealing with solid waste classification issues. The remaining situations deal with classic waste disposal, storage, treatment, or mixing, without any nexus to recycling or production, and the Agency is convinced that it is inappropriate for the Bevill exemption to apply outside the Bevill context in such circumstances.

EPA also notes that the mixing principles proposed here are consistent with the boiler/industrial furnace rules dealing with co-processing of hazardous waste fuels and Bevill raw materials, and subsequent classification of resulting wastes. As discussed earlier, the Agency there adopted a test whereby resulting wastes would retain Bevill status if they were not significantly affected as a result of the co-processing. See 266.112 and section II.C above. That situation, however, does not involve mixing of wastes, but mixing of treatment residue (the hazardous waste fuel combustion residue) with raw materials in a production process (whose air emissions, moreover, are regulated under Subtitle C standards). The situation in the present proposal is simple mixing of a hazardous waste with another waste, and none of the competing considerations raised by co-processing/recycling situations apply.

Examples

The following examples illustrate how the proposed mixture principle would apply.

Example 1: Facility A generates F001 listed solvents which it mixes with a solid waste that has Bevill-exempt status.

The resulting mixture is a Subtitle C hazardous waste unless and until it is delisted. The unit where the wastes are combined is a Subtitle C regulated unit.

Example 2: Facility B generates a characteristic ignitable solvent which it adds to a surface impoundment containing solid waste that has Bevill-exempt status and also exhibits the toxicity characteristic for lead. The resulting mixture exhibits the toxicity characteristic for lead but is not ignitable.

The addition of the ignitable waste to the impoundment makes the impoundment a regulated unit. It is engaged in both treatment (removal of the ignitability characteristic) and disposal (the initial placement of the ignitable waste; see RCRA section 3004 (k)). The impoundment would thus have to obtain a Subtitle C permit to operate. In addition, land disposal restriction requirements would apply to the

placement of the ignitable waste in the impoundment. The remaining wastes in the unit retain their Bevill status because they do not exhibit the characteristic property of the non-Bevill waste.

Example 3: Facility C, a mineral processing facility, generates a characteristic metal-bearing secondary material exhibiting the toxicity characteristic for lead which it sends to a beneficiation operation where it is co-processed with beneficiation raw materials. The resulting waste exhibits the same characteristic.

The resulting waste would likely be a Bevill waste exempt from Subtitle C requirements (assuming legitimate material recovery is occurring). Under this proposal, so long as the beneficiation process utilizes greater than 50% Bevill raw materials for its input, the resulting wastes retain Bevill status provided the resulting wastes are not significantly affected by the contribution of the non-Bevill feed.

E. Re-mining Previously Generated Mineral Processing Wastes

EPA believes that among the positive effects of this proposal would be to encourage the "re-mining" of previously generated mineral processing wastes—that is, the excavation of such wastes from disposal sites (including remediation sites) for purposes of mineral recovery. Many of the 60 or more mine and mineral processing sites on the National Priorities List could reduce costs of remediation by re-mining. Such recovery would promote the statutory goals of less land disposal, increased material recovery, and also proper waste treatment (since the treatment standards for most mineral processing wastes are based on performance of High Temperature Metal Recovery processes such as smelting). The reason re-mining could be encouraged is that the previously disposed mineral processing materials would not be solid wastes once they are excavated for purposes of legitimate recovery by mineral processing or beneficiation processes, provided they satisfy the same conditions that a newly-generated secondary material from mineral processing would satisfy. See also 261.1(c)(8) (stating that a material that is speculatively accumulated need not be considered a solid waste any longer "once they are removed from accumulation for recycling").

EPA notes further that excavation of wastes would not render the historic disposal unit subject to RCRA requirements. See 53 FR at 51444 (Dec. 21, 1988) (movement of waste from one

unit to another does not subject the initial unit to land disposal restriction requirements); 55 FR at 8758 (same); Letter from Lisa K. Friedman, Associate General Counsel Solid Waste and Emergency Response Division to Richard Stoll (Sept. 5, 1990) (indicating that under the same reasoning movement of waste from one unit to another, by itself, does not trigger RCRA permitting requirements for the initial unit).¹⁸ EPA notes that some questions have been raised about the scope of EPA's discussion of "active management" in the preamble to the Sept. 1, 1989 rule. In that discussion, EPA described some activities that could subject existing waste management units containing non-Bevill wastes to Subtitle C. 55 FR at 8755; 54 FR at 36597. The 1989 preamble did not specifically address the question of whether removal of some waste from an existing unit subjects the waste remaining in the unit to Subtitle C regulation. EPA is clarifying that the Agency's position, as discussed above, is that removal of waste from such a unit does *not* constitute "disposal" for purposes of triggering Subtitle C regulation, and the language of the 1989 preamble, although somewhat unclear, should be read to be consistent with EPA's statements in the NCP preamble on this point.

III. Mineral Processing Wastes Covered by This Rule

The next threshold issue for determining the scope of the proposed LDR prohibitions is whether wastes come from mineral processing operations rather than beneficiation operations. As discussed earlier, the only wastes whose Bevill status EPA reexamined in 1989 under the high volume/low hazard benchmark were wastes from mineral processing; all beneficiation wastes consequently retained Bevill status. See section I.A. above. Thus, the only wastes that were newly identified¹⁹ as hazardous in that rulemaking, and hence subject to the LDR prohibitions proposed today, are those from mineral processing.

The issue addressed here is determining which wastes from the metal recovery sector come from mineral processing operations and which from beneficiation activities. EPA

¹⁸ A copy of this letter and related correspondence has been placed in the administrative record for this proposed rule.

¹⁹ EPA did not list any additional wastes from the mineral processing sector. Hence, mineral processing wastes ineligible for Bevill status as a result of the 1989 rule would be hazardous only if they exhibit a characteristic. This is why the text refers only to "identified" hazardous wastes.

established the broad standard for making this determination in the 1989 rule (see 54 Fed. Reg. 36592, 36616–20 codified at 261.4(b)(7)). In essence, beneficiation operations typically serve to separate and concentrate the mineral values from waste material, remove impurities, or prepare the ore for further refinement. Beneficiation activities generally do not change the mineral values themselves other than by reducing (e.g., crushing or grinding), or enlarging (e.g., pelletizing or briquetting) particle size to facilitate processing. A chemical change in the mineral value does not typically occur in beneficiation.

Mineral processing operations, in contrast, generally follow beneficiation and serve to change the concentrated mineral value into a more useful chemical form. This is often done by using heat (e.g., smelting) or chemical reactions (e.g., acid digestion, chlorination) to change the chemical composition of the mineral. In contrast to beneficiation operations, processing activities often destroy the physical and chemical structure of the incoming ore or mineral feedstock such that the materials leaving the operation do not closely resemble those that entered the operation. Typically, beneficiation wastes are earthen in character, whereas mineral-processing wastes are derived from melting or chemical changes.

EPA is not reopening this standard here. What EPA has done since the 1989 rule, however, is to examine mineral recovery operations, and evaluate the status of each waste generated by the process pursuant to the general test for distinguishing mineral processing from beneficiation. EPA's tentative conclusions—including process descriptions for each of the 41 mineral sectors, description of each waste generated from the process, and description of why EPA considers each waste to be from mineral processing or from beneficiation based on the application of the existing narrative test—are set out in the report "Identification and Description of Mineral Processing Sectors and Waste Streams", EPA Office of Solid Waste 1995, which is part of the administrative record for this proposal.

EPA solicits comment on this document. Comments should address the factual particulars on which EPA's tentative conclusion is based. EPA also notes that it has not determined whether or not to consider the factual determinations to be final and binding Agency action when this rule is finalized. The alternatives, on which EPA solicits comment, is to either view each waste-by-waste determination set

out in the Background Document as a final, binding Agency determination of whether the waste is from mineral processing or beneficiation, or to consider the conclusion as guidance, and therefore advisory and not absolutely controlling if applied in an individual context such as an enforcement proceeding. A possible reason to prefer this latter approach is not to deprive decision-makers of flexibility in evaluating and classifying the complicated factual circumstances relating to particular wastestreams. On the other hand, final classification after notice and comment would produce certainty and also avoid the possibility of inconsistent determinations. If the Agency decides to make these classifications final and binding determinations, the final rule will contain appropriate regulatory provisions reflecting these decisions.

The Agency also cautions that this document should not be construed to be an exclusive list of mineral processing and associated wastestreams; other types of mineral processing wastes may exist. Thus, the omission of a wastestream in this background document does not relieve the generator from the responsibility for correctly determining whether each of its particular wastes is covered by the Bevill exemption based on the narrative criterion in 261.4(b)(7) for distinguishing mineral processing from beneficiation.

IV. Responses to Court Remands on Mineral Processing Wastes

A. *Applicability of the Toxicity Characteristic Leaching Procedure (TCLP) to Mineral Processing Wastes*

The Agency proposes to continue using the TCLP (SW-846 Test Method 1311) as the basis for determining whether mineral processing wastes and manufactured gas plant wastes are hazardous by the TC, and has developed a record supporting this position.

1. Introduction

When the Agency promulgated the TCLP method for testing whether wastes exhibit the toxicity characteristic, the applicability of the TCLP test to mineral processing wastes was challenged in *Edison Electric Institute v. EPA*, 2 F.3d 438 (D.C. Cir. 1993) ("*Edison*"). The Court held that the information in the record at the time was insufficient to show a rational relationship between the TCLP and the mismanagement scenario for mineral processing wastes.

In its remand, the Court did not rule that the Agency must demonstrate that mineral processing wastes are typically

or commonly disposed in a municipal solid waste landfill (MSWLF). Rather, the Court held that the Agency must at least provide some factual support that such a mismanagement scenario is plausible (2 F.3d at 446–47). The Agency is addressing this remand in today's proposed rule because any applicable land disposal restrictions would have little meaning unless the Agency has a basis for determining whether these mineral processing wastes are hazardous and therefore subject to the restrictions.

2. Agency Response to the Edison Electric Institute Remand

Under the court's ruling, the application of the TCLP test to mineral processing wastes is appropriate if the evidence available to EPA shows that disposal of such wastes in municipal solid waste landfills is a "plausible" mismanagement scenario (not necessarily requiring that it be typical or common) 2 F.3d at 446. The Agency believes that current information is sufficient to justify applying the TCLP to all mineral processing wastes, and is proposing today to reaffirm its original position that the TCLP is appropriately applied to mineral processing wastes.²⁰

EPA's research demonstrates that mineral processing waste may plausibly be mismanaged in ways that are similar to that described in the Agency's general mismanagement scenario that forms the basis for the TCLP test (i.e., co-disposal in an unlined municipal solid waste landfill generating mildly acidic leaching medium). (See *Applicability of the Toxicity Characteristic Leaching Procedure to Mineral Processing Waste*, EPA Office of Solid Waste 1995). The Agency recognizes that mineral processing wastes may be managed in monofills at mineral processing facilities; however, as the Court noted, it is sufficient if co-disposal with municipal solid wastes (MSW) is simply a plausible mismanagement scenario (2F.3d at 446). The TCLP is designed to ensure that waste does not pose a risk of present or potential substantial hazard even if mismanaged.

In an earlier rulemaking, the mining industry contended that mineral processing wastes would not be disposed in MSWLFs because they are generated in volumes too large to make such disposal practical. 54 FR 36592, 36600–36603 September 1, 1989. However, information now in the record shows that some mineral processing

²⁰The court did not vacate any part of the TCLP rule, but simply remanded it to the Agency. Therefore, no change in the regulatory text is needed to leave the rule in effect.

wastes are generated in very low volumes, (Applicability of the Toxicity Characteristic Leaching Procedure to Mineral Processing Waste, EPA Office of Solid Waste 1995), and indeed, the truly high volume mineral processing waste were accorded Bevill status in the 1989 rule. While some mineral processing wastes are generated in large volumes and disposed on-site as industry contends, the Agency has found that some mineral processing wastes are placed in dumpsters, or similar containers, and shipped off-site for commercial disposal. Accordingly, disposal in MSWLFs is entirely plausible.

Furthermore, EPA now has substantial direct evidence of actual disposal of mineral processing wastes in MSWLFs. In response to the Court's remand, the Agency performed a literature search to identify potential cases of co-disposal of mineral processing wastes in MSWLFs, and found a number of cases of co-disposal throughout the country. This should not be a surprise because these mineral processing sites are spread out across the country, and many are located within highly populated areas. These cases include, but are not limited to, co-disposal of mineral processing wastes from the refining of alumina, copper, gold, ferrous metals, lead, silver, and zinc. Such wastes have been disposed in various states throughout the United States, representing all geographic and climatic regions. The Agency also found several cases where manufactured gas plants wastes were disposed in MSWLFs. (See Applicability of the Toxicity Characteristic Leaching Procedure to Mineral Processing Waste, EPA Office of Solid Waste 1995).

The Agency found additional cases of possible co-disposal of mineral processing wastes with MSW, even though there was uncertainty as to whether the waste originated from a non-exempt mineral processing operation. The uncertainty is due, in part, to inconsistent terminology applied to mineral wastes, and to the fact that these wastes often become indistinguishable from other soil and debris in MSWLFs. Documentation from landfill operators and regulators cleaning up contaminated landfills typically does not distinguish among regulatory terms such as "beneficiation," "exempt" and "nonexempt" mineral processing, and "primary" and "secondary" mineral wastes. Rather, generic terms describe such materials as flue dust, slag, and tailings. The wastes thus appear mineral processing in origin. The Agency found cases where each of these terms were

used to describe wastes found in MSWLFs. (See Applicability of the Toxicity Characteristic Leaching Procedure to Mineral Processing Waste, EPA Office of Solid Waste 1995). While there is some uncertainty as to the origin of such wastes, there is at least a significant possibility that they are from primary mineral processing facilities. EPA believes that this information should not be ignored, but rather should be considered in conjunction with the other evidence of known co-disposal, to assess the likelihood that mineral processing wastes are exposed to the type of landfill or landfill-like leaching medium replicated in the TCLP.

In addition to the above cases, the Agency has evidence that mineral processing wastes have been co-disposed with plant trash and other miscellaneous solid wastes in on-site landfills. In some cases, these landfills accepted MSW from nearby communities. Again, the type of leaching medium generated would have the properties modelled by the TCLP. In addition, analysis of data submitted by mineral processing facilities in the Agency's 1989 National Survey of Solid Wastes from Mineral Processing Facilities reveals several cases in which survey respondents reported disposing mineral processing wastes with other solid wastes in landfills or other land-based units. All of the literature searches, survey analysis, and supporting information are located in the TCLP Technical Background Document in the RCRA docket for public review.

3. The Synthetic Precipitation Leaching Procedure (SPLP)

Although the Agency believes that the TCLP test is an appropriate test for assessing the toxicity of mineral processing wastes, EPA acknowledges that industry has raised concerns about this test. The mining industry contends that the TCLP test mobilizes specific metals in an atypical fashion. Further, industry claims that the SPLP test method 1312 is a more appropriate test for mineral processing wastes. See American Mining Congress (AMC) Comments on LDR Phase II RCRA docket dated March 17, 1986. AMC contends that mine waste piles are not usually acidic in nature; nor are they exposed to organic acids. AMC argued that acetic acid used in the TCLP test was highly aggressive in solubilizing lead, and the use of acetic acid would seriously overstate the potential of such materials to leach lead into the environment.

AMC also contends that under the Extraction Procedure test (the previous

test used by the Agency to evaluate a wastes' toxicity), companies could use the Structural Integrity Procedure (SIP) for monolithic wastes and its use was more consistent with the large size of mineral processing wastes rather than grinding down wastes to meet the size reduction requirements of the TCLP. In AMC's July 24, 1992 comments on 55 FR 21450, industry indicated that Standard Method 1312 could be modified for use on mineral processing wastes if: 1) different leach media were developed for wastes generated east and west of the Mississippi, and 2) abandon the size reduction requirement.

At this time, EPA does not have enough information to fully evaluate the merits of AMC's claims. The SPLP test was used, in addition to relaxing the corrosivity standard by one order of magnitude on each end of the pH scale, to determine which large volume/low toxicity (special) mineral processing wastes to set apart from all other mineral processing wastes. 54 FR 15316, 15340 (April 17, 1989). These relaxed standards were used only as a screening tool to determine a low hazard criteria for large volume mining waste. 54 FR 36592 (September 1, 1989). In this final rule on the Bevill exclusion, the Agency stated that the SPLP test was "solely a preliminary screening device to determine which mineral processing wastes are special wastes, and will not be used in determining which wastes will subsequently be regulated under Subtitle C." 54 FR at 36597. In this same rule, commenters noted that EPA should not replace the TCLP test with the SPLP to screen mineral processing wastes because the Agency had not demonstrated that the EP and TCLP significantly overestimated the leaching of metals from mineral processing wastes.

TCLP is the Agency's method of simulating the movement or leaching from waste management units to groundwater, based on extensive research (e.g., lysimeter testing) simulating landfill conditions. When the EPA promulgated the TCLP (see 55 FR 11798, March 29, 1990), the Agency was responding to the Congressional directive to address the leaching of organic compounds, particularly volatiles, and to improve the groundwater model and operational shortcomings of the EP, which was in place prior to 1990. (See 55 FR 11800). The 1990 final rule completed a thorough evaluation of issues surrounding the appropriate test, based on a proposal (June 13, 1986) and a number of supplemental notices, as well as a related land disposal restrictions notice. (See 51 FR 24856, July 9, 1986;

51 FR 33297, September 19, 1986; 51 FR 40572, November 7, 1986). The Agency's response to comments on the TCLP are found in the background document entitled "Technical and Response to Comment Document for the TCLP (Method 1311)" (1989).

EPA has very limited representative data about which mineral processing wastestreams would fail either a TCLP test or a SPLP test. (Further discussions on the SPLP test are found in Applicability of the Toxicity Characteristic Leaching Procedure to Mineral Processing Waste, EPA Office of Solid Waste 1995). Indeed, the Agency's estimates of costs cover a wide range in part because of the significant uncertainty about which wastestreams would be covered by the proposed rule. EPA solicits data about which wastestreams would fail the SPLP test and which would fail a TCLP test, about the risks to the environment that may result from wastestreams that fail one but not both tests under current management practices, and the costs of subjecting such wastestreams to the requirements of this proposed rule. EPA solicits such data because it would permit a better assessment of whether to use the SPLP test instead of the TCLP test. The Agency is also soliciting comments on any other tests now in use either by private industry or the states which may more accurately determine the toxicity of mineral processing wastes.

4. Request for Comments

The Agency encourages all interested parties to provide comments or further information on the issues addressed in this section. The Agency is particularly interested in receiving additional information indicating whether mineral processing wastes and manufactured gas plant wastes have been mismanaged and co-disposed with other wastes in MSWLFs or other environments where they are exposed to a comparable type of leaching medium. Information is also solicited on the practical aspects of using the TCLP as a uniform test for determining hazardous characteristics of mineral processing wastes. The Agency further requests comments on its discussions of alternative test methods.

B. Remanded Mineral Processing Wastes

The Agency is proposing to revoke the current hazardous waste listings for five court-remanded smelting wastes. The Agency is also proposing not to re-list them as hazardous. Instead, the Agency would regulate them as characteristic wastes.

In 1980, the Agency listed as hazardous eight wastes generated by

primary metal smelters (45 FR 33066, 33124, 47832-34, (1980)). The Agency listed the wastes pursuant to 40 CFR 261.11(a)(3) because they contained one or more of the hazardous constituents listed in 40 CFR 261, Appendix VIII. The eight wastes are described as follows:

K064—Acid plant blowdown slurry/sludge resulting from the thickening of blowdown slurry from primary copper production.

K065—Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities.

K066—Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.

K067—Electrolytic anode slimes/sludges from primary zinc production.

K068—Cadmium plant leach residue (from oxide) from primary zinc production.

K088—Spent potliners from primary aluminum reduction.

K090—Emission control dust or sludge from ferrochromium-silicon production.

K091—Emission control dust or sludge from ferrochromium production.

In October of 1980, in response to congressional enactment of the Bevill Amendment, the Agency suspended its listing of the eight wastes. (46 FR 4614-15, 27473 (1980)). In 1985, EPA proposed a new rule relisting six of the eight wastes (50 FR 40292, 40295 (1985)). (The Agency chose not to propose to re-list two of the original eight wastestreams (electrolytic anode slimes/sludges, K067, and cadmium plant leach residue, K068, from primary zinc production) because it found that industry was routinely recycling these secondary materials in an environmentally sound manner.) However, the Agency never promulgated a final rule based on the 1985 proposal; furthermore, it withdrew its proposal on October 9, 1986 (51 FR 36233).

In the case of *Environmental Defense Fund v. EPA*, 852 F.2d 1316 (D.C. Cir. 1988) EPA was ordered to make a final decision regarding whether to re-list six of the metal smelting wastes that it had proposed to list in 1985, and to reduce the scope of the Bevill exemption as it applies to mineral processing wastes. The Agency complied with this order when it re-listed the six wastes.

The American Mining Congress (AMC) challenged these listings. In *American Mining Congress v. EPA*, 907 F.2d 1179 (D.C. Cir. 1990) the Court upheld the Agency's decision to re-list waste K088, spent potliners from primary aluminum reduction, but found that the Agency's record for the five remaining waste streams did not adequately address certain issues raised in comments during the rulemaking.

Since the Court did not vacate the listings, they technically remain in effect.

Having completed further study, the Agency is today proposing to revoke the five remanded waste listings. Because of changes in the nature of the wastes generated and the way in which they are managed, the Agency has determined that they no longer meet the criteria for listing. Individual wastes of this type will be regulated if they exhibit a hazardous characteristic.

In determining whether these wastes should continue to be listed, the Agency applied the criteria specified in 40 CFR 262.11(a), and its policy on listing discussed most recently at 59 FR 66073-75 (Dec. 22, 1994). As discussed at greater length in the December 22, 1994 Federal Register, the Agency takes into account factors other than the characteristics of the waste itself in making a listing decision. Such factors include (among other things) the quantity of the waste generated, plausible management scenarios, and the coverage of other regulatory programs. Where the Agency has information regarding the way a waste is handled at most of the facilities at which it is generated, it may do a more refined analysis of plausible management scenarios.

Specifically, the Agency is proposing to revoke the listing for, and to not re-list: copper acid plant blowdown (K064); surface impoundment solids at primary lead smelters (K065); acid plant blowdown from primary zinc production (K066); emission control dust and sludge from ferrochromium-silicon production (K090); and emission control dust or sludge from ferrochromium production (K091). A description of the current management of these wastes and the rationale for this proposal is in the RCRA docket for this proposed rule.

The Agency encourages all interested parties to provide comments on the issues pertaining to the listing revocations, and decision not to re-list, these wastes.

C. Lightweight Aggregate Mineral Processing Wastes

1. Background

The Agency is proposing that air pollution control dust and sludge from the production of lightweight aggregate be classified as a mineral processing waste that is no longer eligible for the Bevill exemption.

Lightweight aggregate air pollution control (APC) dust and sludge, was one of many mineral processing wastes that was made conditionally exempt from

RCRA Subtitle C requirements under the 1980 Bevill Amendment to RCRA. In 1990, following more detailed study of the generation rates for this waste, the Agency determined that it did not qualify for the Bevill exemption (55 FR 2322, 2340, January 23, 1990). In 1991, the Federal Appeals Court directed the Agency to reconsider, after providing notice and soliciting comments, whether these wastes qualify for the Bevill exemption. (*Solite Corporation v. EPA*, 952 F.2d at 500. In today's rule, the Agency is reexamining and soliciting comments on whether lightweight aggregate APC dust and sludge is eligible for coverage under the Bevill exemption.

2. Agency Response to the Remand

For purposes of EPA's 1989 and 1990 Rules concerning Bevill eligibility for mineral processing wastes, high volume is defined as greater than 45,000 metric tons per year, per facility, for a solid waste, or 1,000,000 metric tons per year, per facility, for a liquid waste, averaged across all facilities generating a particular waste. To determine whether APC dust and sludge from lightweight aggregate production satisfied the high volume criterion, the Agency analyzed data from its 1989 National Survey of Solid Wastes from Mineral Processing Facilities (SWMPF Survey) and data from public comments submitted by affected companies (e.g., Solite). These methods and analysis are available for public review in the RCRA docket (see Lightweight Aggregate Production and Air Pollution Control Wastes, EPA Office of Solid Waste 1995).

None of the methods used resulted in a volume estimate that is greater than 45,000 metric tons per year, the high volume criterion for solid special mineral processing wastes. SWMPF Survey data from two Confidential Business Information (CBI) facilities have been included in a separate analysis using all methods. The results, which remain confidential, are not substantially different than the results presented previously. Based on this analysis, the Agency tentatively finds that APC dust and sludge from lightweight aggregate production is not a high volume waste and so does not qualify for the Bevill exemption. Therefore, the Agency is proposing that these wastes be classified as a mineral processing wastes that are no longer eligible for the Bevill exemption.

These wastes are alternatively used as building materials, recycled back into the process, or land disposed. Lightweight aggregate APC dust and sludge seldom fail the TCLP, thus they are usually not characteristic hazardous

wastes. Further, the Agency believes this rule will not impose significant regulatory costs on the Lightweight Aggregate sector since much of the APC dust and sludge is no longer generated due to process changes. (See Lightweight Aggregate Production and Air Pollution Control Wastes, EPA Office of Solid Waste 1995).

3. Request for Comments

The Agency encourages all interested parties to review the record of the Agency's analysis in the RCRA docket and provide comments or further information on the data, methodology, and findings related to this issue.

D. Mineral Processing Wastes From the Production of Titanium Tetrachloride

The Agency is proposing that iron chloride waste acid from the production of titanium tetrachloride be classified as a mineral processing waste that is not eligible for the Bevill exemption. Waste acid from the production of titanium tetrachloride was one of numerous mineral processing wastes that was conditionally exempt from RCRA Subtitle C requirements under EPA's initial interpretation of the Bevill amendment. In 1989, following a study of the waste's circumstances of generation, the Agency determined that titanium tetrachloride waste acid did not qualify for the Bevill exemption because it was a mineral processing waste, not a beneficiation waste, and did not meet the high volume/low hazard criteria established by EPA for determining those mineral processing wastes subject to the Bevill exemption. (See 54 FR 36592, September 1, 1989.)

One producer of titanium tetrachloride, DuPont, requested a determination that waste from its production process be categorized as beneficiation waste, on the ground that its process was different from the purely mineral processing processes used by other manufacturers and included a beneficiation step as well which generated the wastes at issue. However, EPA chose to clarify DuPont's waste acids as mineral processing wastes. DuPont challenged this decision, and the Court remanded EPA's decision for further consideration on the grounds that the Agency's explanation for its decision was unclear. (*Solite Corporation v. EPA*, 952 F.2d at 494-95. The Agency is today responding to the Court's directive to clarify its rationale for determining whether this waste is properly classified as a beneficiation or mineral processing waste.

EPA established the broad standard for making this determination in the 1989 rule (see 54 Fed. Reg. 36592,

36616, September 1, 1989). As described in section III above, beneficiation operations typically serve to separate and concentrate the mineral values from waste material, remove impurities, or prepare the ore for further refinement. Beneficiation activities generally do not change the mineral values themselves other than by reducing (e.g., crushing or grinding), or enlarging (e.g., pelletizing or briquetting) particle size to facilitate processing. A chemical change in the mineral value or the waste product does not typically occur in beneficiation. Mineral processing operations, in contrast, generally follow beneficiation and serve to change the concentrated mineral value into a more useful chemical form and change the chemical composition of the waste. In contrast to beneficiation operations, processing activities often destroy the physical structure of the incoming ore or mineral feedstock such that the materials leaving the operation do not closely resemble those that entered the operation. Typically, beneficiation wastes are earthen in character, whereas mineral-processing wastes are derived from melting or other chemical changes. EPA is not reopening this standard here. EPA is only applying the existing Bevill criteria to this particular set of facts.

The Du Pont Corporation operates a chloride-ilmenite process at three of its plants in which low-grade ilmenite ore is utilized to produce high-purity titanium tetrachloride. Because ilmenite contains significant quantities of iron, use of this process requires removal of the iron from the titanium feedstock, in the form of iron chloride. Du Pont contends that the iron chloride waste is a beneficiation waste because it is generated through the removal of iron from the ilmenite ore before the physical structure of the ore is destroyed in the subsequent chlorination step of the chloride-ilmenite process. This process, conducted by Du Pont at its Edgemoor, Delaware and New Johnsonville, Tennessee plants and at its DeLisle plant in Pass Christian, Mississippi, is described in more detail in the background document in the RCRA docket. Du Pont conducts a similar process in Antioch, California using rutile, which has a lower iron content than ilmenite.

There are four sequential steps in Du Pont's chloride-ilmenite process, the first two of which occur within the same vessel: (1) chlorine gas reacts with iron from the ilmenite ore to form iron chloride gas; (2) chlorine gas reacts with titanium in the ilmenite ore to form titanium tetrachloride gas; (3) the iron chloride is condensed and separated to

form a waste iron chloride acid; and finally (4) the titanium tetrachloride is condensed and processed to form titanium oxide pigment, the saleable product. The issue remanded in *Solite* is whether the iron chloride acid waste, which is produced in gaseous form at step (1) but removed from the vessel as a liquid at step (3), is a mineral processing waste that does not qualify for the Bevell exemption, or a beneficiation waste covered by the Bevell exclusion under 40 CFR 261.4(b)(7).

After further review of this issue, the Agency today proposes to reaffirm its initial finding that these wastes are mineral processing wastes. The distinction between beneficiation and mineral processing for the chloride-ilmenite process is not an obvious one, as the *Solite* court recognized. However, after carefully reviewing all the information provided by DuPont, EPA continues to believe that the waste is most accurately characterized as a mineral processing waste. Because, in the earlier rulemaking, EPA and DuPont both characterized the chloride-ilmenite process as involving both beneficiation and mineral processing, the court's analysis took the same approach. The court found no explanation in the record as to why this particular mixed process should be characterized, as a whole, as mineral processing rather than beneficiation, and remanded to EPA for a fuller explanation or reconsideration. Since the Agency now believes that it is more accurate to state that no beneficiation occurs in this process at all, that issue is no longer the focus of analysis.

The type of operation used by DuPont in the chloride-ilmenite process, chlorination, must be evaluated in light of EPA's definitions of mineral beneficiation and processing. Indications of mineral processing are found when there are significant chemical changes in the ore being processed and the products and waste streams from the operation are significantly different from the ore entering the operation. Beneficiation, in contrast, usually involves non-chemical changes such as crushing and grinding to concentrate the ore (see 54 FR 36618, September 1, 1989). While some processes that change the chemical character of the ore have been included in the regulatory definition of "beneficiation", these are relatively few and are specifically enumerated in that rule. (See 54 FR 36618-36621, September 1, 1989 and 40 CFR 261.4(b)(7)).

In addressing this issue previously, EPA assumed that at least some of the

steps in the chloride-ilmenite process involved beneficiation. The court's analysis reflected this assumption and focused on how a process that involved both beneficiation and mineral processing steps should be characterized for regulatory purposes. However, the Agency has reexamined the sequence of operations and now believes this conclusion was inconsistent with EPA's general approach to defining beneficiation. Specifically, even the first step in the process, chlorine gas reaction with iron from the ilmenite ore to form iron chloride gas, is best characterized as a mineral processing—not a beneficiation operation. In DuPont's process, chlorine gas is reacted with the iron in the ore in the first step to produce a new and significantly different chemical compound than the feedstock ore, namely liquid iron chloride waste acid. The iron is more than simply removed; the solid iron in the ore undergoes a chemical reaction with the chlorine gas to form a new compound, namely iron chloride gas. This reaction is the beginning of a significant change to the physical and chemical structure of the ore. This change is similar to the reaction of chlorine gas with solid titanium to form titanium tetrachloride gas. The reaction of chlorine gas with both iron and titanium, which occur in the same vessel, destroys the physical and chemical nature of the ore. In fact, these same reactions occur at DuPont's Antioch facility and generates a similar iron chloride waste acid that DuPont is not claiming to be a beneficiation waste (Identification and Description of Mineral Processing Sectors and Waste Streams, EPA Office of Solid Waste 1995).

The iron chloride waste is more similar to such typical mineral processing wastes as acid plant blowdown than to classic beneficiation wastes such as mill tailings. In terms of mineral processing, the removal of iron from a titanium ore is no different than the removal of lead and other compounds during the smelting of a copper ore which produces the acid plant blowdown.

It is correct that some processes that involve a chemical change, such as heap leaching, are treated as beneficiation. However, such processes generally result in a waste stream that is very similar in nature to ore or mill tailings. While such processes also generate a liquid, metal-bearing material that is wholly unlike the original ore, that material is not waste but goes into the production process. In contrast, the chloride-ilmenite process generates a liquid waste stream entirely different in

character from the ore. The remaining portion of the ore remains in process (and then only for the short period of time before it becomes a gas). Since it is the waste that is the principal source of environmental concern, it is useful in drawing the line between beneficiation and mineral processing to consider whether the waste, as opposed to the material remaining in production, is generally similar in nature to the original ore. Under that analysis, the DuPont process would not appear to be beneficiation.

Furthermore, as stated earlier, the rule that defines "beneficiation" enumerates a limited number of processes that constitute beneficiation even though they do involve some chemical as well as physical change to the ore. However, the initial step of the chloride-ilmenite process is not one of those processes. This step involves chlorination. The rule states that chlorination constitutes beneficiation only when it is used in preparation for a leaching operation that does not produce a final or intermediate product that does not undergo further beneficiation or processing (see 40 CFR 261.4(b)(7)). In DuPont's case, the first step of the operation is followed not by a leaching step but by further chlorination, which in turn continues to destroy the chemical and physical structure of the ore. In other words, no part of the production sequence involving the reaction of ilmenite ore with chlorine in the fluid bed reactor falls within the definition of beneficiation. Accordingly, all wastes associated with this sequence are mineral processing wastes. Because the liquid iron chloride wastes from this operation are not high volume, whether considered separately or as part of the larger titanium tetrachloride industry, they are not eligible for the Bevell exemption.

Nevertheless, even if the first step were considered beneficiation, EPA believes that strong policy reasons exist for treating the wastes from this particular mixed process as mineral processing wastes. As the court recognized, a process like DuPont's may not fall neatly into one category or the other. In such cases, it will only lead to regulatory uncertainty if it is necessary to try to ascertain which part of a multi-step process a particular waste derives from (especially where, as here, the wastes derive from more than one step and are commingled when they exit the process). The beneficiation-mineral processing distinction is already complicated when applied to physically distinct processes, and EPA believes that adding further complications, by attempting to draw the distinction

among steps that all occur within the same physical processing unit, will make such determinations unduly difficult, time-consuming, and dependent on the precise facts at a particular place and time (e.g., the mix of wastes from a process might even vary over time). In such cases, EPA believes that the overall process should be assessed as a whole, to determine whether it appears more like beneficiation or like mineral processing. In this case, the ilmenite enters the process as an ore, and is completely transformed within a single vessel into two chlorinated streams (which exit the vessel in gaseous form). This kind of complete transformation is much more in the nature of mineral processing than beneficiation. That is, the waste generated from this chloride-ilmenite reaction is low volume and highly toxic. Furthermore, as EPA noted in the previous rulemaking, the waste stream at issue is very similar in content to the waste stream from the "chloride" process, which EPA found (without challenge) to be mineral processing.

In the prior rulemaking, DuPont asserted that the first step of its process was similar in nature to processes used by others for enhancing the titanium concentration in ilmenite, and that those other processes were being treated by the Agency as beneficiation. However, those processes are not before the Agency at this time and without more detailed information on the processes involved EPA is taking no position on whether the analysis here might alter its approach to characterizing those processes and wastes should that question be presented.

The Agency is proposing that iron chloride waste from the production of titanium tetrachloride using the chloride-ilmenite process be classified as a mineral processing waste that is not eligible for the Bevill exemption. Further, the Agency believes this rule will not impose significant regulatory costs on the titanium sector using the ilmenite process since much of the iron chloride acid wastes are no longer generated due to process changes. (See Identification and Description of Mineral Processing Sectors and Waste Streams, EPA Office of Solid Waste 1995). The Agency encourages all interested parties to provide comments or further information on this issue.

V. Land Disposal Restrictions for Mineral Processing Wastes

EPA is proposing to apply the existing Universal Treatment Standards (UTS) to the newly identified mineral processing wastes; i.e. to the mineral processing

wastes that exhibit a characteristic and do not have Bevill status and are not excluded from being solid wastes due to recycling. Existing data indicate that these wastes are similar to those for which the UTS are achievable, and consequently that UTS fairly reflect the performance of Best Demonstrated Available Technology for these wastes. See generally "BDAT Background Document for Mineral Processing Wastes" in the docket for this proposed rule.

A. Treatability Data

In developing treatment standards for these wastes, EPA investigated several sources of treatability data. The primary sources of data reviewed include sampling data from the Office of Research and Development, Office of Water, responses (from waste generators), RCRA Section 3007 requests for information, EPA-sponsored surveys of facilities in the mining and mineral processing sectors, public responses to proposed rules on EPA's interpretation of the Bevill exclusion, and various other literature sources.

EPA also examined the available data and transferability of treatment data from other metal-bearing wastes. EPA specifically looked at data for wastes that are comprised primarily of inorganic materials and that also contained a wide range of metals and/or mixes of metals. Most of these data are for metal-bearing RCRA hazardous wastes (both listed and characteristic wastes). Other treatability data involves contaminated soils from Superfund mining sites.²¹

Furthermore, to assess the general treatability of the mineral processing wastes, EPA compared the concentrations of metals in untreated mineral processing wastes with the untreated concentrations corresponding to the data used in developing UTS. (See the background document.) Results

²¹ Notwithstanding EPA's solicitation of treatment data from mineral processing wastes (Advanced Notice of Proposed Rulemaking—Phase IV), EPA presently has limited information on actual treatment of mineral processing wastes. An elemental phosphorous facility reported generating four different hazardous process waste streams, and presented total constituents and TCLP data for these waste streams. (See "BDAT Background Document for Mineral Processing Wastes" in the docket for this rule.) All four untreated waste streams exceeded UTS levels and consequently will have to be treated when this rule is finalized. Treatment data for the characteristic metals, as well as metals that could be underlying hazardous constituents, was submitted for 45 samples. All 45 sampling events met the UTS levels with the exception of one data point (barium exceeded UTS levels). The detection limit for selenium was above the UTS level, and consequently could not be evaluated. (See "BDAT Background Document for Mineral Processing Wastes" in the docket for this rule.

of analysis showed that most of the metals were present at concentrations below the metal levels in the untreated wastes used to set UTS. Specifically, for all the metals in wastewaters, almost 90 percent were found to be at levels below those in the corresponding untreated wastes. Likewise, for metals in nonwastewaters, more than 80 percent of the concentration data points were found to be below levels in the corresponding untreated wastes used to set UTS, with one exception. For thallium, 60 percent of the data points for untreated mineral processing wastes were above levels found in the untreated wastes used to develop the thallium UTS. For this reason, the Agency is concerned that the wastes considered in developing the thallium UTS may not have reflected treatment of wastes with significant concentrations of thallium, and solicits data on potential revisions to thallium standards for mineral processing wastes.

B. Universal Treatment Standards (UTS)

As stated above, the Agency is proposing to apply UTS to treat the metal and cyanide hazardous constituents in the newly identified mineral processing wastes. The nonwastewater treatment standards for 10 of the metals is based on the performance of High Temperature Metal Recovery (HTMR) processes, and also can be achieved by stabilization. The standards for arsenic are based on vitrification and the standard for mercury on roasting or retorting. Cyanide standards can be achieved by performance of combustion technologies including HTMR.²² The metal UTS for wastewaters were based on chemical precipitation as BDAT. Depending on the initial concentration of metal constituents in the wastewater, operating conditions such as retention time, flocculating agents, reagent concentrations such as iron affect solubility of other metals, and mixing

²² Materials being recycled for metal recovery that would be excluded from being solid wastes under this proposal would normally be processed in an HTMR type of process (usually smelting). Residues from that processing thus would likely meet the treatment standards proposed in this rule.

In addition to the HTMR and stabilization technologies mentioned in the section discussing TC metals above, several hydrometallurgical technologies (based primarily on leaching) have been tested and documented by the Bureau of Mines as capable of concentrating valuable metals from low-grade ores or from tailings. The residual (i.e., extracted material) is often then suitable for further processing. EPA does not currently have a significant amount of data on leaching recovery processes or other hydrometallurgical processes for metal-bearing mineral processing residues. Based on engineering judgment, however, it is likely that these technologies could be designed such that the residues also could meet UTS.

may need to be adjusted to comply with the standards. These high concentrations are a direct result of the techniques and principles used to process the minerals. Anions, such as cyanide, have been specifically selected as part of the mineral processing design in order to provide the necessary extraction conditions for certain metals and tend to favor dissolution of some metals over others. Furthermore, EPA is not precluding the use of metal recovery technologies for wastewaters, which typically include reverse osmosis, cation exchange, chelation, solvent extraction, electrolysis, and selective precipitation.

The cyanide wastewater and nonwastewater UTS were based on the treatment of wastewaters via alkaline chlorination. These standards were promulgated for total and amenable cyanides. In applying UTS level wastewater standards to these wastes, EPA notes that metal and cyanide limits set for this industry under CWA categorical standards are equal to or less than the UTS.

Mineral processing wastes may also exhibit some of the other characteristics, usually corrosivity or reactivity. In such cases, the waste would have to be treated to remove the characteristic property as well as to treat any underlying hazardous constituents that are present in treatable concentrations. With respect to treatment of corrosive mineral processing wastes, EPA has information indicating that recovery processes such as solvent extraction, crystallization, and incineration can recover the sulfuric acid for reuse (see "Treatment Technology Background Document" dated January, 1991; also Background Document supporting BDAT for K061, dated August, 1991). EPA requests comment on any recovery process for the acidic wastes from mineral processing. Information submitted should include limitations based on waste specifications and performance data showing untreated and treated concentrations of the metal impurities found in these corrosive wastes.

This proposal also covers one further, somewhat anomalously classified, type of mineral processing waste—newly identified wastes from manufactured gas plants. During the process of developing the Phase II rule, EPA received several comments requesting clarification of the regulatory status of de-Bevilled wastes from manufactured gas plants. These wastes are considered to be from mineral processing, for reasons explained in the 1989 regulatory classification rulemaking. 54 FR 36592, 36619 (September 1, 1989). The Agency

indicated that these newly identified wastes would be subject to treatment standards developed for newly identified mineral processing wastes in this proceeding. 54 FR at 36624. Today's proposal applies to all of the hazardous wastes from manufactured gas plants that no longer have Bevill status. Unlike the other mineral processing wastes, however, these wastes are primarily organic and thus would be amenable to treatment by combustion technologies. Since combustion is generally not a matrix-dependent type of treatment, EPA sees no reason that these wastes could not be treated to achieve UTS for the contained organic hazardous constituents.

VI. Capacity Determination for the Newly Identified Mineral Processing Wastes

A. Introduction

This section summarizes the results of the capacity analysis for the newly identified mineral processing wastes. For details on data sources, methodology, and the capacity analysis for the wastes covered in this proposed rule, see the "Background Document for Capacity Analysis for Land Disposal Restrictions, Phase IV—Newly Identified Mineral Processing Wastes (Proposed Rule)."

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

EPA's decision on whether to grant a national capacity variance is based on the availability of alternative treatment or recovery technologies. Consequently, the methodology focuses on deriving estimates of the quantities of waste that will require either commercial treatment or the construction of new on-site treatment as a result of the LDRs. Quantities of waste that will be treated adequately either on-site in existing systems or off-site by facilities owned by the same company as the generator (i.e., captive facilities) are omitted from the required capacity estimates.²³

²³ Traditionally, capacity analyses have focused on the demand for alternative capacity once

B. Capacity Analysis Results Summary

EPA is considering several regulatory options that may affect the determination of a national capacity variance for the newly identified mineral processing wastes. Details of the methodology and estimates of affected facilities and waste quantities are provided in the capacity analysis technical background document described above.

EPA estimates that for the regulatory options described previously for the newly identified mineral processing wastes, few (if any) facilities or waste quantities will be affected by this rule. This estimate is based on data indicating that the current predominant management of these wastes, stabilization, will be adequate for meeting the proposed treatment standards. Thus, a national capacity variance is not warranted for all or most of these wastes since ample stabilization treatment capacity exists. Exceptions appear to be the relatively small quantities of nonwastewaters with sufficiently high levels of arsenic or mercury and with certain types of waste characteristics for which treatments such as vitrification (for arsenic-containing wastes) or acid leaching/retorting (for mercury-containing wastes) might be required. Because these treatments do not appear to be commercially available at this time, EPA is proposing to grant a one-year national capacity variance for characteristically hazardous arsenic nonwastewaters and High Mercury Subcategory nonwastewaters (i.e., 260 mg/kg and above total mercury). EPA also is considering to further define which arsenic wastes would not be amenable to available treatment to meet the standards, and thus would need the variance. For example, EPA could use criteria such as concentration (as with mercury wastes), metal species, and/or waste characteristics.

Because the information on which these proposed variance decisions are based may be incomplete or dated, EPA requests data on the generation, characteristics, and management of the newly identified mineral processing wastes, particularly for any wastes that may pose unique treatability and/or capacity problems. Furthermore, although EPA believes that stabilization

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

can meet the treatment standards proposed for the majority of these wastes, EPA encourages the use of recovery technologies where feasible. EPA requests comments and data on metals recovery processes including applicability to different waste groups, capacity, and whether additional time will be needed to construct these processes.

EPA currently does not have data on the quantities of soil and debris that may be contaminated with newly identified mineral processing wastes. However, as with other newly identified mineral processing wastes, few (if any) facilities or waste quantities are likely to be impacted by the proposed rule. Therefore, EPA is proposing not to grant a national capacity variance for soil and debris contaminated with newly identified mineral processing wastes. EPA requests comment and data on the generation and management of soil and debris contaminated with newly identified mineral processing wastes.

Finally, despite the uncertainty about quantities of radioactive wastes mixed with newly identified mineral processing wastes, any new commercial capacity that becomes available will be needed for mixed radioactive wastes that were regulated in previous LDR rulemakings and whose variances have already expired. Thus, EPA has determined that sufficient alternative treatment capacity is not available for any newly identified mixed radioactive/mineral processing wastes, and therefore is proposing to grant a two-year national capacity variance for these wastes. EPA requests comment and data on the generation and management of newly identified mixed radioactive/mineral processing wastes.

EPA notes further that the proposal would encourage recycling of mineral processing secondary materials through an exclusion from the definition of solid waste. This should, among other things, reduce the amount of wastes subject to LDR standards and correspondingly reduce the necessity of national capacity variances. However, where land-based process units are involved, the exclusions are conditioned on the units' satisfying certain criteria in a manner that may require some time. For example, if a unit must install groundwater monitoring, or make changes in design, or receive case-by-case approval of alternative design or operating practices from an authorized state, the changes could not be made immediately. EPA is not proposing any type of national capacity variance to accommodate these situations. Because the portions of the rule dealing with amendments to the solid waste

definition are not being proposed pursuant to HSWA, they would not take effect immediately in authorized states, and instead would wait on the authorization process. This could take several years. It is EPA's initial view that this process would provide sufficient lead time in authorized states for facilities intending to utilize land-based process units to adjust their operating practices.

C. Mineral Processing Wastes Injected Into Class I Underground Injection Wells

Class I injection wells currently receive mineral processing wastes for which EPA is proposing treatment standards today. The volumes vary in amount by facility and are all disposed on site. None of these facilities transport their waste off-site or currently have the necessary capacity to treat their waste on-site by acceptable means. Additionally, for those facilities affected by the proposed treatment standards which are unable to make a successful no-migration demonstration and/or are unable to meet the requirements of other proposed options, constructing a treatment facility on-site would require a significant amount of time. Therefore the Agency is proposing to grant a two-year national capacity variance for these wastes.

EPA requests comments on this proposed capacity determination. In particular, EPA requests data on the generation, characteristics, and management of the wastes injected into Class I wells. In addition, EPA requests data on the availability of treatment capacity for these wastes.

Part Two: Other RCRA Issues

I. Exclusion of Processed Scrap Metal and Shredded Circuit Boards from the Definition of Solid Waste

A. Processed Scrap Metal Being Recycled

1. Summary

The Agency proposes to amend the definition of solid waste by excluding processed scrap metal being recycled from RCRA jurisdiction. After further study, the Agency believes that processed scrap metal being recycled is distinct from other secondary materials defined as wastes due to established markets for the material's utilization, inherent positive economic value of the material, the physical form of the material, and absence of damage incidents attributable to the material.

2. Background

When EPA amended the definition of solid waste in 1985, the Agency

established RCRA jurisdiction over some secondary materials being recycled based upon both the type of material and how it was recycled or managed. See 40 CFR § 261.2(c). As part of the final rule, the Agency created a classification for scrap metal. 50 FR 614, 624 (January 4, 1985). The Agency defined scrap metal as bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that are combined together with bolts and soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled. The Agency excluded from the definition of scrap metal: secondary materials from smelting and refining operations (e.g., slags, drosses and sludges), liquid wastes containing metals (e.g., spent acids and caustics), liquid metal wastes (e.g., liquid mercury), and metal-containing wastes with a significant liquid component (e.g., spent lead-acid batteries). The Agency distinguished scrap metal from these other metal-bearing secondary materials because of the differences between them in physical form, content, and manageability.

Although the Agency included scrap metal in the definition of solid waste (and hazardous waste if the material exhibits a characteristic of hazardousness), EPA exempted all scrap metal being recycled from RCRA Subtitle C regulation as an interim measure to allow the Agency to study scrap metal management. 50 FR 614, 649; 40 CFR 261.6(a)(3)(iv). EPA deferred regulating scrap metal being recycled in order to determine whether RCRA regulation and enforcement of scrap metal would be feasible and necessary. Based on further study of literature, databases and consultation with Bureau of Mines commodity trade specialists, the Agency believes that because processed scrap metal being recycled is sufficiently commodity-like, regulation of this material is not necessary. Based on this study and consultation, the Agency also believes that processed scrap metal being recycled should be excluded from the definition of solid waste because this type of material has not been shown to be part of the waste disposal problem.

3. Definition of Processed Scrap Metal

Today's proposal is restricted to scrap metal which has been processed by scrap metal recyclers to be traded on recycling markets for further reprocessing into metal end products. Processing of scrap metal in this context includes: 1) manual or mechanical separation of scrap metal either into specific scrap categories containing

different metals (e.g., ferrous and non-ferrous, copper and steel) or metal and non-metal components (such as shredded steel and fluff), and 2) unit operations such as sintering and melting operations which melt or agglomerate materials such as drosses and fines into scrap metal. In the first category, processing includes but is not limited to bailing, shredding and shearing operations. This category of processing also includes manual or other separation of unprocessed or partially processed scrap metal into separate categories to enhance the economic value of the material. The second category of processing includes unit operations (such as sintering or melting operations) which change the physical form of secondary materials into scrap metal for secondary materials that would not otherwise be scrap metal prior to processing such as drosses and fines.

Processed scrap metal does not include any distinct components separated from unprocessed or partially processed scrap metal that would not otherwise meet the current definition of scrap metal. For example, processed scrap metal does not include batteries, capacitors or other liquid-bearing metal articles; fluff or other non-metal residuals; liquid metals such as mercury or metal-bearing liquids such as spent caustics and acids, and process secondary materials such as slags, drosses, ashes and sludges which have a physical form dissimilar to scrap metal.

The Agency is proposing to exclude processed scrap metal being recycled from the definition of solid waste because EPA believes that this type of secondary material is a commodity-like and has not historically contributed to the waste management problem. Unlike many other metal-bearing secondary materials, processed scrap metal has qualities which make it unlikely to contribute to the waste management problem.

In making this finding, EPA has considered the following factors relevant in determining whether or not processed scrap metal is commodity-like. These factors are the same criteria listed in 40 CFR § 260.31(c) providing a variance from the definition of solid waste for materials that have been reclaimed but must be reclaimed further): 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 a material is managed to minimize loss.

Regarding the first factor or the degree of processing, processed scrap metal as defined in this proposal has been separated, melted or otherwise processed to add value or improve handling qualities. This processing is necessary for the purpose of adding value, meeting product specifications (and subsequent use) and helping to put the metal into a form to help minimize loss either by removing dispersible non-metallic components (e.g., removing fluff) or by converting a dispersible metal (e.g., fines) into a non-dispersible scrap metal form. Virtually all processed scrap metal undergoes further processing prior to being manufactured into a consumer article. However, the economic value added to the processed scrap itself is significant.

With respect to the second factor regarding the value of the material, processed scrap metal is typically traded nationally and internationally in established markets for positive economic value (i.e., the processor is paid by the purchaser for the metal). In general, processed scrap metal is sold under market specifications for purity and physical form to ensure efficient recycling of the material.²⁴

Regarding the third factor, processed scrap metal is very similar to analogous raw metal concentrates and intermediates. For example, in the iron and steel industry, electric arc furnaces (which typically use processed scrap iron and steel as an input) compete in steel production with integrated steel facilities (which use basic oxygen furnaces that typically use iron derived from iron ore as an input). Non-ferrous processed scrap such as aluminum cans is a significant portion of the current aluminum market.

Fourth, guaranteed end-markets at smelters, mills and foundries for processed scrap metal are likely given the economic value added to the material through processing. Because processed scrap has been sorted, sized, separated and agglomerated for insertion into a manufacturing process to produce a metal intermediate or end product, it is likely that processed scrap metal will continue to be a substitute for raw material feedstocks. Because analogous raw materials (e.g., ores) are

²⁴ See Institute of Scrap Recycling Industries (ISRI) Scrap Specifications Circular 1994, Guideline for Ferrous Scrap, Nonferrous Scrap, Paper Stock, Plastic Scrap. Note: some materials listed in this circular which are considered scrap metal by ISRI are not scrap metal under the Resource Conservation and Recovery Act such as battery plates, drosses and other materials.

finite and non-renewable, their decreasing supply will also ensure that end markets for processed scrap metal remain.

Finally, regarding the extent to which processed scrap metal is managed to minimize loss and release to the environment, available information indicates that processed scrap metal has little potential for release because it is usually in a solid non-dispersible form and is managed to minimize loss because of its economic value. The Agency's review of damage incidents on both the Superfund (RODS) database and Damage Incident Data Base (DIDB) related to hazardous waste recycling, consultation with Bureau of Mines commodity trade specialists and relevant literature and on-line searches failed to reveal any incidents where releases to the environment of hazardous constituents were attributable to the management of processed scrap metal itself. In this review, the Agency assessed the potential of any hazardous constituents in processed scrap to be released to the environment during its management prior to final recovery.

However, EPA's review did indicate that materials generated from the recycling of unprocessed scrap were mismanaged and have historically contributed to the waste management problem. These materials include batteries, ash, and other residuals from processing scrap metal. Many of these residuals are subject to full or partial regulations under RCRA Subtitle C.²⁵ The Agency is continuing to evaluate whether or not the regulation of unprocessed scrap is necessary. For the time being, we are proposing to continue to assert RCRA jurisdiction for unprocessed scrap metal being recycled while maintaining the regulatory exemption. The Agency solicits comment on the availability of data for evaluating risks to human health and the environment potentially posed by unprocessed scrap metal destined for reclamation.

B. Shredded Circuit Boards

EPA is also proposing today to exclude shredded circuit boards destined for metal recovery that are managed in containers during storage and shipment prior to recovery from the definition of solid waste in order to facilitate recovery of this material.

Circuit boards destined for recovery are often processed through shredders, hammer mills and similar devices to decrease the size of the boards for a

²⁵ For example, spent lead-acid batteries are subject to specific standards when destined for metal recovery. See 40 CFR Part 266 Subpart G.

number of reasons. First, the smaller size improves the handling of the material. Shredded circuit boards are often shipped in boxes, bulkbags, supersacks, drums and other containers. Shredding increases the bulk density (e.g. the number of boards per container) of the shipment. Second, shredding improves assaying of circuit boards for precious metal (gold, platinum, silver) or base metal content (copper) by allowing representative sampling of a commingled pile of many shredded boards. Finally, shredding circuit boards assists recyclers in destroying proprietary information in circuit boards received from customers. This assures customers of protecting business information that may be in spent circuit boards.

However, shredded circuit boards may not qualify as scrap metal because the fines that are generated when the boards are shredded do not meet the current regulatory definition of scrap metal (scrap metal being recycled is currently exempt from RCRA regulation). These fines are dispersible and so are commingled with the chunks of shredded circuit board and must stay commingled in order to allow an accurate assay of a sample of the shredded boards.

Although shredded circuit boards may not qualify as scrap metal, EPA believes that when these materials are properly containerized when stored or shipped prior to recovery that they are managed more like articles in commerce than wastes. For these reasons, EPA is proposing to exclude shredded circuit boards from the definition of solid waste in order to facilitate their recovery. Although many shredded circuit boards may be eligible for regulatory exemption from 40 CFR Part 266 Subpart F requirements due to their precious metal content, the boards would remain subject to generator manifesting and export requirements. These requirements may operate as disincentives to recovery, especially for shipments abroad because of delays in transporting shipments and receiving payment for processed materials. Since many precious metal recyclers operate on a short cash flow, they are dependent upon their payment for shipments of shredded boards sold to smelters and other processors to pay customers for shipments of circuit boards they receive. EPA believes that this exclusion will facilitate shredded circuit board recovery.

In 1992, EPA issued a memorandum to EPA Regional Waste Management Directors that stated that used whole circuit boards when sent for reclamation could be considered to be scrap metal

and therefore exempt from RCRA regulation. EPA does not propose to disturb this regulatory interpretation with today's proposal for prepared scrap metal. For the time being, used whole circuit boards may continue to be shipped as scrap metal. Used whole boards do not meet the definition of processed scrap metal as defined in this proposal because they are essentially in the same physical form when sent for recovery that they are in when generated.

II. Proposed Reduction in Paperwork Requirements for the Land Disposal Restrictions Program

In January 1995, the Administrator announced a reporting and recordkeeping reduction goal of 25% for the Agency. This Burden Reduction initiative also begins implementation of one of the reinvention projects set forth in the President's March 16, 1995, report on "Reinventing Environmental Regulations." The baseline from which the 25% reduction will be calculated is the reporting and recordkeeping burden hours as described in the Information Collection Request (ICR) documentation as of January 1, 1995. In meeting this goal, the Administrator has committed the Agency to making the necessary changes to existing regulations to reduce the overall Agency paperwork burden by June 30, 1996.

One of the largest programs in terms of reporting and recordkeeping burden in the Office of Solid Waste (OSW) is the Land Disposal Restrictions (LDR) program. The LDR program was created as part of the Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act (RCRA), signed into law on November 8, 1984. In setting concentration levels or methods of treatment for restricted wastes, EPA has implemented numerous reporting and recordkeeping requirements to ensure that the regulated community complies with the regulations set forth by the Agency. As the LDR program has grown, the regulated community better understands the LDR requirements. Therefore some of the paperwork is no longer essential. In order to ease the regulated community's paperwork burden, the Agency has taken action to revise some of the LDR reporting and recordkeeping requirements in previous rules. This notice proposes additional changes to the LDR paperwork requirements.

EPA proposed burden reduction changes in the LDR Phase IV rule on August 22, 1995 (60 FR 43654). Those proposed changes would result in a reduction of approximately 110,000 hours per year of paperwork burden. Today, the Agency is proposing further

changes to the notification requirements found in the LDR program for an estimated reduction of 1,519,000 hours per year of paperwork burden. This reduction combined with the proposed burden reduction from Phase IV, results in proposed reductions in paperwork burden for the LDR program of approximately 1,629,000 hours per year. The Agency believes that the following changes can be implemented without compromising the protectiveness or enforceability of the LDR program.

A. Section 268.7

Under existing § 268.7(a), generators managing restricted wastes must determine whether the wastes meet applicable treatment standards at the point of generation, or are otherwise exempt from those standards. For waste that does not meet the treatment standards as generated, under § 268.7(a)(2), the generator must notify the treatment or storage facility in writing with each shipment. This notification must include the waste code and manifest number, waste analysis data (if available), and other waste specific information.

As part of the Agency's 25% Burden Reduction goal, the Agency is proposing to change this notification requirement to a one-time notification. Thus, if a generator repeatedly generates wastes which do not meet the appropriate treatment standards, but the composition of these wastes, or the process generating the wastes, or the treatment facility receiving the wastes does not change, then the generator would only be required to submit a one-time notification to the receiving treatment facility. A copy of the notification would be kept in the generator's file. If the waste changes, or the process changes, or the receiving treatment facility changes, then the generator would be required to send a new notice to the receiving facility, and place a copy of this new notice in their files.

The proposed one-time notification and certification requirement for wastes that do not meet the treatment standard as generated, however, would not apply to lab packs. Under the LDR program, a generator of a lab pack can either meet the treatment standards and paperwork requirements of all the hazardous wastes included in the lab pack, or meet the streamlined lab pack requirements of § 268.42(c) and the paperwork requirements of § 268.7(a)(9). Today's proposed one-time notification and certification apply only when the waste, the process, and the receiving facility do not change from waste shipment to waste shipment. The Agency believes

that it is highly unlikely that lab packs will contain exactly the same hazardous wastes each time they are generated, since they are typically used to consolidate small amounts of a number of various chemical wastes to facilitate handling and treatment. Therefore, the one-time notification provision would not be appropriate for lab pack wastes. Comments are solicited on this issue.

Under existing § 268.7(b), treatment facilities are required to send a notification when they ship wastes or treatment residue to land disposal facilities or to different treatment facilities for further management. As part of the Agency's 25% Burden Reduction Goal, EPA is proposing that when a treatment facility is shipping waste or treatment residue for further management at a land disposal facility or other treatment facility, and the waste, treatment residue or land disposal/treatment facility does not change, then the treatment facility will only be required to submit a one-time notification and certification to the receiving facility. A copy of the notification and certification would be kept in the treatment facility's file that sent the waste. If the waste or treatment residue changes, or the receiving facility changes, then the treatment facility would be required to provide a new notice and certification to the receiving facility, and place a copy in their files.

B. Clean Up of Part 268 Regulations

In the Land Disposal Restrictions—Phase IV Proposed Rule, dated August 22, 1995, EPA proposed to “clean up” the existing regulatory language that was outdated, confusing or unnecessary. Some sections were clarified, some were condensed and some were altogether removed. The Agency is using the Phase IV proposed regulatory language as the base from which today's changes would be made. Therefore, the regulatory language that follows is a revision to the proposed regulatory language in the August 22, 1995, Phase IV rule (60 FR 43654). For Sections 268.7(a)(2), (a)(9), (b)(3), and (b)(4), comments should be submitted on the regulatory language as it appears in today's rule.

Part Three: Administrative Requirements and State Authority

I. Environmental Justice

A. Applicability of Executive Order 12898

EPA is committed to address environmental justice concerns and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The

Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities, and all people live in clean and sustainable communities. In response to the Executive Order and to concerns voiced by many groups outside the Agency, EPA's Office of Solid Waste and Emergency Response formed an Environmental Justice Task Force to analyze the array of environmental justice issues specific to waste programs and to develop an overall strategy to identify and address these issues (OSWER Directive No. 9200.3-17).

B. Potential Effects of This Rule

Today's proposed rule covers wastes from mineral processing operations. The environmental problems addressed by this rule could disproportionately affect minority or low income communities, due to the locations of some mineral processing facilities and disposal facilities. Mineral processing sites are distributed throughout the country and many are located within highly populated areas. Mineral processing wastes have been disposed of in various states throughout the U.S., representing all geographic and climatic regions. In some instances, the mineral processing waste is generated in one state and disposed of in another. In addition, the Agency found that mineral processing wastes are occasionally disposed of in municipal solid waste landfills. In some cases, mineral processing wastes may be located in low-income rural areas on or near Native American Tribal lands.

Today's rule is intended to reduce risks from mineral processing wastes, and to benefit all populations. It is not expected to cause any disproportionate negative impacts to minority or low income communities versus affluent or non-minority communities.

The Agency is soliciting comment and input on the implications of this rule for environmental justice, from all interested persons, including members of the environmental justice community and members of the regulated community. The Agency encourages all interested parties to provide comments or further information that might assist the Agency in further assessing impacts on minority or low-income populations. Specifically, the Agency is interested in receiving additional information and/or comment on the following:

- The location of mineral processing facilities relative to population centers
- Information indicating that mineral processing wastes have been

mismanaged and co-disposed with other wastes in municipal solid waste landfills.

II. State Authority

A. Statutory Authority

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

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization. New Federal requirements which are less stringent than the State program are not in effect in the State unless and until the State adopts such provisions.

Some portions of today's proposal implement HSWA provisions; others do not. The LDR treatment standards are being proposed pursuant to section 3004 (g) through (k), and 3004 (m). These are provisions added by HSWA. The proposed application of the TCLP to mineral processing wastes likewise implements an HSWA provision, section 3001(g). Thus, the more stringent Federal requirements will take effect immediately in all States. These rules would be added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA, and would take effect in all States, regardless of authorization status. States may apply for final or interim authorization for the HSWA provisions in Table 1, as discussed in the following

section of this preamble. Table 2 in 40 CFR 271.1(j) is also modified to indicate that those provisions of this rule are self-implementing provisions of HSWA. EPA is proposing that all other parts of the rule implement non-HSWA statutory provisions.

Thus, the LDR treatment standards and the application of TCLP (requirements of this rule which have been identified as HSWA), will take effect immediately in all States. States may apply for either interim or final authorization for the HSWA provisions identified in Table 1. The remaining requirements (including the proposed changes to the definition of solid waste for the mineral processing sector) are non-HSWA and will not take effect in the State until the State is authorized for those requirements. The determination of whether a mineral processing waste is a solid waste and thus subject to the LDR treatment standards is a non-HSWA portion of this proposed rule. Because this criterion is non-HSWA, it will not take effect until and unless the State adopts that provision of the rule. Since the treatment standards being proposed in today's rule are HSWA provisions, they will take effect immediately. However, unless the mineral processing waste is currently included in the authorized State's definition of solid waste, the treatment standards will not apply.

B. Streamlined Authorization Procedures

The different levels of authorization review will be more thoroughly discussed in the upcoming HWIR-media proposal. The HWIR-media proposal will explain and take comment on an overall expedited authorization scheme. However, those portions which apply to this proposed rule are discussed below. EPA requests comment on this proposed expedited approach.

1. Applicability of Proposed Phase IV Expedited Authorization

It is EPA's policy to provide as much flexibility as possible in order to encourage States to become authorized for rules under the hazardous waste program. EPA discussed an expedited authorization approach in the proposed Phase IV LDR rule (60 FR 43688, August 22, 1995). In that proposal EPA stated that the expedited approach would apply to those minor or routine changes to the existing program that do not expand the scope of the program in significant ways. Under that approach, the State would be required to certify that provisions it has adopted provide authority that is equivalent and no less stringent than the Federal provisions.

Within 60 days of receiving a complete certification, EPA would provide notice to the public approving the State authorization. Then, the public would have an opportunity for comment, as provided by the existing regulations governing authorization revisions. See 40 CFR 271.21.

The Agency notes that in the Phase IV proposal, EPA proposed that certain portions of the Phase IV rule be authorized pursuant to the conventional authorization procedures. In this proposal, EPA is reproposing whether expedited procedures are appropriate for the following reasons. First, as discussed in the Phase IV proposal, EPA believes that by virtue of a State having obtained authorization for both the base RCRA program and portions of the LDR program, the State demonstrated its capability in the administration and implementation and enforcement of those programs. States that are authorized for the base RCRA program and portions of the LDR program are familiar with the type of rule changes as well as the requisite legal requirements needed to implement the provisions in today's proposed rule. Second, the revisions to the authorized program both in today's proposal and in portions of the Phase IV proposal allow the State program to be authorized to have the flexibility to develop appropriate case-by-case determinations. Thus, the equivalency determination of the State program is more fully evaluated by the way the State implements the program. Finally, this proposed rule would authorize States to make case-by-case determinations for a limited number of units. EPA believes that the addition of a few units does not significantly expand the State program. Accordingly, the Agency believes that another detailed evaluation by EPA is not warranted under such circumstances. EPA believes that EPA's evaluation of the authorized State need only ascertain that the State has the requisite legal authorities and resources to control the land-based units (or, in the case of the Phase IV proposal, impoundments receiving decharacterized wastes).

For these reasons EPA is proposing to give great weight to the statements and legal certification submitted by the State, and believes that the expedited authorization approach discussed in the Phase IV proposed rule is appropriate for this rule with a few additional requirements. In today's proposed rule EPA is proposing that the State, in its certification, provide EPA with assurances that they have the legal authority to implement the key requirements of this rule. EPA will focus its review on the completeness of

the certification to ensure that the key requirements have been addressed.

2. Key Requirements for Assessing Land-Based Units

For today's proposed rule, EPA is proposing an expedited review process similar to the Phase IV proposal except that the certification will include a written assurance that the State has the legal authority to implement the key requirements of this rule.

The key requirements of the State program will primarily focus on the non-HSWA portion of the rule which contains the requirements for changes to the definition of solid waste for the mineral processing sector. That portion of today's proposed rule contains conditional exclusions for mineral processing residuals being managed in land-based process units provided that these units are designed and operated in accordance with the proposed conditions (including conditions developed on a site-specific basis by an authorized State or EPA Region). There are several means of showing that the exclusion is satisfied. Two ways involve the unit meeting specific requirements or conditions as described in this proposed rule. As noted, the third allows the unit to receive a site-specific determination from EPA or an authorized State that the design and operation of the unit is sufficiently protective to indicate that the unit is a process unit, generally considering the factors set out in the environmental performance standard for land disposal units set out in 40 CFR 267.10.

In order to streamline the process for States to become authorized to make these determinations, EPA is proposing to evaluate a limited number of specific criteria as follows:

- First, the State program must demonstrate that it can distinguish land-based units receiving mineral processing residuals from those units operating as waste disposal units, upon consideration, at least in part, of the factors set out in the environmental performance standard set out in 267.10.
- Second, the State must have the following legal authorities: 1) to impose preventive measures (including design and operating conditions) on these units; 2) to establish groundwater protection criteria; 3) to require groundwater monitoring; and 4) to detect and remediate releases of hazardous constituents from the unit to groundwater should such releases occur. It should be noted, however, that the State's authority need not exist solely (or even in part) under State RCRA authorities. States may act, for

example, pursuant to general aquifer-protection authority.

- Third, the State program must provide for public participation in the process of developing requirements for particular land-based units.

EPA is proposing that the State program provide for public participation in the State's process of developing requirements for particular land-based units. Such public participation would include both the unit owner/operator and the general public. Public participation is critical at these mineral processing units because their conditional exclusion from the definition of solid waste is based on specific conditions the public will not be aware of, and have no opportunity to influence, unless they are informed. An aspect of this public participation process would normally include a State's explanation for a site-specific determination, including why particular design and operating conditions were or were not selected (for example, because groundwater is too remote from the unit to warrant any further design above the basic unit integrity standard to prevent contamination).

3. Stringency of Proposed Rule

Authorized States are only required to modify their programs when EPA promulgates Federal standards that are more stringent than the existing Federal standards. The amendments to 268.7 (a) (2) and (9); (b) (3) and (4) in today's proposed rule are not considered to be more stringent than the existing Federal requirements. Therefore, authorized States are not required to modify their programs to adopt requirements equivalent to the provisions contained in today's proposed rule.

Today's rule contains one provision which is less stringent than the current Federal program. This is the provision which would allow mineral processing spent materials being reclaimed to be excluded from the definition of solid waste. This provision can be adopted at the States' option. However, EPA strongly encourages States to adopt this provision. As stated earlier in the preamble, part of the purpose of the proposal is to eliminate distinctions among reclaimed spent materials, byproducts, and sludges within this industry. EPA believes that this change, in combination with the conditioned exclusion for the byproducts and sludges, will result in more control over land-based mineral processing units than exists presently, encourage additional material recovery within the industry, and will also simplify the solid waste regulatory classification scheme. In addition, State adoption of

these provisions will provide national consistency.

C. Authorization Procedures

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

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

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

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

application. The requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

III. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is "significant." The Order defines a "significant" regulatory action as one that "is likely to result in a rule that may have an annual effect on the economy of \$100 million or more," among other criteria.

The Agency estimated the costs of today's proposed rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considered compliance cost and economic impacts for ensuring adequate control of hazardous mineral processing waste streams which are not Bevill-exempt (hereafter referred to as non-exempt). This rule covers these streams which are: (1) treated and land disposed; (2) stored in land-based prior to reinsertion into a mineral processing unit, and; (3) co-processed with virgin ores in land-based mineral beneficiation units. The analysis considered compliance cost and economic impacts for all non-exempt mineral processing streams that are subject to treatment standards under Part 268.

1. Methodology Section

All options described below include the application of universal treatment standards for mineral processing wastes which are disposed of in land disposal units and vary in their application of RCRA jurisdiction and definition of solid waste to mineral process wastes being recycled. Four regulatory options were considered in this proposed rule: (1) The recommended option of a conditional exclusion from the definition of solid waste for mineral processing wastes stored in land based units prior to reinsertion of these materials into a mineral processing facility and allowing conditional mixing/reclamation of mineral processing wastes in mineral beneficiation process units (this is the proposed regulatory scheme described in greater detail under Section I.F. above); (2) no change to the current definition of solid waste for mineral processing wastes (this is described in greater detail under Section I.H.1. Alternative Approaches above as Status Quo); (3) the recommended option applied only to mineral processing wastes currently considered solid wastes if reclaimed (this is described in

greater detail under Section I.H.2. of Alternative Approaches as Apply Definition of Solid Waste Changes Only To Spent Materials); and (4) the National Mining Association industry option of excluding from RCRA jurisdiction all but a limited class of secondary mineral processing materials where the materials in the limited class (e.g., slags, refractory brick) would be subject to minimum standards (this is described in greater detail under Section I.H.3. Alternative Approaches above as National Mining Association Approach). The Agency has conducted quantitative regulatory impact analyses for the recommended option (Option 1) and the status quo option (Option 2); other options (Options 3 and 4) are being evaluated qualitatively.

The Agency calculated volumes of mineral processing waste from a combination of reported volumes and estimated quantities of wastes to product ratios using existing information. Mineral processing streams were categorized based on their likely toxicity and recyclability. Mineral processing waste streams which were believed to be either non-hazardous or not a solid waste because they are believed to be a characteristic sludge or by-product that is completely reclaimed (see 40 CFR 261.2(c)(3)) were assumed to incur no Subtitle C costs in the baseline. The Agency managed uncertainty about volumes generated and management scenarios through bounding analysis which included estimates of a minimum, expected, and maximum scenarios. The expected scenario is reported below.

Compliance costs were divided into two sections: treatment and disposal (assumes neutralization and dewatering for wastewaters; cement stabilization for solids) and recycling. Treatment and disposal costs for mineral processing wastes were estimated according to volumes of mineral processing wastes believed to be non-recyclable and partially-recycled within each of the mineral processing sectors. Recycling compliance costs, by contrast, were estimated by the cost of purchasing, operating and maintaining non-land based storage units (i.e., tanks, containers and containment buildings).

Economic impacts are estimated by comparing the ratio of waste management costs to total volumes and both the total economic value and the value added of mineral processing across mineral sectors. Health benefits were estimated from available data and expressed in terms of screening level estimates of individual cancer and noncancer risks reduced in selected mineral processing wastes.

Detailed discussions of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's proposed rule, followed by a presentation of the cost, economic impact and benefit results may be found in the background document "Regulatory Impact Analysis Of The Supplemental Proposed Rule Applying Phase IV Land Disposal Restrictions To Newly Identified Mineral Processing Wastes" which is in the docket for today's proposed rule. The Agency would like to have better information and solicits comment regarding how many non-exempt mineral processing streams are generated, volumes, number of affected facilities, current management practices, total hazardous constituents concentrations, leachate hazardous constituent concentrations, available treatment technologies, treatment costs, and economic impact.

2. Results

a. Volume Results. The Agency has estimated the volumes of mineral processing wastes potentially affected by today's proposed rule in the background document "Regulatory Impact Analysis Of The Supplemental Proposed Rule Applying Phase IV Land Disposal Restrictions To Newly Identified Mineral Processing Wastes" which was placed in the docket for today's proposed rule.

The Agency requests comment on waste volumes affected by this proposed rule.

b. Cost Results. The Agency has prepared a cost and impacts analysis for the recommended and status quo options previously described in this preamble. Under the recommended option (referred to as Option 1 in this section), the Agency proposes to: 1) Apply treatment standards for mineral processing wastes which are land disposed, 2) conditionally exclude from RCRA jurisdiction and regulation certain mineral processing wastes stored in land based units prior to being reinserted into a mineral processing unit and 3) allow co-processing of certain mineral processing wastes with raw materials in Bevill units. The other option the Agency has analyzed (referred to as Option 2 in this section) also applies treatment standards for mineral processing wastes which are land disposed but retains the current definition of solid waste as it relates to mineral processing residues. Option 2 also does not address the issue of mineral processing residues that are co-processed with raw materials in Bevill units.

The Agency has estimated that roughly 181 facilities (assuming one land-based unit per facility) under all options would be affected by this rule. The Agency estimates that total expected annual compliance costs for facilities under the recommended Option 1 range from \$12 million to \$141 million. Total expected annual compliance costs for facilities under the status quo Option 2 are estimated to be in the range of \$0 to \$127 million. The ranges for these estimates reflect only the uncertainty surrounding the extent of prior treatment of mineral processing residues in the baseline. If larger quantities of mineral processing residues are treated in the baseline prior to land disposal, the total compliance costs for this rule would be closer to the low end of the range. If relatively few land disposed mineral processing residues are treated prior to disposal, then total compliance costs for this rule would be closer to the high end of the range. EPA solicits comment on the extent of prior treatment reflecting current practices in the mineral processing sector for land disposed mineral processing residues which are considered hazardous when land disposed. (As mentioned above, these ranges and other numerical values in the discussion of the regulatory impact analysis are presented for an expected case scenario. The expected case scenario provides numerical values of costs, economic impacts and benefits which are between a minimum and a maximum case scenario. The estimated range of compliance costs under Option 1 are from \$7.5 million under the lower bound minimum costing scenario to \$360 million under the upper bound maximum costing scenario. The estimated range of compliance costs under Option 2 are from \$0 million under the lower bound minimum costing scenario to \$336 million under the upper bound maximum costing scenario. The use of minimum, expected and maximum case scenarios reflects uncertainty resulting from data limitations regarding the number, volume, toxicity and management practices of mineral processing residue streams. EPA is soliciting comment on these and other data mentioned above.)

There are several additional sources of uncertainty which might further affect the accuracy of these estimates in either direction. The Agency requests additional data and comment to help the Agency refine and revise compliance cost estimates for the final rule. First, compliance costs for the upper bound of these ranges for Option 1 and Option 2 might be higher than

estimated due to: 1) A possibility that high category mercury-bearing mineral processing residues (residues with a total mercury content of more than 260 mg/kg) would have to be treated through roasting and retorting (see 40 CFR 268.42) at a higher cost rather than cement stabilization as modeled in the regulatory impact analysis, and 2) a potential loss of operational efficiency at mineral processing facilities when these facilities are unable to continue to unconditionally land store mineral processing residues (note: this form of operation for spent materials currently represents non-compliance with RCRA Subtitle C regulation). EPA was unable to identify any high category mercury-bearing mineral processing wastes in data reviewed which is believed to be discarded currently. The Agency solicits comment on whether this type of material exists and if so how it is managed now and likely to be managed after final promulgation of this proposal. In addition, a loss of operational efficiency (e.g., ability to store larger quantities of material, user fee revenues from off-site shipments) might increase operational costs resulting from practical limitations on the quantity of material a mineral processing facility stores and resulting losses in revenues. EPA solicits comment about whether and how much of this type of cost might be incurred due to regulatory conditions and limits placed on land-based storage under Options 1 and 2. (Note: EPA has based its cost estimates for mineral processing residues stored in tanks, containers, and containment buildings prior to reprocessing based on 90-day storage units for Option 1 and 2. Owner/operators of mineral processing facilities would have the ability under Option 1 to purchase larger and more expensive 1-year storage units. However, EPA believes that they would not elect to do so unless there would be offsetting costs equal to or greater than the capital storage costs for the 90 day units. EPA solicits comment on the appropriateness of these cost assumptions.)

Second, upper bound compliance costs in these ranges for both Options 1 and 2 might be lower than estimated for a number of reasons: 1) The current analysis does not estimate potential shifts from land disposal of mineral processing residues to recycling resulting from increased treatment (stabilization) costs associated with land disposal and 2) all mineral processing residues currently land stored prior to reprocessing are assumed to require storage prior to reinsertion into mineral processing facilities. Regarding the issue of shifts from land disposal to recycling,

due to data limitations, EPA has estimated compliance cost based on a static assumption that owner/operators of mineral processing facilities will continue to manage residues after the proposed rule is implemented as they had been managed previously whether in land disposal or recycling. Since the proposed land disposal restriction standards will increase land disposal costs for these owner/operators, a more realistic dynamic assumption is that for some mineral processing residues, recycling will become less expensive relative to treatment and land disposal under both Option 1 and Option 2. EPA requests comment on this issue on whether and to what extent this is likely. With respect to the other factor resulting in lower compliance costs, the possibility that some mineral processing residues will not be stored prior to reprocessing, some of these residues may be able to be immediately reinserted without any intervening storage thus not incurring incremental costs of purchasing and operating new storage units. EPA solicits comment on the likelihood and extent of this possibility.

Finally, EPA has identified two sources of uncertainty that may have resulted in overestimated upperbound compliance costs for Option 1: 1) Potential cost savings associated with remining historically discarded mineral processing residues have not been estimated, 2) additional shifts from land disposal to recycling may occur under Option 1 that would not occur under Option 2.

Due to data limitations, EPA has not estimated possible cost savings to owner/operators resulting from remining and processing of historically discarded mineral processing residues (as mentioned previously). In addition to the mineral values present in these residues, these owner/operators might realize costs savings from avoided liability costs of remediating these materials in the event of a release to the environment. EPA solicits comment on the likelihood and extend of these potential cost savings.

EPA also believes that Option 1 might result in greater shifts from land disposal to recycling than the general shift described above for both Options. Option 1 may yield greater recycling for two principal reasons. First, Option 1 clarifies and encourages the use of mineral beneficiation units (e.g. grinding mills used to produce a concentrate from an ore) for mineral processing residues. Second, Option 1 allows owner/operators of mineral processing facilities to store mineral processing residues prior to recovery for

up to year under Option 1 versus 90 days under Option 2. If mineral processing facilities can store larger amounts for a longer time, this raises the possibility of receiving materials off-site from other mineral processing facilities creating greater economies of scale (lower transaction costs, user fee revenues) in the primary mineral processing industry. EPA solicits comment on the likelihood and extent of this potential cost savings.

Costs for the variant of the recommended option applied only to spent materials (Option 3) would probably be similar to the recommended option, for two reasons. First, spent materials are often co-managed with characteristic by-products and sludges. Secondly, the majority of costs incurred under both options are for treatment and disposal, which do not vary between Options 1 and 3. The National Mining Association industry Option 4 would cost less than the other options but would still incur treatment and disposal costs for land disposed mineral processing wastes.

c. Economic Impact Results. The Agency has estimated the economic impacts of today's proposed rule and found that the significance of those impacts vary by mineral processing sector. Results of the analysis were included in the docket for today's proposed rule. Approximately 12 of 31 mineral processing sectors would incur upperbound compliance costs for Option 1 that would exceed 5 percent of the value of the mineral products from each sector. In addition, EPA has evaluated the ratio of estimated waste management cost within a mineral processing sector to the economic value added (value added measures sales revenue minus the costs of raw materials) of the sector to better estimate how industry profits might be affected by compliance costs of today's rule. The analysis showed 3 out of 17 sectors analyzed under Option 1 had ratios of 1 or more (meaning that estimated upperbound waste management cost is estimated to be greater than the value added by the mineral processing sector analyzed). These three sectors include cadmium, rhenium and selenium. An additional five sectors have ratios of greater than 0.5 including lead, antimony, bismuth, beryllium, and tellurium. One possible outcome of these impacts is that individual facilities within a sector would close. Another possible outcome is that where the minerals are co-products of other minerals at the same facility (e.g., cadmium and zinc) that the facility would choose simply to stop processing the co-product. In all, EPA estimates

that there are 24 mineral processing facilities distributed over 8 mineral sectors with ratios above 0.3 indicating the potential for either facility closure or cessation of processing co-products within the facility. The Agency requests comment on the likelihood and extent of these possible outcomes in the mineral processing sectors identified above and other sectors which may be affected. The Agency also requests comment on alternative approaches to the Options analyzed for the proposed rule that suggest ways to lessen these impacts for the affected sectors.

d. Benefit Estimate Results. The Agency has estimated the benefits associated with today's proposed rule. Screening risk results suggest that individual cancer and non-cancer risks may be decreased below 1×10^{-5} and below a reference dose of 1 in a small number of mineral processing facilities. Data available for this analysis is limited to wastes where constituent concentrations are available. Thus, the benefits are not tied to the total number of mineral processing facilities. The Agency is working to broaden this analysis over the range of 181 mineral processing facilities affected by this rule.

The Agency also believes that there will be benefits resulting from Option 1 for historically discarded mineral processing wastes (e.g. flue dusts, slags) which can be remined for mineral value. Option 1 will encourage remining of this material in beneficiation units and decrease metal releases to groundwater and decrease remediation costs at selected sites. The Agency will try to quantify this benefit for the final rule.

Although the treatment of hazardous minerals processing wastes has the potential for providing benefits for human health risk reduction and increased environmental protection due to data limitations, the Agency, due to data limitations did not quantify all impacts. A screening analysis of individual risk reduction was conducted but the data limitations and substantial analytical challenges have prevented the Agency from evaluating additional benefits.

Benefits for this proposed rule as measured by population risk reduction require substantially more information than the Agency has available now. Site specific information on waste characterization, hydrogeological parameters, meteorological conditions and demographic patterns would be needed for a representative number of facilities before national estimates of population risk could be calculated. The Agency does not have sufficient

information and requests comment on these data elements.

While waste management rules to protect ground water have proven in the past to control otherwise unacceptable individual risks, it is unusual to predict high 'population risks' unless there is an unusually large water supply well impacted by the facility, simply because ground water contamination generally moves slowly and locally. It has been the agency's experience that regulations with land disposal restrictions have been found to produce relatively small, quantifiable population risk reductions to individuals exposed to contaminated groundwater via private wells. The individual risk reductions identified by the Agency for this proposed rule are similar to those found in these previously analyzed rulemakings. For example, in the analysis of Land Disposal Restrictions Phase II (40 CFR Parts 148, et al.) for organic toxicity wastes, some of the individual risk were in the range of 10^{-4} , the population risk reductions were found to be only about 0.22 cases of cancer per year. Similarly, in an analysis of benefits for corrective action for solid waste management units, population risk reduction of about 3 cancer cases per year were found when it was assumed that taste and odor thresholds and drinking water regulations would tend to cap exposures. In the corrective action analysis, on average about 12 people within a one mile radius of the unit could be potentially exposed to contaminated groundwater through private wells.

If population densities and prevalence of private ground water wells around mineral processing facilities are similar to other waste management facilities, it is the Agency's expectation that land disposal restrictions for hazardous minerals processing wastes would also achieve relatively small, quantifiable population risk reductions. For these reasons and the data limitations cited above, the Agency has not attempted to address the quantification of population risk reduction for this proposed rule. The Agency asks for comment on this issue.

The Agency believes that, while other types of benefits are extremely difficult to quantify, this rule may produce benefits in the area of ecological risk reduction, reduced natural resource damage and related increase in non-use values for environmental amenities. EPA has not developed a quantitative assessment of these benefits because of budgetary and data limitations and because the quantity of these benefits may be small. The Agency also believes that this rule has the potential for

reducing what may be considered very low probability but high consequence adverse human health or environmental impact if contamination from hazardous minerals processing waste should, because of geological conditions such as karst terrain, reach a major population drinking water source or sensitive environmental location. This proposed rule should lessen the chances of this type of event even though the probabilities of such occurrences are not known.

The data limitations and uncertainty that make analysis of benefits especially difficult also apply to compliance cost estimates. In large part, the uncertainty tends to have the same directional effect on both cost and benefits. That is, the same factors such as hazardous waste volume that could make compliance costs large also would tend to imply higher risks in the baseline. Likewise, low volumes that show little risks would generally create lower compliance costs.

3. Conclusion

EPA recommends Option 1 in part because it believes that it simultaneously clarifies jurisdiction and encourages environmentally sound recycling of mineral processing residues. The conditional exclusion from RCRA jurisdiction proposed under Option 1 for land stored mineral processing residues prior to recovery provides comparative flexibility and cost savings in recycling these materials; rather than extending RCRA jurisdiction to these materials and full Subtitle C regulatory requirements were extended. Option 1 obviates the need for manifesting these materials between mineral processing facilities. Option 1 also does not require many other management standards for waste handlers that are normally required for hazardous wastes recycled under Subtitle C including: design standards for storage units, recordkeeping and reporting requirements, storage permit requirements for materials received from off-site, financial assurance, pre-transport generator requirements, and related requirements. The Agency believes that the absence of these requirements offers the primary mineral processing industry an opportunity to maximize reprocessing of these materials at a minimum cost while still protecting human health and the environment.

4. Regulatory Impact Analysis for Underground Injected Wastes

The Agency has completed a cost-benefits analysis for underground injected wastes in Class I injection wells

affected by the Supplemental Rulemaking for Mineral Processing Wastes. The new proposed supplemental LDRs cover facilities with operating Class I injection wells disposing of newly identified mineral processing wastes that are hazardous due to a characteristic.

According to the available data outlined in the RIA, indications are that of the 223 Class I injection facilities in the nation, up to 20 will be potentially affected by the new supplemental LDRs for mineral processing wastes. Of these facilities, 8 inject nonhazardous waste (3 million tons of restricted wastes) and 12 inject hazardous waste (7 million tons of restricted wastes.) Combined, these facilities may inject up to 10 million tons of waste annually into Class I wells. These Class I injection facilities will now be required to either treat wastes, or file "no-migration" petitions as outlined in 40 CFR 148 (See 53 FR 28118 preamble for a more thorough discussion of the no-migration petition review process).

Of the 12 newly affected Class I hazardous facilities, 11 already have no-migration exemptions approved by EPA and one facility is listed as having a no-migration petition pending EPA. For this analysis, EPA assumes that the Class I hazardous facility with a petition pending will successfully demonstrate no-migration of Phase III wastes prior to promulgation of the supplemental rule. EPA estimates that six Class I nonhazardous facilities will submit a no-migration petition under this rule; two facilities will accept the disposal ban and treat their restricted wastes to UTS prior to injection. The Agency analyzed costs and benefits for today's rule to assess the economic effect of associated compliance costs for the additional volumes of injected wastes attributable to this proposed rule.

In general, Class I injection facilities affected by the LDR Phase III rule will have several options. As previously mentioned, some facilities will modify existing no-migration petitions already approved by the Agency, other facilities may submit entirely new petitions, and still others may accept the prohibitions and either continue to inject wastes after treatment or cease injection operations all together. EPA assessed compliance costs for Class I facilities submitting no-migration petitions and/or employing alternative treatment measures.

For Class I facilities opting to use alternative treatment, the Agency derived costs treating restricted wastes to meet UTS levels prior to injection. EPA estimates that the (mid-range) total annual compliance cost for petitions and alternative treatment to industry

affected by the new supplemental LDR prohibitions will be \$1.0 million. EPA estimates the mid-range total annual compliance costs per Class I hazardous facility to range between \$0.2 million and \$2.0 million; mid-range total annual compliance costs per Class I nonhazardous facility range between \$0.3 million and \$0.8 million. The range of costs for alternative treatment is the result of applying a sensitivity analysis. All of these costs will be incurred by Class I injection well owners and operators. The estimated economic impacts of the proposed rule were based on the random assignment of injection facilities to petition and treatment outcomes using a decision tree analysis method described in the Cost-Benefits Analysis document placed in the docket.

The Agency did not perform a quantified risk assessment for this proposal. However, the benefits to human health and the environment in the Cost-Benefits Analysis document are generally defined as reduced human health risk resulting from fewer instances of ground water contamination. In general, potential health risks from Class I injection wells are extremely low. However, injection is not without risks. In isolated cases, potential risks to human health and the environment may be greater due to abandoned, unplugged wells near the injection well site.

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

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 *et seq.*, when an agency publishes a notice of rulemaking, for a rule that will have a significant effect on a substantial number of small entities, the agency must prepare and make available for public comment a regulatory flexibility analysis that considers the effect of the rule on small entities (i.e.: small businesses, small organizations, and small governmental jurisdictions). Under the Agency's *Revised Guidelines for Implementing The Regulatory Flexibility Act*, dated May 4, 1992, the Agency committed to considering regulatory alternatives in rulemakings when there were any economic impacts estimated on any small entities. (See

RCRA sections 3004(d), (e), and (g)(5), which apply uniformly to all hazardous wastes.) Previous guidance required regulatory alternatives to be examined only when significant economic effects were estimated on a substantial number of small entities.

In assessing the regulatory approach for dealing with small entities in today's proposed rule, the Agency had to consider that due to the statutory requirements of the RCRA LDR program, no legal avenues exist for the Agency to provide relief from the LDR's for small entities. The only relief available for small entities is the existing small quantity generator provisions and conditionally exempt small quantity generator exemptions found in 40 CFR 262.11-12, and 261.5, respectively. These exemptions basically prescribe 100 kilograms (kg) per calendar month generation of hazardous waste as the limit below which one is exempted from complying with the RCRA standards.

Given this statutory constraint, the Agency was unable to frame a series of small entity options from which to select the lowest cost approach; rather, the Agency was legally bound to regulate the land disposal of the hazardous wastes covered in today's rule without regard to the size of the entity being regulated. However, the portion of the proposal which would reclassify various mineral-bearing secondary materials as non-wastes may decrease regulatory costs to a number of mineral processing entities, including small entities.

C. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The overall reporting and recordkeeping burden is estimated to be a reduction of approximately 1,624,434 hours (4,873,303 hours over three years). The burden reduction is due to proposal of one-time notifications and certifications in the August 22, 1995 Phase IV proposed rule (but not accounted for in the proposed Phase IV ICR) and in this supplemental rule. The one-time notifications and certifications will, when final, replace the requirements to send notifications and certifications with each shipment of waste.

A copy of the ICRs for this rule may be obtained from the Environmental Protection Agency, Information Policy Branch, 401 M Street, S.W. (Mail Code 2138), Washington D.C. 20460. The public should send comments regarding the burden estimate, or any other aspect

of this collection of information, including suggestions for reducing burden to EPA; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20460, marked "Attention: Desk Officer for EPA."

IV. Unfunded Mandates Reform Act

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

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

List of Subjects

40 CFR Part 148

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

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

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

Dated: December 15, 1995.

Carol M. Browner,
Administrator.

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

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

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

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

2. Section 148.18 as proposed to be added at 60 FR 11740 (March 2, 1995) and is proposed to be amended at 60 FR 43691 (August 22, 1995) is proposed to be further amended by redesignating paragraphs (a) through (d) as (b) through (e) respectively, and by adding paragraph (a) to read as follows:

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

(a) Effective [Date 2 years from effective date of the final rule], hazardous wastes from mineral processing operations that exhibit a characteristic of hazardous waste; and mixed characteristic hazardous mineral processing wastes/radioactive wastes, are prohibited from underground injection.

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Subpart A—General

3a. The authority citation for Part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

3b. Section 261.1 is amended by adding paragraph (c)(9) to read as follows:

§ 261.1 Purpose and scope.

* * * * *

(c) * * *

(9) "Processed scrap metal" is scrap metal which has been manually or mechanically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal includes but is not limited to scrap metal which has been bailed, shredded, sheared, melted, agglomerated (for fines, drosses and related materials which are not scrap metal prior to agglomeration) or separated by metal type.

4. Section 261.2(c) is amended by revising Table 1 to read as follows:

§ 261.2 Definition of solid waste.

* * * * *

(c) * * *

TABLE 1

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

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

* * * * *

5. Section 261.3 is amended by revising the first sentence of paragraph

(a)(2)(i), and by revising paragraph (a)(2)(iii) to read as follows:

§ 261.3 Definition of hazardous waste.

(a) * * *

(2) * * *

(i) It exhibits any of the characteristics of hazardous waste identified in subpart C. * * *

* * * * *

(iii) It is a mixture of a solid waste and a hazardous waste that is listed in subpart D of this part solely because it exhibits one or more of the characteristics of hazardous waste identified in subpart C of this part. (However, nonwastewater mixtures are still subject to the requirements of part 268 of this chapter, even if they no longer exhibit a characteristic at the point of land disposal.)

* * * * *

6. Section 261.4 is amended by adding paragraphs (a)(13), (a)(14), (a)(15), and (a)(16) and by redesignating existing paragraphs (b)(7) (i) through (xx) as paragraphs (b)(7)(i) (A) through (T), by redesignating paragraph (b)(7) introductory text as paragraph (b)(7)(i) introductory text, and by adding a new paragraph (b)(7)(ii) to read as follows:

§ 261.4 Exclusions.

- (a) * * *
- (13) Processed scrap metal being reclaimed.
- (14) Shredded circuit boards provided that they are stored in containers prior to recovery that are sufficient to prevent a release to the environment.
- (15) Secondary materials (other than hazardous wastes listed in Subpart D of this Part) generated within the primary mineral processing industry from which mineral values are recovered by a primary mineral processing industry production process, provided that:
- (i) The material contains recoverable amounts of minerals;
- (ii) The materials cannot be accumulated speculatively (as defined in § 261.1(c)(8));
- (iii) The owner or operator provides a notice to the Regional Administrator or State Director, identifying the following information: the types of materials to be recycled and the location of the recycling process; and the annual quantities expected to be placed in land-based units.

(iv) The materials must be stored or otherwise managed in process units. A "process unit" is a tank, container, containment building or other unit that is not land-based. A process unit also can include a pile or surface impoundment that:

(A) Is designed and operated so as to satisfy any of the following alternative performance conditions:

(1) The owner or operator ensures that the unit satisfies a groundwater protection standard not exceeding: the maximum contaminant level (MCL) for

metals in Appendix VIII of Part 261 (antimony, arsenic, barium, beryllium, cadmium, chromium (total), lead, mercury, nickel, selenium, silver, and thallium); weak acid dissociable cyanide level of 0.2 ppm; the corrosivity standard in § 261.22 (an aqueous solution with a pH equal to or less than 2.0 or equal to or greater than 12.5); and the ignitability standard in § 261.21 at a location no further than 150 meters from the unit boundary. To demonstrate that this condition is satisfied, the unit must have a groundwater monitoring system consisting of a minimum of one upgradient well and three downgradient wells. Such monitoring wells must be capable of detecting, sampling, and assessing whether the groundwater protection standard is satisfied pursuant to the provisions of 40 CFR 258.51 (except for 40 CFR 258.51(b), 258.53, and 258.54). If a release is detected at levels exceeding the groundwater protection standard, the owner/operator must perform corrective action which attains the groundwater protection standard. During the time when the standard is exceeded, no further mineral processing secondary materials may be placed in the unit; or

(2) Satisfies any of the following design standards: for surface impoundments or piles containing free liquids, is constructed to have the equivalent transmissivity of a liner comprised of a 40 mil geomembrane liner on 12 inches of soil with at least 10^{-5} cm/sec hydraulic conductivity; and for piles not containing free liquids, is located on concrete, asphalt, or soil any of which have the equivalent transmissivity of three feet of clay with 10^{-7} cm/sec hydraulic conductivity; or

(3) Receives a site-specific determination from the Regional Administrator or the State Director that the unit is a process unit and not a waste disposal unit because the unit is designed and operated to minimize releases to the environment and generally is not part of the waste disposal problem. This determination shall consider prevention of adverse effects on ground-water quality, surface water quality, and air quality considering the factors set out in 40 CFR 267.10.

(B) Process units do not include any wastewater treatment surface impoundment whose discharge is ultimately regulated under either section 402 or 307(b) of the Clean Water Act (including facilities which have eliminated the discharge of wastewater).

(16) Secondary materials (other than hazardous wastes listed in Subpart D of this Part) generated within the primary mineral processing industry from which

mineral values are recovered in a beneficiation unit, as defined in paragraph (b)(7) of this section. The material must contain recoverable amounts of minerals.

(b) * * *

(7) * * *

(ii) A residue derived from co-processing hazardous secondary materials excluded under paragraph (a)(14) of this section along with normal beneficiation raw materials remains excluded under this section if the owner or operator meets the following requirements:

(A) The unit must process at least 50% by weight normal raw materials;

(B) The owner or operator must be able to document that the co-processing of hazardous secondary materials does not significantly affect the residues by demonstrating conformance with the criteria set out in 40 CFR 266.112(b)(1) and 266.112(b)(2). The comparison shall be made only with respect to metals listed in Appendix VIII of this Part and cyanide.

* * * * *

7. Section 261.6 is amended by revising paragraphs (a)(3) introductory text and (a)(3)(ii) to read as follows:

§ 261.6 Requirements for recyclable materials.

(a) * * *

(3) The following recyclable materials are not subject to regulation under Parts 262 through parts 266 or parts 268, 270 or 124 of this chapter and are not subject to the notification requirements of section 3010 of RCRA:

* * * * *

(ii) Scrap metal other than processed scrap metal;

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

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

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

Subpart A—General

9. Section 268.7 is amended by revising the introductory text of paragraph (a)(2), the introductory text of paragraph (b)(4) and the introductory text of paragraph (b)(5), and by adding paragraph (a)(9) to read as follows:

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

(a) * * *

(1) * * *

(2) If the waste does not meet the treatment standard: The generator must

send a one-time notice to each treatment or storage facility receiving the waste and place a copy in the file. The notice must include the information in column "268.7(a)(2)" of the Notification Requirements Table in § 268.7(a)(4). No further notification is necessary until such time that the waste or facility change, in which case a new notification must be sent and a copy placed in the generator's file.

* * * * *

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

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

* * * * *

(b) * * *

(4) A one-time notice must be sent with the initial shipment of waste to the land disposal facility and a copy placed in the treatment facility's file. No further notification is necessary until such time that the waste or facility change, in which case a new notification must be sent and a copy placed in the treatment facility's file. Debris excluded from the definition of hazardous waste under § 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, § 268.45, and debris that the Director has determined does not contain hazardous waste), is subject to the notification and certification requirements of paragraph (d) of this section. The one-time notice for all other waste shall include these requirements:

* * * * *

(5) The treatment facility must submit a one-time certification with the initial shipment of waste or treatment residue of a restricted waste to the land disposal facility stating that the waste or treatment residue has been treated in compliance with the applicable performance standards specified in subpart D of this part and the applicable prohibitions set forth in § 268.32 or RCRA section 3004(d) and a copy placed in the file. If the waste or treatment residue changes or the receiving facility changes, the generator or TSD shipping the waste must send a new certification to the receiving facility, and place a copy in their files. Debris excluded from the definition of hazardous waste under § 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, § 268.45, and debris that the Director has determined does not contain hazardous waste), however, is subject to the notification and certification requirements of paragraph (d) of this section rather than the certification requirements of this paragraph.

* * * * *

Subpart C—Prohibitions on Land Disposal

10. Section 268.32 is revised to read as follows:

§ 268.32 Waste specific prohibitions—characteristic hazardous wastes from mineral processing operations.

(a) Effective *[Date 90 days from date of publication of final rule]*, characteristic hazardous wastes from mineral processing operations; and, soil and debris contaminated with characteristic hazardous wastes from mineral processing operations; are prohibited from land disposal.

(b) Effective *[Date 1 year from date of publication of final rule]*, arsenic and high mercury characteristic hazardous wastes from mineral processing operations are prohibited from land disposal.

(c) Effective *[Date 2 years from date of publication of final rule]*, radioactive wastes mixed with hazardous wastes from mineral processing operations are prohibited from land disposal.

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

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

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

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

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to these wastes covered by the extension.

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

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

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

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

Subpart A—Requirements for Final Authorization

12. Section 271.1(j) is amended by adding the following entries to Table 1 in chronological order by date of publication in the Federal Register, and by adding the following entries to Table 2 in chronological order by effective date in the Federal Register:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

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

Promulgation date	Title of regulation	"Federal Register" reference	Effective date
*	*	*	*
[Insert date of publication of final rule in the FEDERAL REGISTER (FR)].	Land Disposal Restrictions for Characteristic Mineral Processing Wastes.	[Insert FR page numbers]	[Insert date of 90 days from date of publication of final rule].
*	*	*	*

* * * * *

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

Effective date	Self-implementing provision	RCRA citation	"Federal Register" reference
*	*	*	*
[Insert date 2 years from date of publication of final rule].	Prohibition on land disposal of characteristic mineral processing wastes and such wastes mixed with radioactive waste, including soil and debris.	3004(m).	[Insert date of publication of final rule] 61 FR [Insert page numbers]. Ditto. Ditto. Ditto.
*	*	*	*

* * * * *

13. Section 271.28 is added to read as follows:

§ 271.28 Streamlined authorization procedures.

(a) The procedures contained in this section may be used by a State when revising its program by applying for authorization for the requirements promulgated by the Land Disposal Restrictions Mineral Processing Waste Rule, provided a State is authorized for Land Disposal Restrictions rules up to the Third Third (55 FR 22520, June 1, 1990).

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

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

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

(3) Certification from the State that its laws provide authority that is equivalent to and no less stringent than the provisions specified in paragraph (c) of this section.

(c) Within 30 days of receipt by EPA of a State's application for final

authorization to implement a rule specified in paragraph (a) of this section, if the Administrator determines that the application is not complete, the Administrator shall notify the State that the application is incomplete. This notice shall include a concise statement of the deficiencies which form the basis for this determination. The State must also include a written assurance that the State has the legal authority to implement the key requirements of this rule. The State program must demonstrate:

(1) That it can distinguish land-based units receiving mineral processing residuals from those units operating as waste disposal units, based in part of factors set out in 40 CFR 261.4(a)(14) and 40 CFR 267.10;

(2) That it imposes preventive measures (including design and operating conditions) on these units;

(3) That it establishes groundwater protection criteria;

(4) That it requires groundwater monitoring;

(5) That it detects and remediate releases of hazardous constituents from the unit to groundwater should such releases occur; and

(6) The State program must provide for public participation in the process of developing requirements for particular land-based units.

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

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

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

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

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

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

(1) In the Federal Register;

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

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

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

(g) Approval of State program revisions under this section shall become effective 60 days after the date of publication in the Federal Register in accordance with paragraph (e) of this

section, unless a significant adverse comment pertaining to the State program revision discussed in the notice is received by the end of the comment period. If a significant adverse comment is received, the Administrator shall so notify the State and shall, within 60 days after the date of publication, publish in the Federal Register either:

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

[FR Doc. 96-586 Filed 1-24-96; 8:45 am]

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