SUPERFUND RECYCLING EQUITY ACT GUIDANCE MANUAL

First Edition

Institute of Scrap Recycling Industries, Inc.
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Institute of Scrap Recycling Industries, Inc.
THE ORIGINAL RECYCLERS®

Superfund Recycling Equity Act Guidance Manual

Superfund relief has become a reality! To take advantage of the relief afforded by the new law, you must be able to demonstrate that you met several conditions regarding your recycling transaction. Although the Act itself may appear complex, determining whether or not you are covered by the new law should not be. The purpose of this Guidance Manual is to provide practical and easy to follow guidance to all ISRI members on the new Superfund Recycling Equity Act.

Getting Started:
There are three basic conditions that you must meet to benefit from the new law. While the specifics may vary depending on when the transaction took place and the recyclable material involved, the basic questions you must ask yourself to determine applicability are:

1. *Does the material meet the definition of a 'recyclable material'?*
2. *Does the transaction meet the conditions for 'Arranging for Recycling'?*
3. *For transactions after February 27, 2000, did you take reasonable care to determine the environmental compliance status, as it applies to the recyclable material, of the facility to which the recyclable material was sent?*

If the answer to all of these questions is yes, then you are on your way to obtaining Superfund Relief! The Manual itself is organized around these questions to help you demonstrate that your transactions are covered under the new law.

First Step:
Read the Overview! This guidance document provides a common-sense review of the new law and describes in plain English the conditions that you must meet to take advantage of the liability relief afforded by the new law.

Second Step:
Evaluate your record-keeping practices unless you retain all sales agreements and purchase orders. You may want to consider keeping a representative sample of sales agreements/purchase orders to show that your material was 'arranging for recycling'. Also, you may want to consider documenting how you took 'reasonable care' to determine the environmental compliance status of the consuming facility. Since these are only suggestions and are not exhaustive, it is imperative that you review the new law to determine what you need to do to protect yourself from third-party Superfund liability.

Questions? Don't hesitate to call ISRI! See end of 'Overview' for contacts.

Institute of Scrap Recycling Industries, Inc.

Superfund Recycling Equity Act Guidance Manual

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Superfund Recycling Equity Act Overview

Your Guide to Obtaining Superfund Relief!

Why was Superfund Relief Necessary?

Prior to the passage of the Superfund Recycling Equity Act on Nov. 29, 1999 a misinterpretation of Superfund's liability provisions did great harm to recycling. Many federal courts previously ruled that Superfund imposed potential liability on persons who sold secondary materials that had been diverted from the waste stream for recycling. These rulings were the result of an overly broad interpretation of the law's provision, which imposed liability on those who "arrange for disposal" of waste containing hazardous substances. Unfortunately, these courts ruled that arranging for recycling was a waste disposal transaction.

Recycling, however, is distinct from, and in practice the opposite of, disposal. Recycling involves the processing of material for the manufacture of a new product. This is in direct contrast to disposal activities which terminate the life cycle of a material. This unintended consequence of Superfund created a market distortion preferring virgin feedstocks over recycled feedstocks. At a site contaminated by a third party through the use of both virgin and recycled materials, the suppliers of the recycled material were held liable for clean-up while the suppliers of the virgin materials were not held liable for cleanup costs. This was because the sale of a virgin material was not considered to be waste disposal and not subject to Superfund liability. Further, if a manufacturer used both virgin and recycled materials and contaminated his site with substances that could only have come from the virgin material, the supplier of the recycled materials could still be liable while the supplier of virgin materials remained exempt.

Over the last six years, the recycling industry made significant progress in reaching agreement with virtually all relevant stakeholders that the prior interpretation of Superfund created a significant disincentive to recycling. Bipartisan legislation correcting this problem, supported by both large and small business, the environmental community, the recycling industry, and the Clinton Administration was well received in both Houses in the past three Congresses. This legislation made it clear that sale of material for recycling is not equivalent to disposal.

The passage of the Superfund Recycling Equity Act of 1999 was imperative for the future of the industry.

Executive Summary

On Nov. 29, 1999, President Clinton signed into law the Superfund Recycling Equity Act (Pub. Law 106-113). The Act corrects an unintended consequence of Superfund that actually discourages legitimate recycling by clarifying Superfund to state that recycling is not disposal, and shipping for recycling is not arranging for disposal. This necessary clarification removes an impediment to reaching America's recycling goals.

There are three basic conditions that you must meet to benefit from the new law. While the specifics may vary depending on when the transaction took place and the recyclable material involved, the basic elements are covered in the following chapters:

Chapter One: Definition of a 'Recyclable Material'

Chapter Two: 'Arranging for Recycling'

Chapter Three: Evaluating the Consumer's Compliance Record

The new law does not exempt anyone who owns or operates a contaminated facility from Superfund liability, nor does it exempt from liability contamination caused in whole or in part by wastes (versus recyclable material) generated by a scrap recycling facility. Furthermore, a recycler's claim to an exemption from Superfund liability may be denied if the government (or other party bringing an action against the recycler) can demonstrate that the conditions outlined in the exclusions apply to the recycler (see **Chapter Four: Exclusions**).

Chapter Five discusses the law's impact on pending and concluded litigation.

The new law provides for relief from liability for both retroactive and prospective transactions at federal Superfund sites. The bill does not apply to state Superfund sites.

"This is the day that the public policy restores recycling as a rewarded, rather than punished activity."

U.S. Senator Trent Lott, Majority Leader
November 19, 1999

Chapter One: Definition of 'Recyclable Material'

To be afforded relief from liability a recycler first must be able to demonstrate that the material meets the definition of 'Recyclable Material'.

Does the material meet the definition of a 'recyclable material'?

The new law provides liability relief for those who arrange for the recycling of a broad spectrum of materials that are recycled and used in place of virgin material feedstocks. These materials include the following:

* *scrap paper*
* *scrap plastic*
* *scrap glass*
* *scrap textiles*
* *scrap rubber*
* *scrap metal*
* *spent lead-acid, spent nickel-cadmium, and other spent batteries (whole)*

Scrap Metal:
The new law defines scrap metal using the exact same definition found in the RCRA regulations. Under RCRA, scrap metal is defined very broadly as follows: 'scrap metal is bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.' (40 CFR 261.1)

Over the years, EPA has written numerous interpretive memos identifying specific situations where recyclable material met the definition of 'scrap metal'. For example, according to the EPA, a material typically should be more than 50% metal by weight to be considered scrap metal.

Also, EPA has stated that solder drippings generated at radiator shops are 'scrap metal' as are spent solder baths (also know as pot dumps). In addition, EPA has stated *agglomerated* fines, drosses and related materials (from any source, not just scrap metal processing) can be classified as processed scrap metal and, if recycled, are excluded from the definition of solid waste. According to EPA, agglomerated drosses are solid chunks of metal in a physical state that does not allow them to be easily crushed, split, or crumbled; dross which has not been agglomerated is considered by-product material, not scrap metal, and thus not covered by this law.

Scrap Metal, cont.
EPA has also issued interpretive memos stating whole circuit boards containing minimal quantities of mercury and batteries that are protectively packaged to minimize dispersion of metal constituents would meet the definition of scrap metal. Shredded circuit boards must be free of mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries to qualify as scrap metal.

Additional examples as well as copies of the interpretive memos reviewed above are included in Section Two of the Manual, *Definition of Recyclable Material.*

It should be noted that the new law gives the EPA Administrator the authority to exclude, by regulation, scrap metals that are determined not to warrant the exclusion from liability. Because the law grants relief from liability both prospectively and retroactively, any exclusion by the Administrator would only apply to transactions occurring after notice, comment and the final promulgation of a rule to such effect. ISRI will certainly alert members to any such proposals.

What if oil or other materials are mixed with the recyclable material?

The term `recyclable materials' is defined to include `minor amounts of material incident to or adhering to the scrap material as a result of its normal and customary use prior to becoming scrap.' This provision recognizes that various recovered materials may be processed together before the scrap is sold to a consuming facility as a feedstock (i.e. before it is classified as a certain grade or meets a specification). For example, an appliance may be processed through a shredder that also shreds automobiles. As a result, the metal recovered from the appliance may come into contact with residual oil that entered the shredder incident to an automobile.

In addition, EPA has stated that materials containing or otherwise contaminated with used oil, from which the used oil has been properly drained or removed to the extent possible such that no visible signs of free-flowing oil remain in or on the material are not considered used oil unless they are to be burned for energy recovery (58 FR 26420 May 23,1993). Meaning, if scrap metal meets the "no free flowing oil" standard described above, the metal still meets the definition of scrap metal and thus, is covered by the bill. Steel turnings, for example, would be considered scrap metal if excess oil had been drained off, but such designation may be lost if they were visibly dripping with used oil. EPA has also stated that spent metal fuel filters which are drained and no longer contain a significant liquid component meet the definition of scrap metal.

Copies of the regulations reviewed above are included in Section Two of the Manual, *Definition of Recyclable Material.*

Scrap Paper, Plastic, Glass, Textiles, and Rubber
As these terms are not defined in RCRA, unlike the case with scrap metal, the bill does not provide specific definitions for these recyclable materials. Thus, recyclers would look to industry standards and practices to demonstrate that a specific material met one of these classifications of 'recyclable material'.

What materials are not included in the definition of 'recyclable material'?
The definition of 'recyclable materials' for the purpose of this law, does not include:

* *Whole tires*
* *Shipping Containers containing Hazardous Substances*
* *PCB Contaminated Materials (above 50 ppm)*

Whole scrap tires have been excluded from eligibility under this provision because of concerns about the environmental and health hazards associated with stockpiles of whole scrap tires.

Shipping containers between 30 and 3000 liters capacity which have hazardous substances `contained in' or `adhering to', other than metal bits and pieces in them, are also excluded from the definition of recyclable material. However, metal alloys, including hazardous substances such as chromium or nickel, that are metallurgically or chemically bonded in the steel to meet appropriate container specifications are not subject to this exclusion.

Lastly, any item of material which contained PCBs at a concentration of more than 50 parts per million (`ppm') at the time of the transaction does not qualify as recyclable material. Material, which previously held a concentration of PCBs in excess of 50 ppm, but has been cleaned in accordance with appropriate regulations to levels below 50 ppm, would still qualify for exempt treatment. Item, in this context, is meant to apply only to a distinct unit of material, not an entire shipment.

What if a material is not specifically included or excluded from the definition of 'recyclable material'?
It was not Congress' intent that the absence of a material or transaction from coverage under this Act create a stigma subjecting such material or transaction to Superfund liability or preclude the useful product defense. Therefore, the new law preserves the legal defenses that were available to a party prior to enactment of this Act for those materials not covered by either the definition of a recyclable material or the definition of a recycling transaction within the bill. Thus, for example, the 'useful product' defense which has been a common defense in Superfund cases dealing with recyclable materials, would still be available as a defense for transactions involving materials not covered by the this law.

Chapter Two: 'Arranging for Recycling'

The new law creates a test to determine which recycling transactions are afforded liability relief.

What is a Transaction?
Transactions can be a sale to a consuming facility whether or not accompanied by a fee, or other similar agreement. The *term `or otherwise arranging for the recycling of recyclable material'* found in the law recognizes that while recyclables have intrinsic value they may not always be sold for a net positive amount. Thus a transaction in which one who arranges for recycling does not receive any remuneration for the material but rather pays an amount, less than the cost of disposal, should still qualify for the protection afforded by the new law.

FOR ALL TRANSACTIONS, A RECYCLER MUST BE ABLE TO DEMONSTRATE ALL OF THE FOLLOWING:

1. Recyclable material met a commercial specification
A commercial specification grade can include those published by industry trade associations (such as ISRI Specifications) or other historically or widely utilized specifications. ISRI's Scrap Specifications Circular (1998) contains hundreds of scrap guidelines that are often used in the industry. This document can be easily down-loaded from ISRI's own site: www.isri.org.

Often, recyclers will use a general term to describe their recyclable commodity or the specific term requested by the consumer. A consumer may also have his or her own set of specifications based upon the individual facility's requirements. This may be necessary because the consumer has specific equipment, processes or products unique to the facility.

The specification, whether broad or specific, will often be based on the metal content or physical nature of the material. Most of the terminology used in the scrap business defines the origin, use, composition, or grade of the scrap. For example, a specification may be as precise as a term such as 'drove' (ISRI specification term for copper bearing scrap) or as broad as 'radiators'. Specific terminology aside, at the time of the transaction, the consumer and the recycler agree to the sale of a specific material. The agreement may be memorialized in a purchase order, sales agreement, invoice, or in another fashion. By entering into the deal and subsequently accepting the material shipped by the recycler, the consumer confirms that the recyclable material met the desired specification. Therefore, one can reference the terms of the agreement as confirmation the recyclable material met (meets) a commercial specification. The fact that the consumer bought that same material from a number of scrap recyclers is evidence of its wide use.

2. A market existed for the recyclable material involved in the transaction.

Evidence of a market can include, but is not limited to, a third party published price (including a negative price), a market with more than one buyer or seller for which there is a documentable price, and a history of trade in the recyclable material.

For example, the history of trade in scrap metal has been memorialized by the American Metal Market (AMM) and other industry publications as they have tracked the price of scrap for decades. Evidence of a history of trade in scrap paper can be found in Fibermarket News, Official Board Markets (commonly referred to as the Yellow Sheet), and other trade journals. These are only a sample; additional sources for other scrap materials exist and would be useful in demonstrating market existence.

3. A substantial portion of the recyclable material was made available for use as a feedstock for the manufacture of a new saleable product.

This means that for a transaction to be deemed arranging for recycling, a substantial portion, but not all, of the recyclable material must have been sold with the intention that the material would be used as a raw material, in place of a virgin material, in the manufacture of a new product. The fact that the recyclable material was not actually used in the manufacture of a new product, for some reason beyond the control of the person who arranged for recycling, should not be evidence that the requirements of this section were not met.

Additionally, no single benchmark or recovery rate is appropriate given variable market conditions, changes in technology, and differences between commodities. Instead, a common sense evaluation of how much of the material is recovered is appropriate. For example, in order to be economically viable as a recycling transaction a relatively high volume of the inbound material is expected to be recovered for feedstocks of relatively low per unit economic value (such as paper or plastic), while a dramatically lower volume of material is expected to be recovered to justify the recycling of a feedstock of very high economic value (such as gold or silver).

It is not necessary that the person who arranged for recycling document that a substantial portion of the recyclable material was actually used to make a new product. Instead, the person need only be prepared to demonstrate that it is common practice for recyclable materials that he or she handles are made available for use in the manufacture of a new saleable product. For example, if recyclable stainless steel is sold to a stainless steel smelter, it is presumptive that recycling will occur.

4. **The recyclable material could have been a replacement or substitute for a virgin material, or the product to be made from the recyclable material could have been a replacement or substitute for a product made, in whole or in part, from a virgin raw material.**

It is the intent of this provision that the recycler be able to demonstrate the general use for which the feedstock material was obtained, not to show that a specific unit was incorporated into a new unit.

The first part of this subsection acknowledges the fact that modern technology has developed to the point were some consuming facilities exclusively utilize recyclable materials as their raw material feedstock and manufacture a product that, had it been made at another facility, may have been manufactured using virgin materials. Thus, the fact that the recyclable material did not directly displace a virgin material as the raw material feedstock should not be evidence that the requirements of section were not met.

Secondary feedstocks may compete both directly and indirectly with virgin or primary feedstocks. In some cases a secondary feedstock can directly substitute for a virgin material in the same manufacturing process. In other cases, however, a secondary feedstock used at a particular manufacturing plant may not be a direct substitute for a virgin feedstock, but the product of that plant completes with a product made elsewhere from virgin material.

For example aluminum may be utilized at a given facility using either virgin or secondary feedstocks meeting certain specifications. In this case, the virgin and secondary feedstock materials compete directly. A particular steel mill, however, may only utilize scrap iron and steel as a feedstock. If that mill makes a steel product that competes with the steel product of another mill, which utilizes a virgin feedstock, the conditions of this paragraph have been met. In this example, the two streams of feedstock materials do not directly compete, but the products made from them do.

Arranging for Recycling - Making the Demonstration:

In regard to the market tests provisions, there are several publications and industry groups that provide information on market trends, material uses, and consuming facility's processes. For example, ISRI's own ' Just the Facts' column in Scrap reviews historic pricing information, use of scrap in consuming facility processes, and how the material competes with virgin material.

Chapter Two: 'Arranging for Recycling', cont.

Here is an excerpt from the issue on *Copper*: ➡

Section Three of the Manual, *Arranging for Recycling*, includes the first in a series of historic market reports on specific types of scrap. The first one is a historical review of the copper and brass scrap market. The next in the series will be on lead/whole batteries.

Scrap Facts:
In the United States, industrial and obsolete scrap is purchased and ultimately recovered by domestic copper refineries, smelters, ingot makers, brass and wire rod mills, and foundries. In addition, significant tonnages of US scrap are exported, principally to Canada, China, Hong Kong, India and Japan.

Pricing Info:
Copper prices are freely traded on commodity future exchanges located in London (the LME) and New York City (Comex), and are therefore subject to periods of price volatility unrelated to supply-and-demand fundamentals. As another mechanism, domestic producers maintain a published list of price for cathodes, which changes with market conditions, but domestic scrap prices are usually referenced to Comex prices. As evidence, LME, Comex, and scrap prices have exhibited a high degree of correlation over time. Note: approximately 40% of annual consumption derived from recycled copper metal.
Source: US Bureau of Mines.

ISRI is developing these market resources to assist members in demonstrating that trade in these materials is 'arranging for recycling'.

Arranging for Recycling of Scrap Metal and Whole Batteries
Transactions involving scrap metal and/or batteries must meet the above-mentioned conditions as well as the ones listed below to be afforded relief from Superfund liability.

Scrap Metal
Transactions involving scrap metal are deemed to be 'arranging for recycling' provided that the recycler did not melt the scrap prior to the transaction. Melting of scrap metal does not include the thermal separation of two or more materials due to differences in their melting points (i.e. sweating). Torch-cutting also would not be viewed as 'melting'. Furthermore, this provision does not address processes conducted at the consuming facility (i.e. if the consumer melts the scrap you arranged to be recycled, you do not lose liability relief – provided you did not melt it before it was sent to the consumer).

In addition, should EPA promulgate regulations on scrap metal recycling in the future, the bill requires that once such regulations are effective, the recycler seeking the exemption must comply with the regulations. Until such regulations are effective, however, a recycler may be relieved of liability if he or she complies with all other provisions of the statute for the recycling of scrap metal. Note: EPA has not indicated it will be developing any such regulations in the near future.

Whole Batteries

Transactions involving spent lead-acid batteries, spent nickel-cadmium batteries, or other spent batteries shall be deemed to be 'arranging for recycling' if the recycler who arranged for the transaction (by selling recyclable material or otherwise arranging for the recycling of recyclable material) can demonstrate by a preponderance of the evidence that at the time of the transaction the recycler did not recover the valuable components of such batteries. The act of recovering the valuable components of a spent battery refers to the breaking or smelting of the battery itself in order to reclaim the valuable components of such battery. Therefore, a recycler who generates, transports or collects a spent battery, but does not break or smelt such battery is afforded liability relief provided all other requirements set out in the statute are met.

In addition, recyclers who arrange for the recycling of whole batteries must be in compliance with all Federal environmental regulations governing battery storage, transport, management or other activities associated with recycling in effect at the time of the recycling transaction.

For lead-acid batteries, the exemption is available for transactions occurring prior to the issuance of regulations governing lead-acid batteries assuming all of the other requirements of the law have been satisfied. Since there were no regulations governing lead-acid batteries prior to 1985, there is no requirement that a party comply with such regulations prior to 1985 in order to qualify for the exemption for pre-1985 transactions. However, for lead-acid battery transactions occurring after the applicable regulations were issued, the party seeking the exemption must demonstrate compliance with those regulations in addition to the general conditions listed earlier.

Refer to Section Five of the Manual, *Additional Information*, for the relevant regulations governing the recycling of batteries.

However, for nickel-cadmium and other types of batteries, federal regulations had to be in effect at the time of the transaction for relief to be available, and the recycler must be able to show he or she was in compliance with the applicable regulations. For example, once the 'universal waste rules' were promulgated in 1995, the protection afforded by the law would then be available to transactions conducted after this date, provided the recycler met the rest of the requirements of the new Superfund law.

Section Five of the Manual, *Additional Information*, contains the relevant regulations governing the recycling of batteries.

Chapter Three: Evaluating the Consumer's Compliance Record

With the passage of the Superfund Recycling Equity Act, recyclers have an increased responsibility to consider the compliance record of the consuming facility that recycled the material.

For Transactions Occurring Prior to February 27, 2000:

To be afforded liability relief for transactions occurring between November 29, 1999 and February 27, 2000, a recycler could not have sent its materials to a consuming facility that it had an *objectively reasonable basis to believe* was not in compliance with *substantive* provisions of any Federal, State, or local environmental law or regulation or compliance order, etc. For transactions occurring after February 27, 2000, recyclers have a greater responsibility to determine the compliance status of the consuming facility (see next section).

While there is no expectation that a recycler who arranged for recycling prior to February 27, would have carried out any type of record search or make extensive inquires of federal agencies, if the government or another private party can prove that the recycler had an objectively reasonable basis to believe the material was going to a 'bad actor', these parties could sue the recycler if in the future the consuming facility become a federal Superfund site.

To protect transactions conducted during this period, some recyclers sent their consumers a letter requesting information or a statement of compliance regarding "compliance with *substantive* (not procedural or administrative) *provision'* of any Federal, State, or local environmental law or regulation, or compliance order or decree issued pursuant thereto, applicable to the handling, processing, reclamation, or other management activities associated with the recyclable material. §127(c)(5)." However such a letter was not a requirement, although it does provide additional evidence of good faith efforts.

Members may wish to use the following sample letter to request information from consumers on environmental compliance matters for transactions occurring either before or after February 27, 2000:

See the next page for a copy of the sample letter

Sample Letter to Consumers

On November 29, 1999, President Clinton signed into law the Superfund Recycling Equity Act (Pub. Law 106-113). This law clarifies Superfund to state that recycling is not disposal, and shipping for recycling is not arranging for disposal.

To comply with the requirements of the new law, [Recycler] must attempt to ensure that your facility located at [Facility Address] is in compliance with substantive (not procedural or administrative) provisions of any Federal, State, or local environmental law(s) or regulation(s), or compliance order(s) or decree(s) issued pursuant thereto, applicable to the handling, processing, reclamation, or other management activities associated with the recyclable material. {§127(c)(5)}

In order to satisfy this requirement, [Recycler] is requesting a statement from your company documenting or certifying compliance with all necessary environmental laws and regulations. Please provide such statement by [10 days after receipt of this letter] to the following address:

[Recycler's Address]

Keeping these information requests or statements on file may be helpful to show the recycler met the conditions of the new law.

Whether an objectively reasonable basis for belief under this section exists may be determined using criteria such as customary industry practices, the price paid in the recycling transaction, and the ability of the person to detect the nature of the consuming facility's handling, processing, reclamation or other management activities associated with the recyclable material. The size of the person's business may also be considered, including the resources available to the person.

Transactions occurring After February 27, 2000:

For transactions occurring 90 days after the enactment date of the Superfund Recycling Equity Act (i.e. after February 27, 2000), to obtain relief recyclers must exercise "reasonable care" to determine that the consuming facility is in compliance with substantive provisions of any federal, state, or local environmental law or regulation, compliance order, or decree applicable to the direct handling, processing, reclamation, storage, or other management activities associated with the recyclable material.

A requirement to obtain a permit applicable to the handling, processing, reclamation, or other management activity associated with the recyclable materials would be deemed to be a substantive provision. Conversely, certain record-keeping errors, missed deadlines or similar infractions that do not result in any environmental harm could be viewed by the courts as 'procedural or administrative'.

In determining whether a recycler exercised 'reasonable care', the criteria to be applied will be considered in the context of the time of the transaction and will be determined using a variety of factors specified below, of which no one factor is determinant:

Price paid in the recycling transaction. One should look not only at whether the price bore a reasonable relationship to other transactions for similar materials at the time of the transaction in question but should also take into account the circumstances surrounding the individual transaction, such as whether it was part of a long-term contract involving significant quantities.

In addition, market conditions vary considerably over any given time period for any given commodity. Thus, when determining whether the price paid was reasonable, general market conditions and variations should be considered.

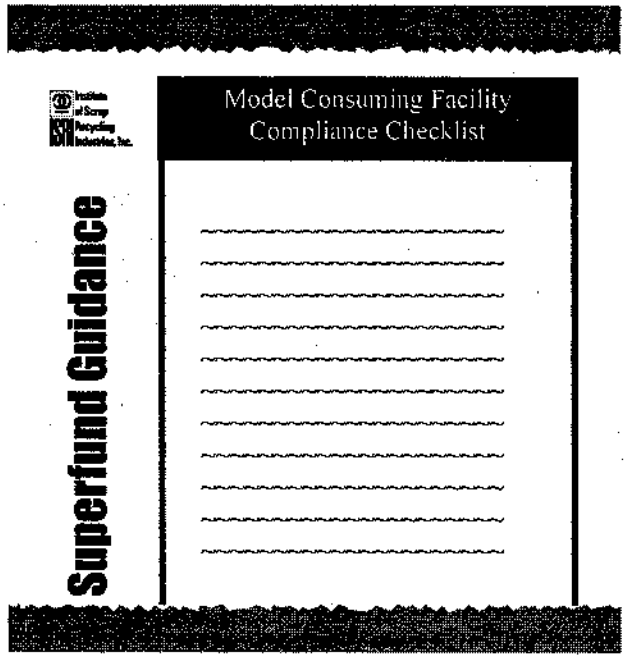
Ability of the recycler to detect the nature of the consuming facility's operations concerning its handling, processing, reclamation, or other management activities associated with recyclable material. This provision acknowledges the fact that a small company may be able to determine less information than a large company about the consuming facility's operation. Thus, the size of an individual shipping facility may be an important factor in that facility's ability to detect the nature of the consuming facility's operations.

continued on next page....

Results of inquiries made to the appropriate federal, state, or local environmental agencies regarding the consuming facility's past and current compliance with substantive environmental requirements applicable to activities associated with the recyclable material. This provision only requires a recycler to make reasonable inquiries. Inquiries need only be made to those agencies having primary responsibilities over environmental matters related to the handling, processing, etc., of the materials involved in the recycling transaction. The facility should consider documenting such inquiries in order to illustrate that reasonable care was taken.

When exercising 'reasonable care' in determining the consuming facility compliance record, a recycler may want to consider contacting the consuming facility directly to confirm or clarify information gathered from inquiries made to the relevant regulatory agencies.

ISRI has developed a model checklist in order to help with this endeavor as well as to provide consumers with a simple method to respond to such inquiries. This checklist along with additional guidance on the 'reasonable care' provisions of the law can be found in Section Four of the Manual, *Evaluating Consumer Compliance.*



Furthermore, depending on case specific situations, a recycler may want to consider one of the following to demonstrate it has met the 'reasonable care' condition:

- Using EPA Databases
- Requesting Corporate Annual Reports, if applicable (SEC Form 10K filings, etc.)
- Enlisting the services of private audit firms or database firms

In addition, ISRI is in the process of identifying databases containing compliance information. This information will be sent to all members as soon as it is available.

In regard to brokers, it is questionable whether the courts would view a broker which does not handle, process, and/or reclaim the recyclable material as a consuming facility. Thus, while the broker in this situation already has to determine the compliance status of the consuming facility, the recycler that arranged for recycling through this broker may need to evaluate the consuming facility's compliance record to also be afforded relief.

Chapter Four: Exclusions

A recycler's claim to an exemption from Superfund liability may be denied if the government (or other party bringing an action against the recycler) can demonstrate in accordance with the requirements of the law, one of the following:

1. The recycler knew that the material would not be recycled. It is important to note that it is not necessary that every component of the recyclable material be recycled and actually find its way into a new product to meet the requirement that the material was shipped to be recycled.

2. The recycler knew that the recyclable material would be burned as fuel or for energy recovery. Smelting, refining, sweating, melting and other operations that are conducted by a consuming facility for purposes of material recovery are not considered incineration, nor would they be categorized as burning as fuel or for energy recovery.

3. The recycler had reason to believe hazardous substances were added to the recyclable material in order to dispose of or otherwise rid themselves of the substance. This applies wherever the action in question occurs.

4. The recycler failed to exercise reasonable care with respect to the management and handling of the recyclable material. If a recycler failed to exercise reasonable care with respect to the management and handling of the recyclable material, the recycler will not be able to take advantage of the liability relief afforded by this statute. Thus, a recycler must ensure that the recyclable material was handled appropriately at its own facility.

Reasonable care is to be judged based on industry practices and standards at the time of the transaction. Although past transactions may have occurred when there were few, if any, environmental regulations applicable to the handling of the recyclable material. For present and future transactions, compliance by the recycler is be vital to ensure relief from liability. In order to ensure that the recycler's practices and polices protect themselves from violating this provision, a recycler may want to consider using the following warranty statement on purchase contracts and other business forms such as scale tickets or receiving reports:

Notwithstanding any other warranty or limitation of warranty herein, Seller warrants and represents to Buyer that to the best of his or her knowledge, based upon reasonable inquiry, the scrap to be delivered under this contract of sale does not contain any "hazardous substances" (which shall be defined as those substances included in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C §9601 (14), and those substances that are toxic, ignitable, corrosive, and/or reactive, as those terms are defined at 40 CFR Part 261, Subpart C), except for minor amounts of material incident to or adhering to the scrap as a result of its normal and customary use prior to becoming scrap and those "hazardous substances" that are integral constituents of the metallic fraction of scrap metal or that are contained in the electrolytic fluid in a spent lead acid battery. Seller will indemnify and hold Buyer harmless from any and all claims, demands and liabilities, including reasonable attorney's fees, resulting in whole or in part from a breach of the foregoing warranty.

Chapter Five: Affect on Pending and Concluded Litigation

The new law does not affect any concluded judicial or administrative action. Concluded action means any lawsuit in which a final judgment has been entered or any administrative action, which has been resolved by consent decree, which has been filed in a court of law and approved by such court. Thus, if you have already settled, you may not seek a refund. This applies to concluded litigation with the government or with a private party.

If the United States has filed a complaint (i.e., judicial action, lawsuit) in a federal district court against a scrap recycler, the recycler is not automatically relieved of liability under the new law. Any pending judicial action, whether it was brought in a trial or appellate court, by a private party, shall be subject to the liability relief afforded by the new law. The same holds true for any *pending* administrative actions brought by any government agency. For example, the mere receipt of a Section 104/106 request is not a concluded administrative action, so relief is still available in such cases. The original sponsors of the Act intended that any third party action or joinder of defendants brought by a private party shall be considered a private party action, regardless of whether or not the original lawsuit was brought by the United States. This matter is currently being litigated in a number of courts.

Any person who commences an action against a recycler who is not liable by operation of this statute shall be liable to that recycler for all reasonable costs of defending that action, including all reasonable attorney's and expert witness fees.

DISCLAIMER:

The guidance provided in this document is for informational purposes only and is not intended to constitute legal advice. Accordingly, members with legal questions regarding any aspect of this guidance document should contact their legal counsel. Recommendations contained in this manual are not intended to be deemed as standards and may not be appropriate for all situations. The recommendations contained in this guidance document are not exhaustive. For further guidance regarding the intent of the law, recyclers may want to consult the legislative history for the law, found in Section Five of the Manual, Additional Information.

Superfund Recycling Equity Act Guidance Manual

Resources

If you have questions regarding the new law, please contact one of the following ISRI staff:

Compliance Issues: Tracy Mattson
Director of Environmental Compliance
202-662-8533
tracymattson@isri.org

Legal Issues: Scott Horne
General Counsel
202-662-8513
scotthorne@isri.org

State Issues: Tom Tyler
Director of State & Local Programs/ Assoc. Counsel
202-662-8515
tomtyler@isri.org

ISRI's web site is also a great resource for updates: www.isri.org

Updated 6/15/00

Institute of Scrap Recycling Industries, Inc.

Superfund Guidance

February 25, 2000

Definition of Recyclable Material

In order to determine whether or not certain materials meet the definition of 'recyclable material' and thus included in the scope of the new law, the following interpretive memos and guidance may be useful in demonstrating applicability:

SECTION I:
U.S. EPA Interpretive Memos
Regarding the Definition of Scrap Metal

SECTION II:
Guidance Regarding the Regulatory Status of 'Incidental Fluids'

SECTION III:
ISIS Memo on Handling Drums

Institute of Scrap Recycling Industries, Inc.

Superfund Guidance

Volume Three

January 21, 2000

Definition of 'Scrap Metal': U.S. EPA Documents

Executive Summary:

On Nov. 29, 1999, President Clinton signed into law the Superfund Recycling Equity Act. This law clarifies Superfund to state that recycling is not disposal, and shipping for recycling is not arranging for disposal. As a result, recyclers may no longer be held responsible for cleaning up a contaminated site when the site's owner or operator caused the contamination. This necessary clarification removes an impediment to reaching America's recycling goals while saving many recycling businesses.

The new law provides liability relief for those who arrange for the recycling of a broad spectrum of materials that are recycled and used in place of virgin material feedstocks including 'scrap metal'. The new law defines scrap metal using the regulatory definition found at 40 CFR 261.1 The Administrator is given the authority to exclude, by regulation, scrap metals that are determined not to warrant the exclusion from liability. Because 127 grants relief from liability both prospectively and retroactively, any exclusion by the Administrator would only apply to transactions occurring after notice, comment and the final promulgation of a rule to such effect.

Under RCRA, scrap metal is defined very broadly. Although not specified in the definition, according to the EPA, a material must be more than 50% by weight to be considered scrap metal. The regulatory definition found in 40 CFR 261.1 is as follows:

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

Over the years, EPA has provided the regulated community with numerous interpretive memos identifying specific situations where recyclable material met the definition of 'scrap metal'. For example, EPA has stated that solder drippings generated at radiators shops are 'scrap metal' as are spent solder baths (also know as pot dumps). In addition, EPA has stated *agglomerated* fines, drosses and related materials (from any source, not just scrap metal processing) can be classified as processed scrap metal and, if recycled, are excluded from the definition of solid waste. According to EPA, agglomerated drosses are solid chunks of metal in a physical state that does not allow them to be easily crushed, split, or crumbled; dross which has not been agglomerated is by-product, not scrap metal. EPA has also issued interpretive memos stating whole circuit boards containing minimal quantities of mercury and batteries that are protectively packaged to minimize dispersion of metal constituents would meet the definition of scrap metal. According to EPA, shredded circuit boards must be free of mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries to qualify as scrap metal.

Additional examples as well as copies of the interpretive memos reviewed above are included in this guidance.

For more information, please contact Tracy Mattson, ISRI's Director of Env. Compliance at (202) 662-8533 / email: tracymattson@isri.org. Additional compliance information can be found at **www.isri.org.**

SECTION I: Definition of Scrap Metal

Title of U.S. EPA Interpretive Memo:	Date Issued:
CLARIFICATION OF THE REGULATORY STATUS OF AGGLOMERATED DROSSES	2/13/98
APPLICABILITY OF THE PROCESSED SCRAP METAL EXCLUSION TO USED OIL FILTERS	6/11/98
SCRAP METAL REMOVED FREOM SPENT ALKALINE BATTERIES THAT ARE RECYCLED	10/20/86
TORPEDO PROPULSION UNITS SHIPPED FOR RECYCLYING, REGULATION OF	2/25/86
REGULATORY REQUIREMENTS FOR ON-SITE TREATMENT OF OXYGEN BREATHING APPARATUS (OBA) CANISTERS	5/09/94
REGULATORY STATUS OF BRASS PARTICLES GENERATED IN THE BELTING AND BUFFING OF BRASS CASTINGS	9/14/93
CLARIFICATION OF BY-PRODUCT VERSUS SCRAP METAL	3/01/90
REGULATORY STAUS OF USED RESIDENTIAL AND COMMERCIAL/INDUSTRIAL AEROSOL CANS	10/07/93
REGULATORY STATUS OF SPENT SOLDER BATHS, ALSO KNOWN AS "POT DUMPS"	09/24/93
EXEMPTION FOR SCRAP METAL DESTINED FOR RECYCLING APPLIES AT POINT OF GENERATION	6/01/98
REGULATORY STATUS OF USED CUTTING OILS AND USED OIL COATED STEEL TURNINGS GENERATED DURING MACHINING OPERATIONS	11/17/93
REGULATORY STAUS OF SPENT PHOTOCONDUCTOR DRUMS FROM PHOTOCOPYING MACHINES	11/10/92
SALE AND SCRAPPING OF DOT'S MARITIME OBSOLETE VESSELS FROM THE NATIONAL DEFENSE RESERVE FLEET	8/05/94
REGULATORY STATUS OF PRINTED CIRCUIT BOARDS	8/26/92
REGULATION OF NICKEL/CADMIUM BATTERIES AS SCRAP METAL WHEN RECLAIMED	5/01/90
APPLICATION OF THE SCRAP METAL EXEMPTION TO LEAD FOIL USED IN DENTAL X-RAY PACKAGES	4/29/93
APPLICABILITY OF PERMITTING TO SPENT LEAD-ACID BATTERY RECYCLING	11/28/88
CLARIFICATION OF THE RECYCLED USED OIL MANAGEMENT STANDARDS	10/07/93
REGULATORY STATUS OF SOLDER DRIPPINGS GENERATED DURING RADIATOR REPAIR OPERATIONS	4/29/93
REGULATORY STATUS OF LEAD SHOT	3/17/97
WHOLE CIRCUIT BOARDS	8/08/97
REGULATORY STATUS OF SPENT METAL FUEL FILTERS UNDER RCRA	6/03/98
SOLDER DRIPPINGS	5/29/93
BRASS DROVE	5/05/89
EMPTY CONTAINER/PAINTS	5/11/97

Record Detail

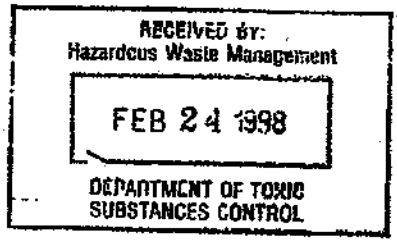
Full Document:	This document is currently only available by calling the RCRA, Superfund & EPCRA Hotline at (800) 424-9346
Title:	CLARIFICATION OF THE REGULATORY STATUS OF AGGLOMERATED DROSSES
Date:	02/13/98
To:	Reilly
From:	Bussard
Organization of Recipient:	California Department of Toxic Substances Control
Description:	agglomerated drosses (from any source, not just scrap metal processing) can be classified as processed scrap metal and, if recycled, are excluded from the definition of solid waste; agglomerated drosses are solid chunks of metal in a physical state that does not allow them to be easily crushed, split, or crumbled; dross which has not been agglomerated is by-product, not scrap metal; agglomerated drosses used in a manner constituting disposal are excluded scrap metal being recycled and thus not solid waste; drosses that have not been agglomerated are solid wastes when used in a manner constituting disposal
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c)(6); 261.2(e); 261.4(a)(13)
Statutory Citation(s):	NA
Topic(s):	Exclusions (RCRA), Identification of Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	3
Fax-On-Demand Code:	14195
EPA Document Number:	NA
RPC Number:	02/13/98 - 1
RPPC Number (if applicable):	NA
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 13 1998

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Norman R. Reilly, Chief
Resource Recovery Section
Hazardous Waste Management Program
Department of Toxic Substances Control
Cal/EPA
400 P Street, 4th floor, P.O. Box 806
Sacramento, CA 95812 0806



Dear Mr. Reilly:

Thank you for your letter dated May 28, 1997 requesting clarification of the regulatory status of agglomerated drosses. On May 12, 1997, the U.S. Environmental Protection Agency (EPA) promulgated a final rule amending the federal definition of solid waste to exclude shredded circuit boards and excluded scrap metal (defined as "processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal) being recycled from the definition of solid waste. You ask for an interpretation of the regulatory status of characteristically hazardous metal drosses under this new final rule for excluded scrap metal. I would like to clarify the scope of the exclusion and its applicability to metal drosses in order to address your concerns.

First, I would like to emphasize that the new rule does not affect the regulatory status of dross that has not been agglomerated. Dross which has not been agglomerated maintains its current regulatory status as a by-product and is a solid waste unless it is a characteristic by-product being reclaimed. Dross which has not been agglomerated is not a scrap metal. The Agency continues to maintain that the definition of scrap metal does not include residues generated from smelting and refining operations such as drosses, slags, and sludges. As the Agency explained in the January 4, 1985 preamble to Definition of Solid Waste final rule (50 FR 625) "scrap metal is also classified differently from metal-containing process residues such as slags, drosses, and sludges partly because it is different in physical form and content. More importantly, these residues can be involved in recovery operations that amount to on-going processing of the virgin materials and so are not invariably wastes when utilized for metal recovery....this is not the case when scrap metal is recovered."

The May 12, 1997 final rule excludes processed scrap metal, unprocessed home scrap metal and unprocessed prompt scrap metal being recycled from the definition of solid waste. Obsolete scrap metal (that which has not undergone a processing step) remains a solid waste but is exempt from the hazardous waste regulations if recycled. It is important to realize that the new exclusion to the definition of solid waste for excluded scrap metal being recycled, as it relates to dross, only applies to dross which has been agglomerated. Key to this determination is the meaning of agglomerated dross. The Agency did not provide the meaning of agglomeration in the preamble to the rulemaking, but interprets this term to mean a dross that has the same physical characteristics as scrap metal i.e., "bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that are combined together with bolts and soldering ...." Agglomerated drosses are solid chunks of metal in a physical state that does not allow them to be easily crushed, split or crumbled. Agglomerated drosses are generated from operations such as sintering and melting which result in a material that does not have elements that are easily dispersed. In the preamble to the final rule, EPA defined processed scrap metal as "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." Therefore, dross that has been agglomerated can be classified as processed scrap metal and, if recycled, is excluded from the definition of solid waste.

Additionally, the Agency intended that agglomerated dross from any source, not solely from scrap metal processing, that is being recycled, be excluded from the definition of solid waste. Agglomerated dross being recycled is classified as processed scrap metal despite not meeting the definition of scrap metal prior to processing (agglomeration). While the wording of the regulation is inexact on this point, it does not make sense to distinguish drosses based on their source. We agree with your assertion that the risks associated with metal drosses generally, are a function of their physical and chemical characteristics, and their handling, not of their origins. Therefore, the exclusion from the definition of solid waste applies to agglomerated dross from secondary metal processing as well as dross from primary metal processing.

Second, you request comment on the regulatory status of dross used in a manner constituting disposal under the new exclusion to the definition of solid waste for excluded scrap metal. Again, I must emphasize that the exclusion applies only to dross that has been agglomerated. If the dross is agglomerated and used in a manner constituting disposal, it would be a processed scrap metal being recycled and thus excluded from the definition of solid waste. However, dross that has not been agglomerated is a listed or characteristic by-product and therefore is a solid waste when used in a manner constituting disposal. Although the federal regulations provide, generally, that characteristic byproducts and sludges that are reclaimed are not solid waste, the regulations expressly override that result when these materials are 1) used in a manner constituting disposal; 2) used to produce products that are applied to the land; 3) burned for energy recovery, used to produce a fuel, or contained in a fuel; 4) accumulated speculatively; or 5) considered inherently waste like. 40 C.F.R. §261.2(e)(2). Accordingly, metal-bearing characteristic byproducts and sludges that are reclaimed are solid wastes subject to the applicable Subtitle C regulatory requirements when the waste or reclaimed materials are then

used or reused in a product (such as fertilizer) that is to be placed on the land (*i.e.*, used in a manner constituting disposal). The Agency has consistently interpreted this provision to apply without regard to whether the byproduct or sludge as a whole (or some reclaimed portion of it) is used as a product that is placed on the ground or used to produce a product that is placed on the ground.

In your letter and in conversations with my staff you raise the concern that agglomerated drosses, which often contain hazardous constituents, will be used in the production of fertilizers which will be placed on the land. It is our understanding, based on discussions with fertilizer manufacturers, that agglomerated dross, as described previously, is not amenable to the production of fertilizers and would not be used for this purpose. Fertilizer manufacturers state that they are interested in metal oxides for their manufacturing processes. As agglomerated dross is primarily in the metallic state, use of agglomerated dross in fertilizers does not at this time appear to be economically feasible. Should the use of agglomerated dross for the manufacture of products used in a manner constituting disposal become commonplace practice, the Agency would likely initiate further investigation as to whether the dross in fact was agglomerated as described in this letter, and if so, whether this was legitimate use.

Because of concerns related to waste-derived fertilizers the Agency has convened a workgroup that is currently investigating issues related to fertilizer, including the following:

1) potential human health and environmental impacts associated with the use of waste-derived and non-waste derived fertilizer;
2) the potential agricultural impacts associated with use of waste-derived and non-waste derived fertilizers;
3) the potential need to impose controls on waste-derived and non waste-derived fertilizers;
4) the role of enforcement and compliance initiatives; and
5) public communications initiatives.

The interpretations in this letter are based on federal regulations. Authorized states, such as California, may have more stringent regulatory requirements for such metal-bearing secondary materials. Accordingly, case-specific determinations should be made by the appropriate state regulatory authorities.

I hope this response clarifies the regulatory status of dross in its various physical forms. If you should require further clarification or additional information, please contact Kristina Meson of my staff at (703) 308-8488. I thank you for your interest in the environmentally sound management of this waste stream.

Sincerely,

Michael P. Flynn

for David Bussard, Director
Hazardous Waste Identification Division

Record Detail

Full Document:	This document is currently only available by calling the RCRA, Superfund & EPCRA Hotline at (800) 424-9346
Title:	APPLICABILITY OF THE PROCESSED SCRAP METAL EXCLUSION TO USED OIL FILTERS
Date:	06/11/98
To:	Hohmann
From:	Flynn
Organization of Recipient:	Sierra Club
Description:	properly drained, processed (crushed) used oil filters that are being recycled meet the processed scrap metal exclusion (SEE ALSO: RPC# 6/2/98-01); even though used oil filters are not specifically mentioned in the rule, EPA intentionally wrote the exclusion broadly to cover all types of processed scrap metal that can be recycled; residual oil from filters remains subject to used oil management rules
Part(s) & Subpart(s):	261 Subpart A; 279 Subpart A
Section(s):	261.1(c)(6); 261.1(c)(10); 261.4(a)(13); 261.4(b)(13); 279.10(c)
Statutory Citation(s):	NA
Topic(s):	Exclusions (RCRA), Hazardous Waste Recycling, Used Oil
Approximate Number of Hardcopy Pages:	2
Fax-On-Demand Code:	14202
EPA Document Number:	NA
RPC Number:	06/11/98 - 1
RPPC Number (if applicable):	NA
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN - 2 1998

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Christopher Harris
Harris, Tarlow & Stonecipher, P.L.L.C.
1439 West Babcock
Bozeman, MT 59715

Dear Mr. Harris:

Thank you for your interest in the exclusion from the definition of solid waste for processed scrap metal being recycled as it applies to used oil filters. This letter is in response to your December 12, 1997 letter and subsequent meetings and information that you and others provided. You asked two questions: 1) can the processed scrap metal exclusion from the definition of solid waste be applied to used oil filters and 2) does the act of draining used oil from used oil filters constitute scrap metal processing. To answer your questions, we think it would be helpful to first review the two exemptions from the hazardous waste regulations and the exclusion from the definition of solid waste that may apply to used oil filters.

Exemption from Hazardous Waste Regulation for Vehicle Engine Oil Filters

Non-terne-plated used oil filters which are removed from service from light or heavy duty vehicle engines are regulated as used oil under 40 CFR Part 279[1]. Once these filters are properly drained by one of the methods specified in 40 CFR 261.4(b)(13), they are no longer subject to the used oil regulations as materials containing used oil (see 40 CFR 279.10(c)), and they are also exempted from regulation as hazardous waste. The draining methods listed in this exemption consist of: 1) puncturing the filter anti-drain back valve or the filter dome end and hot draining; 2) hot-draining and crushing; 3) dismantling and hot-draining; or 4) any other equivalent hot-draining method that will remove used oil. Once drained in compliance with this exemption, such filters may be either disposed of or recycled as a non-hazardous solid waste. If recycled, they may also be considered a scrap metal as described below.

---

[1]The preamble to the May 20, 1992 used oil filter exemption, 57 FR 21524 at 21531-21532, specifies that this exemption from the hazardous waste regulations applies only to used oil filters from light or heavy duty vehicle engines. Other types of filters such as fuel filters, transmission oil filters, hydraulic oil filters, railroad locomotive oil filters, and other specialty filters are not covered by this exemption (see attached January 12, 1994 letter).

Scrap Metal Exemption from Hazardous Waste Regulation

EPA exempts from regulation as hazardous waste scrap metal that is being recycled (see 40 CFR 261.6(a)(ii)). Scrap metal is defined in 40 CFR 261.1(c)(10) as "bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled." However, EPA has stated repeatedly that scrap metal cannot contain significant amounts of liquid. All types of used oil filters are potentially eligible for the scrap metal exemption from the hazardous waste regulations if they meet this definition. Used oil filters are considered to not contain significant amounts of liquid once the used oil has been removed to the extent possible such that there are no visible signs of free-flowing oil (see 40 CFR 279.10(c)). This may be accomplished by the methods specified in 40 CFR 261.4(b)(13) or by other methods that remove used oil (e.g., shredding with oil recovery). Therefore, used oil filters that have been drained to meet the standard in 40 CFR 279.10(c) may be scrap metal and exempt from regulation as hazardous waste when being recycled.

Exclusion from the Definition of Solid Waste for Processed Scrap Metal

In May, 1997 EPA promulgated a provision excluding from regulation as a solid waste scrap metal that is both recycled and processed. (See 40 CFR 264.1(a)(13)). Processed scrap metal is defined at 40 CFR 261.1(c)(10) as scrap metal which has been manually or physically 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 baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted), and fines, drosses and related materials which have been agglomerated. Note that this exclusion is from the definition of solid waste, which indicates that the material is not just exempt from regulation as hazardous waste, but is not classified as a waste. In the 1997 rulemaking, the Agency determined that processed scrap metal being recycled is distinct from other secondary materials defined as wastes.

Does the Processed Scrap Metal Exclusion Apply to Used Oil Filters and What Constitutes Scrap Metal Processing?

You asked two questions: (1) whether the processed scrap metal exclusion applies to used oil filters; and (2) whether the act of draining used oil from used oil filters constitutes scrap metal processing. These questions can be answered generally through application of these regulatory provisions described above.

This exclusion can apply to used oil filters that meet both the definition of "scrap metal" in 261.1(c)(6) *and* undergo processing as defined in 40 CFR 261.1(c)(10). *It is important to emphasize that this exclusion only applies to processed scrap metal being recycled.* Although EPA did not specifically discuss used oil filters in the processed scrap metal rulemaking, the Agency intended the exclusion to cover all scrap metal that has been processed, including used oil filters. EPA does not see any reason to distinguish drained used oil filters, which may be contaminated with small amounts of used oil, from other types of scrap metal, which may be

contaminated with small amounts of other liquid hazardous wastes. This 1997 exclusion did not revoke or replace the 1992 used oil filter exemption. 40 CFR 261.4(b)(13) continues to exempt filters that are sent for disposal in lieu of recycling, and to recycled filters that are hot-drained, but not processed.

Draining a used oil filter would not, by itself, meet the new definition of processing in 40 CFR 261.1(c)(10). Physical alteration of the filter is required. Two of the methods specified in the 1992 used oil filter exemption in 40 CFR 261.4(b)(13) appear to involve sufficient physical alteration to allow the drained filters to qualify for the processed scrap metal exclusion (hot draining and crushing and dismantling and hot-draining). Other draining methods, such as shredding, that were not mentioned in the used oil filter exemption may also constitute processing. Shredded used oil filters may qualify as scrap metal if sufficient liquid is removed, and also as processed scrap metal, if sufficient physical alteration takes place.

In your April 6, 1998 memorandum, you raised the concern that EPA may have violated the Administrative Procedures Act if properly drained and crushed used oil filters are considered processed scrap metal. EPA proposed and promulgated the processed scrap metal exclusion under standard regulatory procedures. While it is true that the proposed and final regulatory language did not specifically mention used oil filters, it also did not individually identify all other types of scrap metal that it covered. EPA intentionally wrote the rule broadly to cover all types of processed scrap metal that could legitimately be recycled. Thus, EPA believes adequate notice and opportunity to comment on this rule was provided.

Environmental Considerations

Material that is removed from processed scrap metal is newly generated waste and subject to a waste determination. In the case of drained and processed used oil filters, any residual oil that leaks out of the filters is newly generated used oil subject to the used oil management standards of 40 CFR Part 279. Therefore, processed used oil filters that have a potential to leak residual used oil should be managed so that the residual oil can be collected (e.g., stored in appropriate containers). If used oil filters are inappropriately stored and residual used oil leaks onto the ground, the used oil is considered to be improperly disposed and is subject to a hazardous waste determination.

The Agency believes that this policy will encourage recycling of used oil filters. In the 1997 processed scrap metal exclusion, EPA believed that removing some of the regulatory barriers for processed scrap metal would create more recycling markets for all types of processed scrap metal. This increased flexibility will benefit all used oil filter recyclers, since the filters that they send for recycling have generally been processed.

State Specific Considerations

Please be aware that some states may regulate used oil filters and processed scrap metal more stringently. Under Section 3006 of RCRA (42 U.S.C. Section 6926) individual states can be authorized to administer and enforce their own hazardous waste programs in lieu of the

Federal program. Also, under Section 3009 of RCRA (42 U.S.C. Section 6929) authorized states retain authority to promulgate regulatory requirements that are more stringent than Federal regulatory requirements. Therefore, authorized States may choose not to adopt the processed scrap metal exclusion or may choose to have more stringent requirements for all or some materials which would qualify as a processed scrap metal under the Federal program. You should contact your state regulatory agency to see if the information in this letter is applicable.

If you have any further questions regarding the processed scrap metal exclusion as it applies to used oil filters, please contact Tom Rinehart at (703) 308-4309 or Kristina Meson at (703) 308-8488.

Sincerely,

Elizabeth A. Cotsworth

Elizabeth A. Cotsworth
Acting Director
Office of Solid Waste

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FILE COPY

JAN 12 1994

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

Sharon L. Crawford
Project Manager
Pro-Act
Air Force Center for Environmental Excellence
Pollution Prevention Division
8106 Chennault Rd., Bldg. 1161
Brooks AFB, TX 78235-5318

Dear Ms. Crawford

This letter responds to your request for information on the proper disposal methods for hydraulic fluid filters used in aircrafts.

You ask whether hydraulic fluid filters are regulated in the same manner as used oil filters destined for disposal. Non-terne plated used oil filters from light duty vehicles and destined for disposal, are exempt from identification as a hazardous waste under regulations promulgated on May 20, 1992 (40 CFR 261.4(b)(15)). Light duty vehicles include automobiles, passenger vans, and light duty trucks (e.g., small pickup trucks). EPA decided to categorically exempt non-terne plated used oil filters destined for disposal from being identified as a hazardous waste based upon available toxicity characteristic data. However, EPA did not receive hydraulic fluid filter data to make a determination on hydraulic fluid filters in aircrafts. Therefore, hydraulic fluid filters are not included in the used oil filter exemption at 40 CFR 261.4(b)(15). However, a hazardous waste determination can be made for the hydraulic fluid filters (40 CFR 262.11). If the hydraulic fluid filters are determined not to be hazardous and cannot be recycled under Part 279, the hydraulic fluid filters must be disposed in accordance with the requirements of 40 CFR Parts 257 and 258. See section 279.81(b).

As stated in your letter, hydraulic fluid is regulated as used oil. Materials containing or otherwise contaminated with used oil (e.g., hydraulic fluid filters), from which the used oil has been properly drained or removed to the extent possible are not considered used oil under the Part 279 used oil management standards. There is one exception to this provision; hydraulic fluid filters from which used oil has been removed continue to be regulated as used oil if they are to be burned for energy recovery, regardless of the degree of removal (see page 26425 of

the May 3, 1993 Final rule). Otherwise, once the used oil has been removed, the hydraulic fluid filters are no longer subject to the used oil regulations, but may be regulated as hazardous waste if they are listed or exhibit a characteristic of hazardous waste. Used oil that has been removed from the hydraulic fluid filters continues to be regulated as used oil and must be managed according to the Part 279 used oil management standards.

If you have any further questions regarding this matter, please contact Bryan Groce of my staff at (202) 260-9550.

Sincerely,

Elizabeth A Cotsworth

Michael H. Shapiro, Director
Office of Solid Waste

Record Detail

Full Document:	
Title:	SCRAP METAL REMOVED FROM SPENT ALKALINE BATTERIES THAT ARE RECYCLED
Date:	10/20/86
To:	Morford
From:	Straus
Organization of Recipient:	Stoel, Rives, Boley, Praser, and Wyse
Description:	zinc bar, nickel and cadmium plate, and steel scrap from batteries are scrap metal; mixtures of scrap metal and non-scrap metal (lead oxide sludge) removed from spent lead-acid battery are hazardous waste, not scrap metal; scrap metal exempt when recycled whether characteristic or not; metal that contains only an oily film still scrap metal (SEE ALSO: 261.4(a)(13) exclusion for processed scrap metal)
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c); 261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	Batteries, Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	2
Fax-On-Demand Code:	11184
EPA Document Number:	NA
RPC Number:	10/20/86 - 4
RPPC Number (if applicable):	9441.1986(79)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11184
9441.1986(79)

October 20, 1986

Mr. J. Mark Morford
Stoel, Rives, Boley, Fraser, and Wyse
900 S. W. Fifth Avenue
Suite 2300
Portland, Oregon 97204-1268

Dear Mr. Morford:

This is in response to your letters of August 14 and September 26, 1986, regarding the regulatory status of the materials--namely, zinc bar, nickel plate, cadmium plate, and steel scrap that are removed from spent alkaline batteries. In particular, you request confirmation that the materials removed from these batteries are scrap metal, and that they are exempt from the hazardous waste regulations. As we discussed, scrap metal (as defined in □261.1(c)(6))1/ is currently exempt from the Federal hazardous waste regulations whether or not the scrap metal exhibits one or more of the hazardous waste characteristics. See 40 CFR □261.6(a)(3)(iv). In looking at the samples you sent me, I agree with you that these materials are scrap metal, and if recycled, would be exempt from regulation under the Federal hazardous waste rules.2/

I must make you aware, however, that if these materials (i.e., zinc bar, nickel plate, cadmium plate, steel scrap) when removed from the battery are mixed with non-scrap metal type material, the mixture would not be considered a scrap metal, and would be subject to regulation if the mixture itself exhibits one or more of the hazardous waste characteristics. (This would not be the case if the scarp metal only contained as oily film.)

1/ "Scarp metal" is bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be

combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled).

2/ As you are aware, the State of Oregon's hazardous waste regulations may be more stringent than the Federal program. Therefore, you need to check with the State regarding the regulation of these materials.

For example, when spend lead-acid batteries are cracked to recover the lead, the material removed from the battery is a mixture of scrap plate and a lead oxide sludge type material. The mixture, we have determined, is not scrap metal; in addition, we have also determined that this mixture is hazardous since it exhibits one or more of the hazardous waste characteristics. Therefore, the lead material recovered from spent lead-acid batteries is subject to the hazardous waste rules. If, however, the material removed from spent alkaline batteries is just "scrap metal," this material (if recycled) would be exempt from the Federal hazardous waste rule.

Please feel free to give me a call if you have any further questions; my telephone number is (202) 475-8551.

Sincerely,

Matt Straus, Chief
Waste Identification Branch

cc: Jan Whitworth (Oregon DBC)
Ken Feigner (EPA Region X)

Record Detail

Full Document:	
Title:	TORPEDO PROPULSION UNITS SHIPPED FOR RECYCLING, REGULATION OF
Date:	02/25/86
To:	Volz
From:	Williams
Organization of Recipient:	McKenna, Conner and Cuneo
Description:	metal torpedo components which must be decontaminated before reuse not exempt under 261.2(e); components are scrap metal, exempt when reclaimed; sump defined as tank can be wastewater treatment unit (WWTU); hazardous waste (HW) surface impoundments not WWTUs; if storing HW prior to neutralization and not part of WWTU or other exempt unit, sump subject to 262.34 or Parts 264/Part 265
Part(s) & Subpart(s):	260 Subpart B; 261 Subpart A; 262 Subpart C; 264 Subpart A; 265 Subpart A; 270 Subpart A
Section(s):	260.10; 261.1(c); 261.2(e); 261.6(a)(3); 262.34; 264.1(g)(6); 265.1(c)(10); 270.1(c)(2)
Statutory Citation(s):	NA
Topic(s):	Generators, Hazardous Waste, Hazardous Waste Recycling, Permits and Permitting, Land Disposal Units, Large Quantity Generators (LQG), Military Munitions, Petitions, Surface Impoundments, Tanks, Treatment, TSDFs
Approximate Number of Hardcopy Pages:	3
Fax-On-Demand Code:	11134
EPA Document Number:	NA
RPC Number:	02/25/86 - 1
RPPC Number (if applicable):	9441.1986(14)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11134

9441.1986(14)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FEB 25 1986

Mr. Christian Volz Esq.
McKenna, Conner, and Cuneo
1575 Eye Street
Washington, D.C. 20460

Dear Mr. Volz

This in response to your letter dated January 9, 1986, in which you request an interpretation of the hazardous waste rules regarding the regulatory status of the Torpedo Propulsion Units that are shipped for recycling to the San Tan facility of the Garrett Pneumatic Systems Division (GPSD). As we understand the process, GPSD designs, manufactures, and supplies to the Honeywell Underseas Division the afterbody of the MK 50 Torpedo. Contained in the afterbody of the torpedo is a chemical energy propulsion system (referred to as the "boiler") that generates the thermal energy used to propel the torpedo. (Heat for the process is caused by a chemical reaction between two reactive compounds -- lithium and sulphur hexafluoride.)

After a torpedo has been run and tested, it is disassembled and the boiler (as well as other components) is shipped back to GPSD's San Tan facility for reuse. Before the boiler can be reused, however, it must be cleaned to remove any unreacted chemicals and the residues left by those chemicals that did react. This cleaning operation appears to be carried out in two steps:

□ The boiler is first flushed with a mixture of water and ethylene glycol this mixture reacts with any unreacted lithium metal to form lithium hydroxide in an aqueous

solution. These rinsewaters may be corrosive when it leaves the boiler. The rinsewater is collected in a sump, from which it is then pumped into a 10,000 gallon holding tank. As the rinsewater is pumped out of the sump, sulfuric acid is added in line through an educator and mixed to neutralize the excess alkalinity in the rinsewater as well as convert the lithium hydroxide in the rinsewater to lithium sulfide; at this point, the rinsewater no longer is corrosive nor does it exhibit any other hazardous waste characteristics. The lithium sulfide settles out in the holding tank. After a sufficient amount has settled out, the material will be filtered and

sent to a refinery of lithium ore for use in its process. You indicate that the lithium sulfide does not exhibit any of the hazardous waste characteristics.

□ any remaining lithium salts (i.e., products of the reaction when the torpedo is run) are then removed with a high-velocity water jet. The lithium salts are collected and placed in drums for eventual return to a refiner of lithium ore. You also indicated that the lithium salts also do not exhibit any of the hazardous waste characteristics.

Based on this recycling process, you believe that the used boilers (and the used torpedoes and afterbodies of which the boilers are apart) are not subject to the hazardous waste regulations, either at the Federal or State level.

As you are aware, on January 4, 1985, EPA promulgated its final rules dealing with the question of which materials are solid and hazardous wastes when they are recycled. Among other things, these rules state materials that are directly used/ reused are not solid wastes. See 40 CFR 261.2(e). Although the boilers are shipped to the San Tan facility to be reused, the boilers must be regenerated before they can be reused (i.e., they must be decontaminated before being reused). Since

these boilers would be defined as scrap metal, these boilers would be defined as solid and hazardous wastes when reclaimed.1/ See 40 CFR 261.2 (c)(3). However, hazardous scrap metal that is recycled is currently exempt from regulation. See 40 CFR 261.6(a)(3)(iv). Therefore, the transportation and storage of the boilers prior to the processing is exempt from the hazardous waste regulations.2/

With regard to the cleaning operation, these activities generate materials that also need to be evaluated with regard to their regulatory status. The lithium salts that are removed from the boiler with the high-velocity water jet would not be subject to Subtitle C control since these salts are not hazardous. The other rinsate (i.e., ethylene glycol/water mixture), however, is hazardous (or may be hazardous) when first generated and may be subject to the hazardous waste rules.

In particular, this rinsing solution is placed in a sump prior to neutralization. While we agree with you that the neutralization of this rinsewater is exempt from regulation and

1/ This assumes, of course, that the boilers exhibit one or more of the hazardous waste characteristics.

2/ This interpretation represents the regulatory status of these boilers under the Federal regulations and not necessarily under State law. However, since the San Tan facility is on Indian lands, the federal regulations would apply in this case.

the handling of this material after neutralization is also exempt from regulation (since the rinsewater is no longer hazardous), the regulatory status of the rinsewater in the sump is still at issue. More specifically, in November, 1980, EPA exempted from regulation those wastewaters that are stored/treated in tanks; however, this exemption only applies if the tanks are part of the wastewater treatment system that are subject to regulation under either Section 402 or Section 307(b) of the

Clean Water Act (CWA). Therefore, if the sump (which I assume would be defined as a tank) is part of a wastewater treatment system that is subject to regulation under the CWA, the storage of the hazardous rinsewater would be exempt from regulation. If however, the sump is not part of a wastewater treatment system that is subject to regulation under the CWA, the sump holding the hazardous rinsewater would be subject to the appropriate standards (i.e., the sump would be subject to 40 CFR 262.34 or 40 CFR Parts 264 and 265). It should be noted that if the sump is not a tank, but rather a surface impoundment, the sump would be subject to regulation no matter whether this unit is part of a wastewater treatment facility that is subject to regulation under the CWA. See 40 CFR Parts 260.10 (definition of wastewater treatment unit and tank) and 264.1(g)(6) for specific regulatory language.

I hope this letter adequately responds to your request. Please feel free to contact Mr. Matthew A. Straus, of my staff, if you have any other questions; Mr. Straus can be reached at (202) 475-5551.

Sincerely yours,

Marcia Williams
Director
Office of Solid Waste

Record Detail

Full Document:	
Title:	REGULATORY REQUIREMENTS FOR ON-SITE TREATMENT OF OXYGEN BREATHING APPARATUS (OBA) CANISTERS
Date:	05/09/94
To:	Mauro
From:	Bussard
Organization of Recipient:	U.S. Navy
Description:	oxygen breathing apparatus (OBA) used by firefighters could qualify as exempt scrap metal when recycled; no need to determine if recycled scrap metal is hazardous waste (HW); emptying steel OBA canister could be exempt scrap steel recycling process if canisters are to be recycled (SEE ALSO: 261.4(a)(13) exclusion for processed scrap metal); emptying canisters to render them nonhazardous prior to disposal may be regulated treatment; HW canisters may be accumulated on-site without a permit under 262.34; tanks meeting wastewater treatment unit definition are exempt from permitting requirements
Part(s) & Subpart(s):	260 Subpart B; 261 Subpart A; 262 Subpart A; 262 Subpart C; 264 Subpart A; 265 Subpart A; 270 Subpart A
Section(s):	260.10; 261.6(a)(3); 261.6(c); 261.7; 262.11; 262.34; 264.1(g)(6); 265.1(c)(10); 270.1(c)(2)
Statutory Citation(s):	NA
Topic(s):	Containers, Disposal, Generators, Hazardous Waste, Hazardous Waste Recycling, Identification of Hazardous Waste, Permits and Permitting, Large Quantity Generators (LQG), Nonhazardous Waste, Petitions, Storage, Tanks, Treatment, TSDFs
Approximate Number of Hardcopy Pages:	17
Fax-On-Demand Code:	11835
EPA Document Number:	NA
RPC Number:	05/09/94 - 3
RPPC Number (if applicable):	9441.1994(10)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11835

9441.1994(10)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
Office of Solid Waste and Emergency Response

May 9, 1994

Mr. Scott Mauro
Navy Facilities Engineering
Service Center Code 423
560 Center Drive
Port Hueneme, CA 93043-4328

Dear Mr. Mauro:

Thank you for your letter of January 18, 1994, requesting information about regulatory requirements for on-site treatment of Oxygen Breathing Apparatus (OBA) canisters. Please note that this reply only concerns the federal hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). The state in which the unit is being operated may have additional requirements. Also, we are not providing information with respect to air or water requirements under other environmental statutes; we can only discuss hazardous waste regulations.

As I understand the process you are researching, used OBA canisters are inserted into an OBA rinsing unit, where they are punctured to remove the oxygen candle and to allow wash water to enter the canister. The canisters are flooded with wash water which, when spent, is pumped into a holding tank for treatment. The canisters are then rinsed and the rinsewater is reused. The rinsed cans are to be recycled as scrap metal, and the water treated in a large holding tank and discharged into the sewer.

Both the hazardous wastes which may be contained in the used OBA canisters and the water resulting from washing and rinsing activities may be subject to RCRA regulation. I will discuss the regulatory status of the used OBA canisters and the water resulting from cleaning the canisters separately.

OBA Canisters

Based on the information accompanying your letter, both the spent OBA canisters and/or component parts are likely to exhibit at least one characteristic of a hazardous waste, (e.g., D001-ignitability) as defined in 40 CFR 261 Subpart C. Compliance with the hazardous waste generator standards found at 40 CFR Part 262 is necessary for persons, who, by site, generate more than 100 kilograms of hazardous waste per calendar month.

Generators may accumulate wastes on-site without a permit for 90 days or less before shipping the waste off-site to interim

status or permitted hazardous waste management or recycling facilities, as long as they comply with the applicable requirements of 40 CFR Section 262.34. These requirements stipulate that the waste must be held in containers or tanks, and that the interim status requirements for containers and tanks be met (Section 265, Subparts I and J), as well as certain other requirements as outlined in 262.34.

In your case, the process of emptying the canisters could be considered part of a recycling process (i.e., scrap steel recycling). Recycling activities are exempt from RCRA regulation under 40 CFR 261.6(c) (except as specified in 40 CFR 261.6(d)). Also, if the canisters are to be recycled, the canisters themselves would be exempt from RCRA regulation under 40 CFR 261.6(a)(3)(iv). A determination of ignitability or any other characteristic would not be relevant if you are recycling the steel canister. If all of the materials generated by this process are being discarded (including the cans), then the process is not recycling, and may require a RCRA permit. Any liquids or contained gases removed from OBA canisters (or otherwise generated during the recycling process) may be subject to regulation as hazardous wastes if they are listed in Subpart D of 40 CFR Part 261 or if they exhibit any characteristics of hazardous waste as described in Subpart C of 40 CFR Part 261.

To dispose of a canister as non-hazardous waste (rather than recycle it), a generator would have to determine that the can is empty under 40 CFR 261.7 (or that the product it contained was not hazardous), and that the can itself is not hazardous. If a canister is to be disposed, and either contains hazardous waste or is a hazardous waste, it must be managed under all applicable regulations. In addition, the process of puncturing and rinsing the canisters could no longer be considered exempt recycling, and might require a RCRA permit (as described above).

Other Wastes from Processing the Canisters

Any wastes generated by the recycling process (e.g., sludges, wastewater, unwanted parts/pieces) would need to be evaluated separately to determine whether they are hazardous under RCRA. If hazardous, the requirements of 40 CFR part 262 apply with respect to these new wastes (e.g., storage in tanks or containers, and 90-day accumulation limits, etc.).

In the case where this newly-generated waste is a wastewater, EPA exempts tanks from permitting requirements under the wastewater treatment unit exemption in 264.1(g)(6) and 270.1(c)(2)(v). The definition of "wastewater treatment unit" consists of three parts enumerated at 40 CFR Section 260.10. First, the unit must meet the definition of "tank" or "tank system" also found in Section 260.10. Second, the tank must be receiving, treating, or storing hazardous wastewater. Finally, the facility must be subject to Sections 307(b) or 402 of the Clean Water Act; this includes wastewater treatment units at facilities that (1) discharge treated wastewater effluent into surface waters or into a Publicly-owned Treatment Works (POTW) sewer system, or (2) produce no treated wastewater effluent as a direct result of such requirements.

Please be aware that this letter addresses only the federal hazardous waste regulations. Authorized State agencies implement the RCRA program in their states (although some parts of the program may be implemented by the U.S. EPA Regions), and that state regulations may be more stringent than the federal regulations. You should contact the appropriate state environmental agency or U.S. EPA Regional Office to determine how the regulations of that particular state will apply to your activities.

If you have questions about this letter, please contact Ann Codrington of my office at (202)260-8551.

Sincerely,

David Bussard, Director
Characterization and Assessment Division

Attachment

Department of the Navy
Naval Facilities Engineering Service Center
500 Center Drive
Port Hueneme, CA 93043-4328

January 18, 1994

Mr. Michael Shapiro
OS-300 USEPA
Director of the Office of Solid Waste
401 M Street S.W.
Washington, D.C. 20460

Dear Mr. Shapiro,

I am writing this letter to request that the EPA evaluate and provide the Naval Facilities Engineering Service Center (NFESC) with all regulatory requirements that apply concerning the introduction of a hazardous waste treatment technology. The proposed technology will reduce the amount of hazardous waste associated with Oxygen Breathing Apparatus (OBA) canister usage. The OBA canisters is used by fire fighters and is designed to generate oxygen via a chemical reaction. NFESC is currently developing a technology for treating spent and partially spent OBA canisters at the Naval Station in Norfolk, Virginia, and Mayport, Florida. The feasibility of implementing this technology hinges on the regulations and permitting that will be required.

Enclosed is a report summarizing the proposed technology for the on-site treatment process and a copy of the OBA canister MSDS. In addition, I have enclosed a copy of the Certificate of Analysis showing the constituents present in the triple rinse of the OBA canister.

Currently, there is no other technology or source reduction measures available for used OBA canisters. Development and

implementation of a non-hazardous breathing apparatus is over five years away. As an interim measure, NFESC offers a technology for reducing the hazardous waste associated with OBA canisters.

The Department of the Navy is evaluating this proposal in order to reduce our hazardous waste volume. Our primary concerns are safety, compliance with all local, state and federal regulations, and protection of the environment. I would greatly appreciate your assistance to review the literature and comment on the regulatory requirements, if any, that would be required to implement this technology.

If you have any additional questions or require further information, please contact Mr. Scott Mauro at (805) 982-4889. Please address your response to:

Scott Mauro
NFESC Code 423
560 Center Drive
Port Hueneme, CA 93043-4328

Thank you for you assistance.

Sincerely,

Gary S. Gasperino
Division Head, Pollution Prevention Division
By direction of the Commanding Officer

Record Detail

Full Document:	
Title:	REGULATORY STATUS OF BRASS PARTICLES GENERATED IN THE BELTING AND BUFFING OF BRASS CASTINGS
Date:	09/14/93
To:	Yazdanpanah
From:	Petruska
Organization of Recipient:	Price Pfister Inc.
Description:	scrap metal that fails toxicity characteristic for lead is excluded from RCRA Subtitle C regulation when recycled; determination of whether brass particles from belting/buffing of brass castings are scrap metal is made by state or Regional office (SEE ALSO: 261.4(a)(13) exclusion for processed scrap metal)
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c)(6); 261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	Characteristic Wastes, Hazardous Waste, Hazardous Waste Recycling, Toxicity Characteristic
Approximate Number of Hardcopy Pages:	1
Fax-On-Demand Code:	11769
EPA Document Number:	NA
RPC Number:	09/14/93 - 4
RPPC Number (if applicable):	9441.1993(15)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11769
9441.1993(15)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

September 14, 1993

Iraj Yazdanpanah
Environmental Manager
Price Pfister Inc.,
13500 Paxton Street
P.O. Box 4518
Pacoima, California 91333-4518

Dear Mr. Yazdanpanah,

This letter is written in response to your August 27, 1993 letter to Mitch Kidwell requesting a regulatory determination regarding brass particles generated in the belting and buffing of brass castings.

Your assessment of the Federal regulations under the Resource Conservation and Recovery Act (RCRA) is correct. A scrap metal exhibiting a characteristic of toxicity (e.g., lead) is subject to regulation as a hazardous waste. However, if the scrap metal is to be reclaimed it is a exempt from RCRA regulation.

As to whether the waste stream containing the brass particles generated at your company's Mexicali, Mexico facility meets the definition of scrap metal, EPA Headquarters is unable to make such a determination. Such determinations are case-specific and are more appropriately made by the EPA Regional office (or State regulatory agency).

Therefore, I am forwarding your letter to Mr. Jeffrey Zelikson, Director of the Hazardous Waste Management Division in the EPA Region 9 office. You may write to him at US EPA Region 9, 75 Hawthorne Street, San Francisco, California 94105. Also, I encourage you to contact the appropriate State regulatory agency.

Sincerely,
Michael J. Petruska
Chief
Regulatory Development Branch

Record Detail

Full Document:	
Title:	CLARIFICATION OF BY-PRODUCT VERSUS SCRAP METAL
Date:	03/01/90
To:	NA
From:	NA
Organization of Recipient:	NA
Description:	when reclaimed, unused off-specification printed circuit boards are commercial chemical products, used circuit boards are spent materials, and circuit board trimmings are byproducts (SEE ALSO: 261.4(a)(14) exclusion for shredded circuit boards); significant metal content (50%) criterion for scrap metal (SUPERSEDED: See RPC# 8/26/92-03)
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c)(6); 261.2(c)(3); 261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	1
Fax-On-Demand Code:	13356
EPA Document Number:	530-SW-90-090C
RPC Number:	03/01/90 - 3
RPPC Number (if applicable):	9441.1990(09a)
NTIS Number (if applicable):	PB92-131 143
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 13356
9441.1990(09a)

RCRA/Superfund/OUST Hotline Monthly Report Question

March 1990

1. Clarification of By-Product Versus Scrap Metal

A manufacturer of computer circuit boards sends unused off-specification printed circuit boards and board trimmings from the production process off-site for reclamation. The printed circuit boards are made of alternating layers of thin copper and fiberglass plates coated with tin lead; containing approximately 30% copper, 68% fiberglass, and 2% tin lead. How are the unused boards classified under 40 CFR 261.2, and are the trimmings by-products or scrap metal? Would these materials be solid wastes under RCRA?

The unused circuit boards are secondary materials. Under 40 CFR 261.2, the Agency designates those secondary materials which are RCRA Subtitle C solid wastes when recycled. According to Section 261.2(c)(3), unused off-specification commercial chemical products listed in 40 CFR 26133 are not considered solid wastes when sent for reclamation. Although the Agency does not directly address non listed commercial chemical products in the regulations, their status would be the same as those that are listed (see 50 FR 14219, April 11, 1985). The unused circuit boards are considered to be non-listed commercial chemical products, and thus, are not solid wastes when reclaimed. If, however, the circuit boards had been used and were no longer fit for use, they would be considered spent materials and defined as solid wastes when reclaimed.

The trimmings are inherently unfit for end use and will be reclaimed. In the January 4, 1985 Federal Register (50 FR 625), the Agency defines by-products as materials "that are not produced intentionally or separately, and that are unfit for end use without substantial processing." The printed circuit board trimmings meet

the definition of characteristic by-product rather than scrap metal, and are not solid wastes when reclaimed under Section 261.2(c)(3). Although the trimmings are physically similar to scrap metal, to meet the definition of scrap metal, the material must have significant metal content, i.e., greater than 50% metal. In fact, examples given in the Preamble concerning scrap metal were virtually 100% metal. Materials defined as scrap metal under Section 261.1 are solid wastes when reclaimed, and, if hazardous, are presently exempt under Section 261.6(a)(3)(iv) from Subtitle C regulation. The Agency has deferred hazardous scrap metal from regulation until appropriate information on types of scrap metal and industry management practices is made available for study.

Record Detail

Full Document:	
Title:	REGULATORY STATUS OF USED RESIDENTIAL AND COMMERCIAL/INDUSTRIAL AEROSOL CANS
Date:	10/07/93
To:	Crawford
From:	Denit
Organization of Recipient:	Steel Recycling Institute
Description:	EPA is unable to determine if aerosol cans exhibit characteristic of reactivity (D003); emptying steel aerosol can by puncturing and draining may be exempt as step in recycling can as scrap metal; steel aerosol can qualifies as scrap metal if it does not contain significant liquids (i.e., is fully drained) and is therefore exempt from regulation when sent for recycling; aerosol cans may be rendered empty in accordance with 261.7; liquid or gas removed from can is hazardous waste if listed or characteristic; no need to determine if steel aerosol can is empty once it qualifies as scrap metal (i.e., once it no longer contains significant liquids) that is destined for recycling; aerosol cans generated by households qualify for household hazardous waste exclusion; exclusion attaches at point of generation and continues to apply throughout waste management cycle
Part(s) & Subpart(s):	261 Subpart A; 261 Subpart C
Section(s):	261.1(c)(6); 261.4(b)(1); 261.6(a)(3); 261.6(c); 261.7; 261.23
Statutory Citation(s):	NA
Topic(s):	Characteristic Wastes, Containers, Hazardous Waste, Hazardous Waste Recycling, Reactive Wastes, Storage, Exclusions (RCRA), Household Hazardous Waste
Approximate Number of Hardcopy Pages:	3
Fax-On-Demand Code:	11782
EPA Document Number:	NA
RPC Number:	10/07/93 - 5
RPPC Number (if applicable):	9442.1993(02)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11782

9442.1993(02)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

October 7, 1993

Mr. Gregory L. Crawford
Vice President, Recycling Operations
Steel Recycling Institute
Foster Plaza X
680 Anderson Drive
Pittsburgh, Pennsylvania 15220

Dear Mr. Crawford:

Over the past several years we have received numerous questions concerning the regulatory status of used aerosol cans under the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations. I understand that confusion about these issues may be hindering your efforts to increase steel aerosol can recycling in this country. As environmentally protective recycling is an important part of the Agency's waste management goals, I hope that this letter will help to answer some of these questions.

RESIDENTIAL AEROSOL CANS

First, I would like to emphasize that under the federal RCRA regulations, household waste (including aerosol cans) is excluded from the definition of hazardous waste (40 CFR 261.4(b)(1)). Thus, any aerosol cans generated by households are not regulated as hazardous waste. Because this exclusion attaches at the point of generation (i.e., the household) and combines to apply throughout the waste management cycle, household aerosol cans collected in municipal recycling programs and subsequently managed in recycling programs continue to be excluded from the hazardous waste management regulations.

The data you submitted (see footnote 1) appear to confirm that the majority of used residential aerosol cans contain very little residual product or propellant. Along with your experience working with many of the 600 or more communities currently recycling these cans, the data suggest that aerosol cans can be effectively recycled. The Agency does recommend that communities running residential steel recycling programs educate their participants to recycle only empty steel aerosol cans. Participants could also be educated to: 1) purchase only the amount of consumer products that they need to minimize the quantities of unused products, 2) give unused products to someone else who can use them, 3) take unused or partially full containers to a household hazardous waste collection program if available, or 4) dispose of the partially full containers as directed on the label.

COMMERCIAL/INDUSTRIAL AEROSOL CANS

I understand that you are also interested in facilitating the recycling of aerosol cans generated by commercial or industrial generators. The remainder of this letter discusses only these non-household waste items.

We have been asked whether aerosol cans exhibit the characteristic of reactivity. At this time, the Agency is not able to determine whether various types of cans that may have contained a wide range of products are reactive. However, a steel aerosol can that does not contain a significant amount of liquid would clearly meet the definition of scrap metal (40 CFR 261.1(c)(6)), and thus would be exempt from RCRA regulation under 40 CFR 261.6(a)(3)(iv) if it were to be recycled. Therefore, a determination of reactivity or any other characteristic would not be relevant. Aerosol cans that have been punctured so that most of any liquid remaining in the can may flow from the can (e.g., at either end of the can), and drained (e.g., with punctules end down), would not contain significant liquids.

It should be noted that since the process of emptying the aerosol cans is part of a recycling process (i.e., scrap steel recycling), this activity would be exempt from RCRA regulation under 40 CFR 261.6(c) (except as specified in 40 CFR 261.6(d)). The Agency recommends that these activities be conducted in a safe and environmentally protective manner and that care be taken to properly manage any contents removed from the container (both liquids and gases). Any liquids or contained gases removed from aerosol cans may be subject to regulation as hazardous wastes if they are listed in Subpart D of 40 CFR Part 261 or if they exhibit any characteristics of hazardous waste as described in Subpart C of 40 CFR Part 261.

We have also been asked to determine whether used aerosol cans would meet the definition of "empty" under 40 CFR 261.7. Again, if the steel cans are being recycled, it is not necessary to determine whether they are "empty" under the criteria listed in 40 CFR 261.7. As long as an aerosol can being recycled does not contain significant liquids, the can is exempt as scrap metal. However, in order to dispose of a can as non-hazardous waste (rather than recycle it), a generator would have to determine that the can is empty under 40 CFR 261.7 (or that the product it contained was not hazardous), and that the can itself is not hazardous. If a can is to be disposed of, and either contains or is hazardous waste, it must be managed under all applicable regulations.

Please be aware that this letter addresses only the federal hazardous waste regulations. Authorized State agencies implement the RCRA program in their states (although some parts of the program may be implemented by the U.S. EPA Regions), and that state regulations may be more stringent than the federal regulations. Anyone managing aerosol cans should contact the appropriate state environmental agency or U.S. EPA Regional Office to determine how the regulations of that particular state will apply to their activities.

I hope this information is useful in your efforts to increase steel recycling. Thank you for the assistance that you and the Steel Recycling Institute have provided my staff in researching these issues. If you have any further questions, please call Charlotte Mooney of my staff at (202) 260-8551.

Sincerely,
Jeffrey D. Denit
Acting Director
Office of Solid Waste

cc: Waste Management Division Directors,
U.S. EPA Regions I - X

1 Texas Steel Aerosol Can Recycling Program, Final Report; Steel Can Recycling Institute (now Steel Recycling Institute), December 7, 1992.

Record Detail

Full Document:	
Title:	REGULATORY STATUS OF SPENT SOLDER BATHS, ALSO KNOWN AS ""POT DUMPS""
Date:	09/24/93
To:	Hoffman
From:	Petruska
Organization of Recipient:	Technical Advisory Services
Description:	pot dumps (spent solder baths) generally meet the definition of scrap metal and are not subject to regulation when reclaimed (SEE ALSO: 261.4(a)(13) exclusion for processed scrap metal)
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c)(6)
Statutory Citation(s):	NA
Topic(s):	Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	1
Fax-On-Demand Code:	13628
EPA Document Number:	NA
RPC Number:	09/24/93 - 1
RPPC Number (if applicable):	9441.1993(18)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

FAXBACK 13628

9441.1993(18)

REGULATORY STATUS OF SPENT SOLDER BATHS, ALSO KNOWN AS "POT DUMPS"

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

September 24, 1993

Mr. Eli Hoffman
Technical Advisory Services
358 Rolling Rock Road
Mountainside, New Jersey 07092-2120

Dear Mr. Hoffman:

This letter is written in response to your letters of March 13, 1992; January 16, 1992, and October 7, 1991. EPA regrets the delay in responding to your inquiries. The Agency has recently completed review of materials submitted by the Lead Industries Association Inc. (LIA) on spent solder baths also known as "pot dumps". As you know, EPA has previously provided guidance on the status of skimmings, sometimes called "solder dross" and the enclosed letter provides guidance on pot dumps.

Based on the information we reviewed, EPA has determined that pot dumps generally meet the definition of scrap metal (40 CFR 261.1(c)(6)) and therefore are not currently subject to regulation when reclaimed (see enclosed letter from Jeffery D. Denit to Jeffrey T. Miller, dated September 20, 1993). I hope this information is helpful. If you have any additional questions regarding this matter, please contact Paul Borst of my staff at (202) 260-8551.

Sincerely,
Michael J. Petruska, Chief
Regulatory Development Branch

Enclosure

Record Detail

Full Document:	
Title:	EXEMPTION FOR SCRAP METAL DESTINED FOR RECYCLING APPLIES AT POINT OF GENERATION
Date:	06/01/98
To:	NA
From:	NA
Organization of Recipient:	NA
Description:	scrap metal destined for reclamation is exempt from Subtitle C regulation at the point of generation; the facility must ensure that the materials will be reclaimed to prevent subjecting the scrap metal to hazardous waste regulations
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.4(a)(13); 261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	1
Fax-On-Demand Code:	14277
EPA Document Number:	530-R-98-005f
RPC Number:	06/01/98 - 5
RPPC Number (if applicable):	NA
NTIS Number (if applicable):	SUB-9224-98-006
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

3. Exemption for Scrap Metal Destined for Recycling Applies at Point of Generation

RCRA exempts from hazardous waste regulation scrap metal which is being recycled (40 CFR Section 261.6(a)(3)(ii)). In addition, RCRA excludes from the definition of solid waste, and thus the definition of hazardous waste, processed and certain other scrap metal being recycled (Section 261.4(a)(13)). A facility generates a scrap metal, which is not excluded under Section 261.4(a)(13), which exhibits the toxicity characteristic for lead (D008). The facility intends to send the scrap metal to a reclamation facility. Must the facility handle this scrap metal as a hazardous waste, including compliance with manifesting provisions, until the material is actually placed in the reclamation unit?

The facility would not need to manage as hazardous waste scrap metal destined for reclamation which is not otherwise excluded under Section 261.4(a)(13) before placement in the reclamation unit, and would not need to manifest shipments of the material off site. Scrap metal that is intended to be reclaimed is exempt from Subtitle C regulation at the point of generation. However, the mere intent to reclaim the material is not adequate for it to remain exempt. If the material is not reclaimed (e.g., if it is speculatively accumulated per Section 261.1(c)(8)), the exemption does not apply and the material remains subject to all applicable hazardous waste regulations from the point of generation. Only if the facility ensures that the material will be reclaimed will the hazardous waste regulations not apply.

Record Detail

Full Document:	
Title:	REGULATORY STATUS OF USED CUTTING OILS AND USED OIL COATED STEEL TURNINGS GENERATED DURING MACHINING OPERATIONS
Date:	11/17/93
To:	Snyder
From:	Weddle
Organization of Recipient:	NA
Description:	cutting oils, including those removed from steel turnings, may be regulated as used oil; steel turnings would be regulated as used oil as material containing or otherwise contaminated with used oil, if used oil is visibly dripping; after oil removal, steel turnings are not used oil; steel turnings may meet the definition of scrap metal
Part(s) & Subpart(s):	261 Subpart A; 279 Subpart A; 279 Subpart B
Section(s):	261.6(a)(3); 261.6(a)(4); 279.1; 279.10(c)
Statutory Citation(s):	NA
Topic(s):	Hazardous Waste, Hazardous Waste Recycling, Used Oil
Approximate Number of Hardcopy Pages:	2
Fax-On-Demand Code:	13639
EPA Document Number:	NA
RPC Number:	11/17/93 - 1
RPPC Number (if applicable):	9592.1993(09)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

FAXBACK 13639
9592.1993(09)

REGULATORY STATUS OF USED CUTTING OILS AND USED OIL COATED STEEL TURNINGS
GENERATED DURING MACHINING

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

November 17, 1993

Mr. Patrick M. Snyder, P.E.
Environmental Engineer and Attorney
407 Cortland Savings Bank Bldg.
1 North Main Street
Cortland, New York 13045

Dear Mr. Snyder:

Thank you for your letter of September 29, 1993, to Ms. Rajani Joglakar requesting clarification of whether used cutting oils and used oil coated steel turnings generated during machining operations are regulated by the Environmental Protection Agency as hazardous waste under the Resource Conservation Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Generally, these materials are not regulated as hazardous waste by EPA. The remainder of this letter explains in more detail how these materials are regulated.

Used oil is regulated by EPA under the 40 CFR Part 279 standards for the management of recycled used oil (September 10, 1992 57 FR 41586-41626). However, the Federal used oil regulations will not become effective in New York until the State adopts them as State law. New York is currently in the process of adopting standards equivalent to EPA's used oil standards. In the meantime, the New York State Department of Environmental Conservation (DEC) regulates the management of used oil under recently issued State standards. You should contact Michelle Ching at t518) 485-8988 or Bill Mirabile (518) 457-8829 for information on the New York State used oil regulations.

Under the Federal used oil management standards, the cutting oils generated by the machine shop referred to in your letter would be regulated as used oil. This would include cutting oils removed from the steel turnings. The machine shop would be considered a used oil generator subject to regulation under the used oil generator standards (40 CFR 279.20). I have enclosed a copy of the used oil regulations for your information.

Regarding regulation of the used oil coated steel turnings, under 40 CFR 279.10(c) of the used oil standards, materials containing or otherwise contaminated with used oil would be regulated as used oil until the used oil is removed from the material. In technical amendments and corrections to the used oil

rule, published on May 3, 1993, EPA clarified that "materials containing or otherwise contaminated with used oil, from which the used oil has been properly drained or removed to the extent possible such that no visible signs of free-flowing oil remain in or on the material are not considered used oil unless they are to be burned for energy recovery" (58 FR 26420). Therefore, the steel turnings referred to in your letter would be regulated as used oil if they were visibly dripping with used oil but not if all the oil had been drained off.

If the steel turnings are not regulated as used oil, it is possible that they may still be regulated as hazardous wastes under the RCRA hazardous waste regulations. Steel turnings are considered "scrap metal" and are exempt from regulations if recycled. If disposed of, the generator has to determine if the turnings exhibit any characteristics of hazardous waste (e.g. toxicity). If so, they must be managed as a hazardous waste. New York is authorized by EPA to implement the RCRA hazardous waste program. You should contact the Division of Hazardous Substance Regulation of the New York State Department of Environmental Conservation (DEC) at (518) 485-8988 to determine how the State hazardous waste regulations may apply. You may also contact the RCRA hotline at (800) 424-9346 to learn more about how the federal waste regulations may apply. Please note, however, that authorized states generally implement the RCRA hazardous waste regulations and State regulations may be more stringent than the Federal regulations.

If you have any further questions about the Federal used oil management standards, you can call Eydie Pines of my staff at (202) 260-3509.

Sincerely,
Bruce R. Weddle
Acting Director
Office of Solid Waste

Enclosure

Record Detail

Full Document:	
Title:	REGULATORY STATUS OF SPENT PHOTOCONDUCTOR DRUMS FROM PHOTOCOPYING MACHINES
Date:	11/10/92
To:	Burke
From:	Lowrance
Organization of Recipient:	Rode and Qualey
Description:	generator is responsible for determining regulatory status of spent photoconductor drums removed from photocopying machines; spent photoconductor drums taken from photocopying machines meet the definitions of spent material and scrap metal; spent drums that are recycled qualify for scrap metal recycling exclusion; only wastes that qualify as hazardous are subject to Part 262 export regulations
Part(s) & Subpart(s):	261 Subpart A; 262 Subpart A; 262 Subpart E
Section(s):	261.1(c)(1); 261.1(c)(6); 261.6(a)(3); 261.6(c)(1); 262.11; 262.50
Statutory Citation(s):	NA
Topic(s):	, Exports, Generators, Hazardous Waste, Hazardous Waste Recycling, Identification of Hazardous Waste, Large Quantity Generators (LQG)
Approximate Number of Hardcopy Pages:	2
Fax-On-Demand Code:	11710
EPA Document Number:	NA
RPC Number:	11/10/92 - 1
RPPC Number (if applicable):	9441.1992(39)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11710
9441.1992(39)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

November 10, 1992

R. Brian Burke
Rode & Qualey
295 Madison Avenue
New York, New York 10017

Dear Mr. Burke:

Thank you for your letter of June 8, 1992 in which you requested EPA's opinion on the regulatory status of spent photo-conductor drums from photocopying machines. I apologize for the delay in our response. For ease of explanation, I will separate your questions into two categories. First, I will address the regulatory status of the drums, then I will address their export status.

The spent drums meet the definition of spent material, and are therefore solid waste. They may also be characteristic hazardous waste due to the presence of cadmium [the characteristic regulatory level for cadmium is 1.0 mg/l (40 CFR 261.24)]. In your letter you describe the drums as cadmium sulfide-coated aluminum pipes. Based on your description, the drums would also meet the federal definition of scrap metal at 40 CFR 261.1(c)(6) [" ... bits and pieces of metal parts, (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled."] Secondary materials that meet the definition of scrap metal are excluded from RCRA regulation if they are recycled [40 CFR 261.6(a)(3)(iv)]. If the drums are managed as you have described, then they would qualify for the exemption from the definition of solid waste. As you know, it is the generator's responsibility to make these determinations.

The export regulations at 40 CFR Part 262 are triggered by the federal program; in other words, only wastes considered hazardous under the federal program are subject to the export regulations. However, other state regulations may apply to wastes considered hazardous by a particular state while they are in that state. You should contact each state in which you conduct your operations for more information regarding applicable state regulations.

If you have further questions on the domestic RCRA regulatory status of spent photo-conductor drums, please call Ross Elliott of my staff at (202) 260-8551. If you have questions regarding the RCRA export regulations, you may call Angela Cracchiolo at the same number.

Sincerely,
Sylvia K. Lowrance, Director
Office of Solid Waste

Record Detail

Full Document:	
Title:	SALE AND SCRAPPING OF DOT'S MARITIME OBSOLETE VESSELS FROM THE NATIONAL DEFENSE RESERVE FLEET
Date:	08/05/94
To:	Donovan
From:	Shapiro
Organization of Recipient:	The Law Offices of Jones and Donovan
Description:	purchasers of ships to be scrapped and sold abroad must determine when export rules apply; vessels destined for scrap as well as any materials necessary for operating the ship are not discarded while the vessel remains intact because those materials continue to serve a useful purpose; removal of material from ship's structure that is intended for discard is point of generatio; Section 106(a) of the Federal Facilities Compliance Act (FFCA) prohibits the storage of hazardous waste on a public vessel for longer than 90 days after the vessel is placed in reserve or is no longer in service without a RCRA storage permitn; materials from dismantled ship that are to be recycled may be scrap metal
Part(s) & Subpart(s):	261 Subpart A; 262 Subpart A; 262 Subpart E
Section(s):	261.1(c)(6); 261.2(a); 261.2(b); 261.4(c); 261.6(c)(3); 262.11; 262.50
Statutory Citation(s):	NA
Topic(s):	Exports, Generators, Hazardous Waste, Hazardous Waste Recycling, Identification of Hazardous Waste, Large Quantity Generators (LQG), Permits and Permitting, Storage
Approximate Number of Hardcopy Pages:	13
Fax-On-Demand Code:	11862
EPA Document Number:	NA
RPC Number:	08/05/94 - 1
RPPC Number (if applicable):	9441.1994(21)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11862

9441.1994(21)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

August 5, 1994

Mr. Brian J. Donovan
The Law Offices of Jones & Donovan
19782 MacArthur Boulevard
Irvine, CA 92715

Dear Mr. Donovan:

Thank you for your letter of November 8, 1993, to Ann Hardison. Ms. Hardison referred the letter to my office for response.

Your letter posed several questions regarding the Department of Transportation's Maritime Administration's sale of obsolete vessels from the National Defense Reserve Fleet, the scrapping of these vessels, and the applicability of Resource Conservation and Recovery Act (RCRA) regulations to these vessels. Specificality, you called into question the Maritime Administration's interpretation that at the time of sale, neither the vessels nor the on-board operating materials would be considered wastes. You also inquired about the Maritime Administration's position that although the sale is conditioned upon scrapping of the vessel, RCRA hazardous waste export regulations would not apply to the Maritime Administration if the vessels were to leave the country.

Although we believe it is more appropriate to determine the applicability of RCRA regulations to the National Defense Reserve Fleet vessels and the operating supplies on board the vessels on a case-by-case basis in the context of specific facts, as opposed to as a class, there are some general statements that can be made about these situations.

First, we will address your question concerning the Maritime Administration's interpretation that at the time of sale, neither the vessels themselves nor the on-board operating materials would be considered wastes. In most cases, the vessel itself, the materials which are necessary for the operation of the vessel, and the materials which are part of the vessel's structure, continue to serve a useful purpose while the vessel remains intact (i.e., they allow the vessel to continue to function as a ship). Therefore, these materials are not "discarded" at the time of sale, and are not solid wastes. It is also our understanding (see enclosed letter from Linda C. Somerville of the Maritime Administration to Daniel P. Cotter of Southwest Recycling, Inc.) that:

MARAD regularly conducts environmental audits of its

reserve fleets to ensure that the sites, and the vessels moored at those sites, are in full compliance with environmental law. As a result of these audits, over the last several years MARAD has spent considerable amounts of time and money to clear the vessels of any hazardous wastes and excess materials from the vessels, leaving on board only those items which are necessary for the operation of the vessel or which are part of the vessel's structure (emphasis added).

(In fact, pursuant to section 106(a) of the Federal Facilities Compliance Act, hazardous waste generated on a public vessel may not be stored on the vessel for longer than 90 days after the vessel is placed in reserve or is otherwise no longer in service, without a RCRA storage permit.) No materials considered solid wastes and hazardous wastes under RCRA should be on board the vessel at the time of sale. After the sale, because it is possible for additional solid and hazardous wastes to be generated aboard the ship (e.g., wastes from degreasing, paint stripping, disassembly or dismantling, etc.), the purchaser would be responsible for determining the applicability of RCRA regulations to these materials, including waste identification.

Second, we address your question about the applicability of RCRA hazardous waste export regulations to the vessels. The export occurs after the Maritime Administration has sold the vessel to the purchaser. Therefore, prior to or at the time of sale, it would be premature for the Maritime Administration to classify all the vessels as wastes and to comply with RCRA export regulations. We understand that under the rules of the ship sales program, these vessels can be scrapped either domestically or in approved foreign countries. It is our understanding that individual purchasers make the arrangements for transportation and scrapping of individual vessels, and the Maritime Administration is involved in the selection of a foreign scrapyard only to ensure that the scrapyard is in an approved foreign country. Again, purchasers will need to determine on an individual basis if, and at which point, RCRA regulations, including hazardous waste export regulations, as well as other environmental regulations, are applicable.

Third, your letter described a possible scenario in which SRI purchases a vessel and "reduces the vessel to scrap," and subsequently exports "hazardous or regulated substances." Although the circumstances in which the dismantling of any particular vessel will be situation specific, in general, the removal of materials intended for discard from, for example, the vessel's structure would be the point at which the material is "generated" as a waste. Therefore, the removal and subsequent management of these materials would be subject to RCRA, including export requirements, if these materials "as generated" meet the definition of hazardous waste.

Much of the material removed from the ship is likely to be scrap metal. As you are probably aware, scrap metal being recycled is exempt from RCRA regulations (40 CFR 261.6(a)(3)(iii)). Scrap metal, as defined at 261.1(c)(6), "is bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g.,

radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled." As stated in preambular language to this regulation: "Materials not covered by this term include residues generated from smelting and refining operations (i.e., drosses, slags, and sludges), liquid wastes containing metals (i.e., spent acids, spent caustics, or other liquid wastes with metal in solution, liquid metal wastes (i.e., liquid mercury), or metal-containing wastes with a significant liquid component, such as spent batteries (50 FR 624, January 4, 1985)."

Although your letter did not ask specifically about regulations concerning PCBs, I have enclosed for your information previous correspondence from EPA regarding the applicability of Toxic Substances Control Act PCB regulations to Maritime Administration ships. As stated in the April 2, 1993, letter, the export for disposal of PCBs at 50 ppm or greater is prohibited under TSCA.

Please note that under section 3006 of RCRA, individual states can be authorized to administer and enforce their own hazardous waste programs in lieu of the federal program. In addition, section 3009 of RCRA allows states to promulgate regulatory requirements that are more stringent than the federal program. Therefore, you should contact the appropriate state environmental agency for applicable laws and regulations that may exist.

In addition, foreign countries receiving the vessels or materials from on board the vessels may have in place laws or regulations which may ban or otherwise restrict the import into their country of the vessels or materials from on board the vessels, in order to implement the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. We understand that at least one country holds the view that vessels imported into their country for scrapping are hazardous wastes subject to the Basel Convention.

If you have any further questions, please call me or Angela Cracchiolo of my staff at (202) 260-4779. Thank you for your interest in the safe management of hazardous waste.

Sincerely,

Michael Shapiro,
Office of Solid Waste

Enclosures

Record Detail

Full Document:	
Title:	REGULATORY STATUS OF PRINTED CIRCUIT BOARDS
Date:	08/26/92
To:	Directors, Regions 1-10
From:	Lowrance
Organization of Recipient:	EPA
Description:	unprocessed, spent printed circuit boards qualify for scrap metal exclusion as generated; residuals from processing of spent circuit boards (e.g., shredded pieces, sweeps, ash, fluff, or baghouse dust) may not qualify as scrap metal, but instead may be spent materials, by-products, or sludges (SEE ALSO: 261.4(a)(14) exclusion for shredded circuit boards); residual waste generated during scrap metal recycling of printed circuit boards may no longer qualify for scrap metal exemption, but if it contains significant amounts of precious metals, the waste may be eligible for reduced recycling regulations of Part 266, Subpart F (SEE ALSO: 261.4(a)(13) exclusion for processed scrap metal)
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c); 261.4(a)(14); 261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	, Exclusions (RCRA), Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	3
Fax-On-Demand Code:	11689
EPA Document Number:	NA
RPC Number:	08/26/92 - 3
RPPC Number (if applicable):	9441.1992(27)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11689

9441.1992(27)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

August 26, 1992

SUBJECT: Regulatory Status of Printed Circuit Boards

FROM: Sylvia K. Lowrance, Director
Office of Solid Waste

TO: Waste Management Division Directors,
Regions I-X

Printed electronic circuit boards are major components of personal computers in widespread use in the U.S. today. As updated computer equipment becomes available, the older (but still usable) equipment is often placed into surplus, or is reclaimed/reused. The old equipment may be disassembled and the usable parts salvaged. Parts may also be scrapped and processed for metal values due to their obsolescence, even though they are still usable.

After the printed circuit boards themselves are disassembled, recovering usable components, the boards are often shredded or otherwise processed, and/or burned as part of the reclamation process. Later, base metals (lead, copper) or precious metals (e.g., gold, silver, or platinum) can be reclaimed through additional processing.

The International Precious Metals Institute (IPMI) has written to EPA and requested a determination under RCRA Subtitle C for the status of used printed circuit boards. The regulatory status of unused circuit boards (considered commercial chemical products) and by-product wastes from circuit board production are not affected by this memorandum. The Agency is planning to study the area of used printed circuit boards in more depth; however, our interim interpretation is discussed below.

The EPA believes that based upon the way in which used printed circuit boards are originally generated, these materials most clearly meet the definition of spent materials (261.1(c)(1)). However, we have further examined whether these boards can also be classified as scrap metal under 261.1(c)(6). Scrap metal is defined based in large part on the physical appearance of a secondary material, dependent on the presence of metal, and includes secondary materials that would otherwise be spent materials or by-products.

As a matter of policy, the Agency has decided that

unprocessed, spent (i.e., used) printed circuit boards are subject to regulation as scrap metal for the purposes of 261.6(a)(3)(iv), and are therefore exempt from RCRA Subtitle C regulation when recycled. The Agency has made this determination largely because 1) metals can be recovered from the pieces of metal parts that are an integral part of these circuit boards, and 2) unprocessed circuit boards are in a physical state similar to the type of recycled materials the Agency intended to be exempted by providing examples in the scrap metal definition (e.g., "metal parts . . . which when worn or superfluous can be recycled"). The physical state of the unprocessed spent circuit boards limits the dispersion of metal constituents during the handling and transport of the spent printed circuit boards similar to the materials defined as scrap metal in the regulatory language. (Note that this determination is limited to spent circuit boards and does not apply to other spent materials.)

After the boards are processed (including shredding, grinding, burning or smelting), the resulting material (e.g., shredded pieces, sweeps/ash, fluff, or baghouse dust) may no longer be similar to the materials that meet the definition of a scrap metal. The Agency believes that certain materials generated from the processing of spent printed circuit boards may be in a physical state which is inherently different from the more "traditional" scrap metal materials, the latter of which includes bars, turnings, rods, sheets, wire, bolts, etc. Spent circuit board processing, particularly those reclamation steps that do not involve simple physical processing, may generate materials in a form which allows the dispersion of hazardous constituents during subsequent handling. Therefore, some of these materials may not meet the definition of, nor the intent of, the scrap metal definition (analogous to the fluff generated by the shredding of scrap automobiles). Thus, at this point, the processed material may no longer be exempt from regulation as scrap metal, and could be subject to regulation as a spent material (e.g., shredded boards derived from spent circuit boards), a by-product (e.g., sweeps/ash), or a sludge (e.g., baghouse dust).

The processor must determine whether the processed material is a solid waste, and if so, whether it exhibits a characteristic of a hazardous waste, and manage the material accordingly (assuming the material no longer meets the definition of scrap metal). If the generator/processor determines that a material meets the regulatory definition of solid waste but believes the processed (i.e., partially reclaimed) material should be classified as a product rather than a solid waste, an application can be made to the Regional Administrator or authorized State regulatory agency for a case-by-case variance under section 260.30(c) of RCRA. In addition, if the processed material is a hazardous waste that contains economically significant amounts of recoverable precious metals then the materials would be subject to reduced regulations under Part 266, Subpart F.

This determination is limited to circuit boards. For further information about this interpretation, please contact Allen Maples or Ross Elliott of the Regulatory Development Branch at (202) 260-8551.

Record Detail

Full Document:	
Title:	REGULATION OF NICKEL/CADMIUM BATTERIES AS SCRAP METAL WHEN RECLAIMED
Date:	05/01/90
To:	NA
From:	NA
Organization of Recipient:	NA
Description:	used nickel/cadmium battery (batteries) is a spent material; once separated out, metal plates may be exempt scrap metal if recycled; if removed metal plates are mixed with non-scrap metal, plates lose scrap metal designation (SEE ALSO: Part 273)
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c); 261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	Batteries, Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	1
Fax-On-Demand Code:	13376
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RPPC Number (if applicable):	9441.1990(13d)
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Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 13376
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RCRA/Superfund/OUST Hotline Monthly Report Question

MAY 1990

4. Regulation of Nickel/Cadmium Batteries as Scrap Metal when Recycled

A facility owner/operator is interested in recycling nickel/cadmium batteries. The batteries are not being returned to the battery manufacturer per 40 CFR Section 261.6(a)(3)(ii) for regeneration. The owner/operator is going to recover the metal content from the nickel/cadmium plates. He believes then, that the plates should be regulated as scrap metal per 40 CFR Section 261.6(a)(3)(iv). If recycled, are these spent nickel/cadmium plates scrap metal?

The batteries themselves are spent materials and must be managed as such until the individual components (plates) can be separated out. The scrap metal portions would be regulated (i.e., exempted) as scrap metal while the rest of the battery would continue to be a spent material. This issue was addressed in an EPA letter dated October 20, 1986 to J. Mark Morford from Matt Straus. In this letter, the Agency discusses the regulatory status of certain materials--namely zinc bar, nickel plate, cadmium plate, and steel scrap that are removed from spent alkaline batteries. Specifically, the memo reads, "In particular, you request confirmation that the materials removed from these batteries are scrap metal, and that they are exempt from the hazardous waste regulations. As we discussed, scrap metal is currently exempt from the Federal hazardous waste regulations whether or not the scrap metal exhibits one or more of the hazardous waste characteristics ....I agree with you that these materials are scrap metal, and if recycled, would be exempt from regulation under the Federal hazardous waste rules."

Therefore, if recycled, the spent nickel/cadmium plates would be

considered scrap metal. But, as the letter points out, if the nickel plate or cadmium plate was mixed with non-scrap metal material after removal from the battery, the mixture would not be considered scrap metal. In this case, the mixture would be subject to regulation if the mixture itself exhibits one or more of the characteristics of a hazardous waste.

Record Detail

Full Document:	
Title:	APPLICATION OF THE SCRAP METAL EXEMPTION TO LEAD FOIL USED IN DENTAL X-RAY PACKAGES
Date:	04/29/93
To:	Truitt
From:	Lowrance
Organization of Recipient:	Piper and Marbury
Description:	lead foil from dental x-ray packages qualifies for the scrap metal exemption when recycled
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	2
Fax-On-Demand Code:	11742
EPA Document Number:	NA
RPC Number:	04/29/93 - 5
RPPC Number (if applicable):	9441.1993(05)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11742
9441.1993(05)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

April 29, 1993

Mr. Wm. Roger Truitt
Piper and Marbury
Charles Center South
36 South Charles Street
Baltimore, Maryland 21201-3010

Dear Mr. Truitt:

Thank you for your February 25, 1993, letter written on behalf of Eastman Kodak Company (Kodak) and United Parcel Service, Inc. (UPS). In your letter, you asked whether or not the scrap metal exemption found at 40 CFR 261.6(a)(3)(iv) would apply to lead foil used in dental x-ray packages once the foil was removed by dentist office personnel and accumulated under a proposed national recycling program.

The lead foil you describe is likely to exhibit the Toxicity Characteristic for lead found in 40 CFR 261.24. Based on your description, the lead foil contained in the dental x-ray package meets the federal definition of scrap metal in 40 CFR 261.1(c)(6) [". . . bits and pieces of metal parts, (e.g., bars, turnings, rods, sheets, wire)]. Secondary materials that meet the definition of scrap metal as defined in 40 CFR 261.1(c)(6) are excluded from RCRA Subtitle C regulation if they are recycled [40 CFR 261.6 (a)(3)(iv)].

Please note that under Section 3006 of RCRA (42 U.S.C. Section 6926), individual States can be authorized to administer and enforce their own hazardous waste programs in lieu of the federal program. When a State is not authorized to administer its own program, the appropriate EPA Region administers the program and is the appropriate contact for any case-specific determinations. Please also note that under Section 3009 of RCRA (42 U.S.C. Section 6926) States retain authority to promulgate regulatory requirements that are more stringent than federal regulatory requirements.

If you have further questions, please contact me, or Ross Elliott of my staff (202) 260-8551. Thank you for your interest in hazardous waste recycling.

Sincerely,
Sylvia K. Lowrance, Director
Office of Solid Waste

Record Detail

Full Document:	
Title:	APPLICABILITY OF PERMITTING TO SPENT LEAD-ACID BATTERY RECYCLING
Date:	11/28/88
To:	Norman
From:	Cochran
Organization of Recipient:	Industrial Safety and Health Consultants, Inc.
Description:	pieces of lead metal from batteries can be scrap metal; exemption no longer applies if metal pieces are mixed with other wastes that are regulated; wastes derived from spent materials are spent materials; some lead-acid battery components are not solid wastes when reclaimed; regulatory status of reclaimed battery components; EPA analysis of regulatory status of 16 materials from spent lead-acid battery recycling, including battery acid, plastic chips, metal battery pieces, and lead sulfates; spent lead-acid battery components used to produce fertilizer are used in a manner constituting disposal; fertilizer produced for general public's use that meets land disposal restrictions (LDR) treatment standards is no longer subject to regulation (SEE ALSO: Part 273)
Part(s) & Subpart(s):	261 Subpart A; 266 Subpart C; 266 Subpart G
Section(s):	261.1(c); 261.2(c)(1); 261.2(c)(3); 261.3(c)(2); 261.6(a)(2); 261.6(a)(3); 266.20; 266.80
Statutory Citation(s):	NA
Topic(s):	Batteries, Disposal, Hazardous Waste, Hazardous Waste Recycling, Land Disposal Restrictions, Treatment
Approximate Number of Hardcopy Pages:	9
Fax-On-Demand Code:	11383
EPA Document Number:	NA
RPC Number:	11/28/88 - 1
RPPC Number (if applicable):	NA
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

NOVEMBER 28, 1988

Mr. Lee Norman
Industrial Safety and Health Consultants, Inc.
201 North Central Avenue
Humboldt, TN 38343

Dear Mr. Norman:

This is in response to your letter dated July 28, 1988, in which you requested that the U.S. Environmental Protection Agency evaluate a new method/process for recycling spent lead-acid batteries. In particular, you requested a determination as to whether a RCRA permit would be required, given the operational parameters specified in the General Information Booklet you provided.

The Agency has completed its review of the information provided on your recycling process for spent lead-acid batteries. Based on our analysis and the provisions discussed herein, it appears that your process would be operated without requiring a RCRA permit. It is important that you realize, however, that this conclusion is based on the general information you provided, and is not sufficient, in and of itself, to make a site-specific determination on whether you would need to obtain a RCRA permit. For each individual facility, the appropriate Region or authorized State will have to make that determination after evaluating the actual processes and facilities employed. This is particularly true since State programs may be more stringent or broader-in-scope than the Federal program.

In the following paragraphs some general information about regulations governing recycling is provided, followed by a discussion of the wastes or products likely to be generated from the proposed spent lead-acid battery reclamation process. The letter then concludes with a summary of our analysis as to whether a permit would be required based on the hypothetical design and operational information provided.

General Recycling Standards

Under the Resource Conservation and Recovery Act (RCRA), as amended, recycled materials that are defined as solid wastes under 40 CFR 261.2 and hazardous wastes under 40 CFR 261.3 are subject to the standards in 40 CFR 261.6. These recycled hazardous wastes are called recyclable materials and are subject to the hazardous waste generator, transporter, and specific facility standards in 40 CFR 261.6 (b) and (c). Generators, transporters, and facility owners/operators must obtain EPA ID numbers. Facilities that recycle recyclable material are only subject to the Part 264 and 265 facility standards with respect to storage of the recyclable material prior to recycling. The actual recycling process (i.e., recycling unit) is not regulated unless that process is analogous to land disposal or incineration (50 FR 643, January 4, 1985).

Special Recycling Standards

Some recycling activities are subject to the special recycling standards of 40 CFR Part 266 (see Section 261.6(a)(2)). These recycling activities include using recyclable materials in a manner constituting disposal (i.e., applying the waste to the land or making hazardous waste derived product that is applied to the land), spent lead-acid battery reclamation, burning hazardous waste or characteristically hazardous used oil for energy recovery in certain boilers and furnaces, and precious metal reclamation.

Recyclable materials used in a manner constituting disposal are subject to Part 266, Subpart C, which requires compliance with all generator and transporter requirements, and specific facility standards for storage and reuse. Any accumulation of the recyclable material (i.e., hazardous waste) prior to recycling is subject to 90-day generator accumulation standards for containers or tanks, or facility standards for other storage units. Commercial products used in a manner constituting disposal are not currently regulated if the recyclable materials have undergone a chemical reaction in the course of producing the waste derived product to make the components inseparable and if the hazardous waste derived product meets any applicable treatment standards for hazardous waste constituents as outlined under the land disposal restrictions of 40 CFR 268. Although no chemical bonding occurs in producing fertilizers, they are also exempt provided they meet the Part 268 standards as well. The products must also be produced for the general public's use to be exempt from regulation per 40 CFR 266.20(b).

Spent lead-acid battery reclamation regulations are found in Part 266, Subpart G. Generators, transporters and storers are not subject to regulation under 40 CFR Parts 262 through 266 or Parts 270 or 124 or Section 3010 of RCRA per 40 CFR 266.80(a). However, reclaimers who store batteries prior to reclamation are subject to most facility standards and permit requirements with regard to storage per 40 CFR 261.6(a) and 40 CFR 266.80(b). Generally, the reclamation process itself is exempt from regulation.

Proposed Reclamation Process

Industrial Safety and Health Consultants submitted information to EPA on a proposed lead-acid battery reclamation process. The reclamation process will produce a variety of materials which need to be evaluated under RCRA to determine the applicability of the hazardous waste regulations. All of the materials resulting from this reclamation facility will be either reused/recycled on-site or sold to other users and reclaimers. The applicability of RCRA to these materials is dependent upon how they are classified and managed (i.e., treated, stored, recycled). If any of the materials are not reused or resold for further use or reclamation, a treatment permit will likely be required in addition to the analysis described below. The materials that need to be evaluated include:

(1) Spent Battery Acid
(2) Metal Battery Pieces
(3) Lead Sulfates
(4) Sulfates
(5) Lead Carbonates
(6) Plastic Chips
(7) Furnace Flue Dust
(8) Iron Furnace Slag
(9) Furnace Dross

(10) Molten Lead
(11) Refining Kettle Dust
(12) Refining Kettle Dross
(13) Lead Ingots
(14) Wastewater and Wastewater Treatment Sludge
(15) Dust From Vacuum System
(16) Ammonium Sulfate and Associated Wastes

Based on the description of the reclamation process, it appears that intermediate storage will be needed for metal battery pieces, lead oxides, emission control dust (i.e., K069), and other materials prior to reclamation. It is likely that the 90-day accumulator regulations of 40 CFR 262.34 apply to recycling facilities storing batteries and intermediates. To avoid any requirement for a permit, the owner/operator must accumulate these wastes in tanks or containers no more than 90 days after generation or first subjection to regulation in accordance with the Part 262 generator standards. Some waste materials, however, may not be subject to any standards. If defined as scrap metal or as characteristically hazardous by-products or sludges, these materials are exempt from regulation when reclaimed per 40 CFR 261.6 or are not solid wastes when reclaimed per 40 CFR 261.2(c)(3). With regard to the wastes chemically reacted to produce fertilizer, they must also be accumulated in tanks or containers for no more than 90 days, in accordance with Part 262 standards, to avoid any requirement for a permit.

The key to determining what regulations apply is proper classification of waste materials and processes in accordance with the definitions in 40 CFR 260.10, 261.1 and 261.2. The wastes or products generated from the proposed lead-acid reclamation process and the applicable regulations are discussed below.

Spent Battery Acid

The acid component of the spent lead-acid batteries will be collected, filtered, and accumulated in a tank prior to further treatment and conversion to ammonium sulfate, which will be sold commercially as a fertilizer. Since this acid is a spent corrosive material, is possibly EP toxic, and will be reused in making a fertilizer, it is likely to be subject to the hazardous waste standards of 40 CFR 266, Subpart C. Part 266, Subpart C addresses use constituting disposal and requires notification to obtain an EPA ID number, compliance with all generator and transporter standards in 40 CFR 262 (which includes a 90 day limit for accumulating the acid in a tank) and Part 263.

If the 90 day accumulation is exceeded before manufacturing the fertilizer, a storage permit would be needed under 40 CFR 264. If the acid is not accumulated prior to fertilizer production, but instead piped directly into the treatment/recycling tank, no generator standards would apply. Only accumulation or storage prior to recycling is regulated, not the actual recycling process or recycling units per 40 CFR 261.6(c)(1). Once the fertilizer is produced, it is not regulated provided it is produced for the general public's use and meets the treatment standards under the land disposal restrictions in 40 CFR 268 for each hazardous waste constituent per 40 CFR 266.20(b) (53 FR 31212, August 17, 1989).

Metal Battery Pieces

The battery reclamation unit referred to as the MA-41 will clean and generate bits and pieces of lead metal from batteries. This metal will be accumulated in containers until it can be used in the refining kettles to produce lead ingots. These bits and pieces of metal would be classified as spent materials since they are derived from spent batteries which are classified as spent materials. The bits and pieces of metal could also meet the scrap metal definition in 40 CFR 261.1(c)(6). In the January 4, 1985 Federal Register (50 FR 624), EPA stated that all scrap metal should be classified the same for regulatory purposes rather than classify some metal as spent materials and some as by-products. Thus, the scrap metal classification should take precedence and its storage prior to reclamation would be exempt under 40 CFR 261.6(a)(3)(iv). If, however, these metal battery pieces are mixed with other wastes that are regulated, the exemption would no longer apply.

Lead Sulfates

The MA-41 reclamation process will generate lead sulfates from the spent batteries. The lead sulfates will be desulfurized and chemically converted to lead carbonate which is dewatered, pelletized, accumulated in a silo, and charged to the smelting furnace to produce molten lead. The lead sulfates are derived from spent materials (i.e., batteries) and therefore are themselves classified as spent materials which, if they are a characteristic hazardous waste, are subject to the generator and transporter requirements of Section 261.6(b), including 3010 notification. Thus, the lead sulfates may be accumulated for 90 days in a tank or container in accordance with Section 262.34. Accumulation for greater than 90 days will trigger the requirement for a storage permit per Section 261.6(c)(1).

Sulfates

Sulfates are produced from the desulfurization of lead sulfates and are classified as spent materials since they are derived from spent materials. These sulfates will be added to the battery acid tank(s) to produce ammonium sulfate, which will be sold as fertilizer. If these sulfates are characteristically hazardous, they are recyclable materials used in a manner constituting disposal and should be treated as previously described for battery acid.

Lead Carbonates

Lead carbonates will be produced as a result of chemical treatment of lead sulfates as mentioned above. These materials are derived from spent materials and so they are classified as spent materials. If hazardous by characteristic, the lead carbonates should be treated as previously described for lead sulfates.

Plastic Chips

The plastic battery casings are spent materials since they are derived from spent batteries. They will be ground and washed in the MA-41 battery reclamation process. If the plastic pieces exhibit a hazardous characteristic, they should be treated as previously described for lead sulfates.

Furnace Flue Dust

The lead dust captured by the air pollution control equipment for the smelting furnace is classified as the listed waste K069, emission control dust/sludge from secondary lead smelting. It will be accumulated in a silo prior to reclamation in the smelting furnace or sold to another reclaimer. Provided the silo meets the definition of "tank" or "container", its accumulation is subject to 40 CFR 262.34 generator accumulation standards. Once the K069 is reintroduced into the furnace, it would no longer be viewed as a solid or hazardous waste because it is considered indigenous to the secondary smelting process and contains no toxic constituents not already present in the normal feed material to the secondary lead smelter (53 FR 31198, August 17, 1988). Notwithstanding, the facility will be considered a generator of K069, and subject to applicable regulations under 40 CFR 261.6(b). If secondary smelting does not occur quickly, so that K069 accumulates for greater than 90 days, the facility will be subject to applicable requirements of Section 261.6(c).

Since K069 is not a solid waste when it is reintroduced into the smelting furnace, any smelting waste (e.g. furnace dross, iron slag) would not be classified as K069 through the "derived-from rule" (id). Such wastes would only be hazardous if they exhibit a characteristic. Even if characteristic, no regulation applies to their accumulation or storage prior to reclamation, because characteristic by-products are not solid wastes when reclaimed per 40 CFR 261.2(c)(3). If these wastes are not reclaimed, they would be subject to all relevant generator, transporter, storage, treatment and/or disposal standards.

Iron Furnace Slag and Furnace Dross

The smelting furnace produces a slag (i.e., by-product) and a lead dross by-product which will be either reused or reclaimed in the furnace or sold to a reclaimer. As discussed above, smelting wastes would not be classified as K069, but may be hazardous by characteristic. Even if characteristic, the slag or dross would not be regulated because characteristic by-products that are reclaimed are not solid wastes per 40 CFR 261.2(c)(3), provided they are not speculatively accumulated.

Molten Lead

The molten lead produced from smelting in the furnace is further refined in the refining kettles. The lead would be classified as a reclaimed product. Reclaimed metals that only have to be refined to be usable are considered products, not solid wastes (50 FR 634, January 4, 1985). Thus, no RCRA regulation applies.

Refining Kettle Dust

The dust captured by the air pollution control equipment associated with the refining kettles would be classified as a sludge per 40 CFR 260.10. If it is collected in the same pollution control equipment as K069, it would be classified as K069 per the mixture rule (40 CFR 261.3(b)(2)). If the kettle dust is segregated from K069, it would be hazardous only if characteristic (e.g. EP toxic for lead). The dust will be stored in a silo prior to charging to the smelting furnace for lead reclamation. Characteristic sludges being reclaimed are not defined as solid wastes under 40 CFR 261.2(c)(3) and are not

regulated, unless they are speculatively accumulated. If the dust is comingled with the K069 wastes, however, it is subject to generator standards (i.e., may only be accumulated for 90 days prior to reclamation without a permit). If the 90 day limit is exceeded, a storage permit would be needed.

Refining Kettle Dross

The refining kettles will produce a lead dross or by-product which will either be reused in the smelting furnace or sold to another reclaimer. Since the dross is not derived from K069 and doesn't meet a listing, it would be hazardous only if it exhibits a characteristic. Characteristic by-products are not solid wastes and are not regulated when reclaimed per 40 CFR 261.2(c)(3), unless speculatively accumulated.

Lead Ingots

The products of the refining kettles will be lead ingots which will be sold. The ingots are reclaimed products which are not regulated per 40 CFR 261.3(c)(2)(i).

Wastewater and Wastewater Treatment Sludge

Wastewater from the MA-41 battery component separation and rinsing process may be characteristically hazardous. The wastewater will be filtered and reused along with fresh make-up water. Wastewater treatment units as defined in 40 CFR 260.10, are not regulated per 40 CFR 264.1(g)(6) and 265.1(c)(10). If hazardous, any sludge removed from filtration may be subject to generator, transporter, storage, treatment and/or disposal standards. However, if the wastewater treatment sludge exhibits a characteristic and is reclaimed for metals, it is not regulated because characteristic sludges are not solid wastes when reclaimed (see 40 CFR 261.2(c)(3)).

Dust from Vacuum System

Metal containing dust in the work areas of the facility will be collected by a central vacuum system and air pollution control devices. This dust is a sludge which will be reclaimed in the furnace. If the system collects K069 dust from the lead smelter, the dust would be classified as K069 by virtue of the "mixture rule" under 40 CFR 261.3(b)(2). If, however, this dust is kept segregated from the K069, it would only be hazardous if it exhibits a characteristic. In the latter case, it would not be a solid waste if reclaimed under 40 CFR 261.2(c)(3).

Ammonium Sulfate and Associated Wastes

The battery acid and sulfates from desulfurization of lead sulfates will be chemically treated to produce ammonium sulfate. The ammonium sulfate will be sold commercially as a fertilizer. The ammonium sulfate is a hazardous waste-derived product used in a manner constituting disposal. However, waste-derived commercial fertilizers produced for the general public's use are not presently regulated per 40 CFR 266.23(a) provided they meet the conditions of section 266.20(b) (i.e., any applicable treatment standards under 40 CFR Part 268). If any waste is produced from this fertilizer manufacturing process, it must be evaluated to determine whether it exhibits a characteristic and, if so, may be subject to regulation.

Summary

Based on the information provided by Industrial Safety and Health Consultants on the proposed lead-acid battery reclamation process and associated fertilizer manufacturing activity, if the proposed facility can avoid storing the batteries and avoid accumulation of waste materials in tanks or containers for more than 90 days, only the generator standards in 40 CFR 262 and the 3010 notification might apply. For some wastes exhibiting hazardous characteristics, such as scrap battery pieces, smelter dross and slag, and refining kettle dust/sludge and drosses, no generator standards would apply if these materials are reclaimed on site or even shipped off-site for beneficial reclamation. These characteristic by-products, scrap metals, and sludges are not solid wastes subject to regulation when reclaimed per 40 CFR 261.2(c) (3).

It is important to reiterate that the final determination to whether a RCRA permit is required is both facility specific and the responsibility of either the EPA Regional Office or the authorized State.

If you need additional information or have any questions about any of the above information, please contact me at (202) 475-9715.

Sincerely,

Stephan L. Cochran
Acting Chief, Review Section

FaxBack # 11383

Record Detail

Full Document:	
Title:	CLARIFICATION OF THE RECYCLED USED OIL MANAGEMENT STANDARDS
Date:	10/07/93
To:	Hunter
From:	Denit
Organization of Recipient:	Arvin Industries, Inc.
Description:	scrap metal that meets no free-flowing oil standard is not subject to used oil transporter standards; coolant recycling and oil/water separation are not used oil processing when they are incidental to the normal manufacturing process
Part(s) & Subpart(s):	261 Subpart A; 279 Subpart A; 279 Subpart E; 279 Subpart F
Section(s):	261.6(a)(4); 279.1; 279.40; 279.50
Statutory Citation(s):	NA
Topic(s):	Hazardous Waste, Hazardous Waste Recycling, Transporters, Used Oil
Approximate Number of Hardcopy Pages:	2
Fax-On-Demand Code:	11783
EPA Document Number:	NA
RPC Number:	10/07/93 - 6
RPPC Number (if applicable):	9592.1993(06)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11783
9592.1993(06)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

October 7, 1993

Ms. Mary Anne Hunter
Environmental Coordinator
AVM, Gabriel, Maremont Exhaust
Arvin Industries, Inc.
1531 13th Street
Columbus, Indiana 47201

Dear Ms. Hunter:

Thank you for your letter dated November 3, 1992, requesting clarification of the September 10, 1992, Recycled Used Oil Management Standards. Specifically, you asked for clarification of the used oil processing standards as they apply to coolant recycling and oil/water separation activities and for clarification of used oil transporter standards as they apply to transport of metal scrap containing small quantities of oil.

Regarding the applicability of the processor standards, EPA is aware that the term "processor," as defined in the used oil management standards, can be broadly construed to include a number of basic on-site recycling activities that the Agency did not necessarily intend to cover (e.g., coolant recycling and oil/water separation).

EPA intended to include as processing only those used oil filtering and/or separation activities whose primary purpose is to produce used oil or to make it more amenable for the production of used oil derived products. Under this interpretation, neither the coolant recycling or the oil/water separation activities referred to in your letter would be considered used oil processing because, in these cases, the filtering and separation activities are incidental or ancillary to the normal manufacturing process, i.e., used oil processing is not their primary purpose. The primary purpose of the oil/water separation activity described in your letter, for example, would be to remove used oil from wastewater to make the wastewater acceptable for discharge.

Although EPA believes that the current definition of "processor" can be properly read not to encompass oil/water separation or coolant recycling performed on-site at an industrial facility, we are, nonetheless, currently considering amendments to the used oil regulations to clarify the Agency's intent to exclude activities such as these from the requirements for used oil processors.

You also asked for clarification regarding the applicability of the used oil transporter requirements to metal scrap haulers.

Generally, under section 279.10(c), materials containing or otherwise contaminated with used oil are regulated as used oil until the used oil is removed from the material. However, as clarified in the May 23, 1993, Technical Amendments and Corrections to the Final Rule, materials containing or otherwise contaminated with used oil, from which the used oil has been properly drained or removed to the extent possible such that no visible signs of free-flowing oil remain in or on the material are not considered used oil unless they are to be burned for energy recovery (58 FR 26420). Therefore, if the scrap referred to in your letter meets the "no free flowing oil" standard described in the May 23, 1993, technical correction notice at 58 FR 26420, it would not be considered used oil subject to the transporter standards. However, the used oil removed from the metal would be covered under the used oil management standards.

I hope that this addresses your concerns. If you have other questions regarding the used oil management standards, contact Eydie Pines at (202) 260-3509.

Sincerely,
Jeffery D. Denit
Acting Director
Office of Solid Waste

Record Detail

Full Document:	
Title:	REGULATORY STATUS OF SOLDER DRIPPINGS GENERATED DURING RADIATOR REPAIR OPERATIONS
Date:	04/29/93
To:	Tighe
From:	Lowrance
Organization of Recipient:	Tighe, McInroy and Corbett
Description:	solder drippings generated during radiator repair operations qualify for scrap metal exclusion when recycled
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c)(6); 261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	2
Fax-On-Demand Code:	11740
EPA Document Number:	NA
RPC Number:	04/29/93 - 4
RPPC Number (if applicable):	9441.1993(07)
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

Faxback 11740

9441.1993(07)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

April 29, 1993

Mr. Kevin Tighe
Tighe, McInroy & Corbett
1750 Pennsylvania Avenue
Suite 1201
Washington, D.C. 20006

Dear Mr. Tighe,

Thank you for your letter dated February 10, 1993, written on behalf of the National Automotive Radiator Service Association (NARSA). In your letter you requested guidance concerning the regulatory status under the Resource Conservation and Recovery Act (RCRA) of solder drippings generated during radiator repair operations.

Based on the information provided in your letter, the solder drippings you described would meet the definition of scrap metal under 40 CFR 261.1(c)(6) [" . . . bits and pieces of metal parts ... which when worn or superfluous can be recycled."] Secondary materials that meet the definition of scrap metal, while remaining solid and hazardous wastes, are excluded from federal RCRA regulations if they are recycled [40 CFR 261.6(a)(3)(iv)].

We would encourage radiator repair shops to recycle their solder drippings wherever possible, and to engage in "good housekeeping practices" with respect to the collection and storage of the solder drippings prior to recycling (see footnote 1). Good housekeeping would include practices that prevent the release of lead into the environment, such as regular floor sweepings in areas where solder falls, adequate storage of the solder drippings destined for recycling, and the segregation of solder drippings from other wastes and debris not intended for recycling. Adherence to these practices may also provide indicia to the regulatory agency implementing the RCRA program that the solder drippings are in fact going to be recycled.

Finally, please note that under Section 3006 of RCRA (42 U.S.C. Section 6926) individual states can be authorized to administer and enforce their own hazardous waste programs in lieu of the federal program. When states are not authorized to administer their own program, the appropriate EPA Region administers the program and is the appropriate contact for any case-specific determinations. Please also note that under Section 3009 of RCRA (42 U.S.C. Section 6926) states retain authority to promulgate regulatory requirements that are more stringent than

federal regulatory requirements. Therefore, I would encourage those persons generating and recycling solder drippings to make sure they are familiar with any state requirements applicable to this type of material.

If you have any additional comments or questions, please feel free to contact me directly, or call Ross Elliott of my staff at 202/260-8551. Thank you for your interest in hazardous waste recycling.

Sincerely,
Sylvia K. Lowrance, Director
Office of Solid Waste

1 If the solder drippings are not going to be recycled, the scrap metal exemption does not apply.

Record Detail

Full Document:	
Title:	REGULATORY STATUS OF LEAD SHOT
Date:	03/17/97
To:	Campbell
From:	Hannapel
Organization of Recipient:	EPA
Description:	mixture of spent lead shot and gunpowder may be ignitable; regulatory status of lead shot; discharge of ammunition or lead shot is in the normal and expected use pattern of the product and does not constitute hazardous waste disposal; ammunition, rounds, expended cartridges, and unexploded bullets that fall to the ground are not discarded (SEE ALSO: 62 FR 6622; 2/12/97); lead shot may be considered scrap metal, not spent material, and exempt from regulation when recycled; exemption extends only to the lead shot portion of the waste
Part(s) & Subpart(s):	261 Subpart A; 261 Subpart C
Section(s):	261.2; 261.6(a)(3); 261.21
Statutory Citation(s):	NA
Topic(s):	Characteristic Wastes, Disposal, Hazardous Waste, Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	5
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NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

March 17, 1997

Mr. Duncan Campbell
Environmental Protection Agency, Region V
RCRA Enforcement
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Dear Mr. Campbell:

Enclosed please find a memorandum on the regulatory status on lead shot, which includes a general discussion on the regulatory status of lead shot as scrap metal. I hope that this information is sufficient to address your specific concerns as they relate to the pile of lead shot at the Saxon Metals facility.

If you have any questions or would like to discuss this matter further, please contact me at (703) 308-8826.

Sincerely,

Jeffery S. Hannapel
Office of Solid Waste

Enclosure

To: Duncan Campbell, EPA Region V

From: Jeff Hannapel, EPA Office of Solid Waste

Date: March 13, 1997

Re: Regulatory Status of Lead Shot

Based on our conversations, it is my understanding that Saxon Metals received for recycling a shipment of approximately 30,000 pounds of lead shot from a commercial indoor shooting range. Smokeless gun powder is, presumably, commingled with the lead shot. The mixture appears to exhibit the ignitability characteristic of hazardous waste (as evidenced by the incident in which the material ignited when Saxon Metals was attempting to load it into the furnace with a front-end loader). You have asked our office to provide you with guidance on the regulatory status of the lead shot portion of the mixture, specifically whether it is considered a spent material or scrap metal.

The Agency has taken the position that the discharge of ammunition or lead shot does not constitute hazardous waste disposal because the Agency does not consider the rounds from the weapons to be "discarded." As you know, discard is a necessary criterion to be met before a material can be considered a solid waste and subsequently a hazardous waste. 40 CFR §261.2(a). The Agency's interpretation regarding discard is based on the fact that shooting is in the normal and expected use pattern of the manufactured product, *i.e.,* the lead shot. Enclosed for your information is a September 6, 1988 letter from EPA to IDEM on this particular point.

In the federal regulations, the term, "scrap metal," is defined as "bits and pieces of metal parts *(e.g.,* bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering *(e.g.,* radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled." 40 C.F.R. §261.1. In the *Federal Register* preamble for the final regulations on the definition of solid waste, EPA indicated that "scrap metal is defined as products made of metal that become worn out (or are off-specification) and are recycled to recover their metal content, or metal pieces that are generated from machine operations *(i.e.,* turnings, stampings, etc.) which are recycled to recover metal." 50 Fed. Reg. 614, 624 (1985). The lead shot portion of the Saxon Metals pile would be considered scrap metal pursuant to the regulatory definition of scrap metal.

EPA provided further clarification on the regulatory status of scrap metal in the *Federal Register* preamble to the definition of solid waste final regulations:

> [a]t proposal, scrap metal that was generated as a result of use by consumers (copper wire scrap, for example) was defined as a spent material. (This type of scrap is usually referred to as "obsolete scrap.") Scrap from metal processing, on the other hand (such as turnings from machining operations) was defined as a by-product. (It is usually called "prompt scrap.") Yet the scrap metal in both cases is physically identical *(i.e.,* the composition and hazard of both by-product and spent scrap is essentially the same) and, when recycled is recycled in the same way - by being utilized for metal recovery (generally in a secondary smelting operation).
>
> In light of the physical similarity and identical means of recycling of prompt scrap and obsolete scrap, the Agency has determined that all scrap metal should be classified the same way for regulatory purposes. Rather than squeeze scrap metal into either the spent material or by-product category, we have placed it in its own category.

50 Fed. Reg. at 624. Based on these regulatory passages, the lead shot portion of the pile would be considered scrap metal, and not a spent material. The lead shot is a product that is made of metal that can be recycled to recover metal content. Furthermore, the lead shot has not been "discarded" by virtue of its discharge at the shooting range, because the discharge is within the normal and expected use pattern of the manufactured product. Accordingly, lead shot would be considered scrap metal for regulatory purposes. Scrap metal is a solid waste, but it is *exempt* from the regulatory requirements of Subtitle C when it is recycled. 40 C.F.R. §261.6(a)(3)(ii). As part of the Phase IV land disposal restrictions supplemental rulemaking (which was proposed January 25, 1996 an is expected to be finalized in April 1997), processed scrap metal and two categories of unprocessed scrap metal that is being recycled would be *excluded* from RCRA jurisdiction.

Please note that this discussion of the regulatory status is limited to the lead shot portion of the pile as you requested. To the extent that the entire pile exhibits the ignitability or reactive characteristic of hazardous waste, the mixture of materials would be considered hazardous waste and not scrap metal. The scrap metal designation for the lead shot would be applicable only to the extent that the lead shot could be segregated from the other materials in the pile.

I hope that this guidance on the regulatory status of lead shot recovered from shooting ranges provides you with the clarification that you needed. If you have any questions or would like to discuss this matter further, please contact me.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460
SEP 6 1988

Ms. Jane Magee
Assistant Commissioner for

Solid and Hazardous Waste Management

Indiana Dept. of Environmental Management
P.O. Box 6015
Indianapolis, Indiana 46206-6015

Dear Jane:

This is in response to your letter on the applicability of Resource Conservation and Recovery Act (RCRA) regulations to shooting ranges. In your letter you indicated that

the Indiana University in Bloomington has received a preliminary notice of intent to sue under RCRA, alleging that the university shooting ranges are hazardous waste landfills, fully subject to the requirement for an operating permit and all applicable facility standards.

The discharge of ball and sport ammunition at shooting ranges does not, in our opinion, constitute hazardous waste disposal. This is because we do not consider the rounds to be discarded, which is a necessary criterion to be met before a material can be considered a solid waste and, subsequently, a hazardous waste (see 40 CFR 261.3(a)). Rather, the shooting of bullets is within the normal and expected use pattern of the manufactured product. This interpretation extends to the expended cartridges and unexploded bullets that fall to the ground during the shooting exercise. The situation, in our mind, is analogous to the use of pesticides whereby the expected, normal use of a pesticide may result in some discharge to the soils. This is a discharge incident to normal product use and is not considered a hazardous or solid waste activity falling under the jurisdiction of RCRA.

If you have any questions regarding our interpretation or would like to discuss the issue further, please call Elizabeth Cotsworth (202) 382-3132 or Chet Oszman (202) 382-4499.

Sincerely,

Sylvia K. Lowrance
Director

Office of Solid Waste

Cc: Elizabeth Cotsworth
Matt Hale, OSW
Fred Chaziania, OGc

Karl Bremer, Region 5

Chet Oszman, OSW

Record Detail

Full Document:	This document is currently only available by calling the RCRA, Superfund & EPCRA Hotline at (800) 424-9346
Title:	NA
Date:	08/08/97
To:	Isaacs
From:	Cotsworth
Organization of Recipient:	Electronic Industries Association
Description:	whole circuit boards containing minimal quantities of mercury and batteries that are protectively packaged to minimize dispersion of metal constituents would qualify for the scrap metal exemption in 261.6(a)(3); shredded circuit boards must be free of mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries to qualify for the exclusion from the definition of solid waste in 261.4(a)(14)
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.4(a)(14); 261.6(a)(3)
Statutory Citation(s):	
Topic(s):	Exclusions (RCRA), Hazardous Waste Recycling
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federal register

Monday
May 12, 1997

✱ REGULATIONS RE: CIRCUIT BOARDS
62 FR 26011

Part II

Environmental Protection Agency

40 CFR Part 148, et al.
Land Disposal Restrictions Phase IV: Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions; Final Rule
Second Supplemental Proposal on Treatment Standards for Metal Wastes and Mineral Processing Wastes, Mineral Processing and Bevill Exclusion Issues, and the Use of Hazardous Waste as Fill; Proposed Rule

VIII. Changes to Definition of Solid Waste to Exclude Processed Scrap Metal and Shredded Circuit Boards From RCRA Jurisdiction

Summary: As proposed on January 25, 1995 (FR 61 2338), EPA is today amending the definition of solid waste to exclude from RCRA jurisdiction two types of materials: processed scrap metal and containerized shredded circuit boards.

A. Processed Scrap Metal

1. Summary of Proposal

The Agency proposed the exclusion of processed scrap metal and shredded circuit boards being recycled from the Definition of Solid Waste in the January 25, 1996 proposed Phase IV LDR supplemental rulemaking. Currently, scrap metal being reclaimed is a solid waste, but completely exempt from RCRA Subtitle C regulations. The proposal would have amended the definition of solid waste to exclude processed scrap metal and containerized shredded circuit boards that are being recycled from RCRA jurisdiction. In the proposal, the Agency did not propose to make changes to the current definition of scrap metal: "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 proposal defined processed scrap metal as "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." The Agency believes that processed scrap metal being recycled is distinct from other secondary materials defined as wastes when recycled 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, and is therefore sufficiently product-like that maintaining RCRA regulatory jurisdiction over this material is not necessary. A summary of the proposed exclusion from the definition of solid waste for shredded circuit boards being recycled follows the discussion of the exclusion from the definition of solid waste for processed scrap metal being recycled.

2. Modifications to the Proposal

The Agency received approximately twenty-five comments concerning the proposed scrap metal and shredded circuit board exclusions. The comments were generally supportive of the exclusions. A background document, the major comments received, and Agency responses on the proposed processed scrap metal exclusion can be found in the docket for this rulemaking. Comments on the shredded circuit board exclusion can also be found in this background document.

In response to comment on the proposed exclusion to the definition of solid waste for processed scrap metal being recycled, the Agency has made several modifications to the exclusion in the final rule. First, the Agency has expanded the exclusion to cover unprocessed home and unprocessed prompt scrap metal being recycled. Home scrap is scrap metal generated by steel mills, foundries, and refineries such as turnings, cuttings, punchings, and borings. Prompt scrap, also known as industrial or new scrap metal, is generated by the metal working/fabrication industries and includes such scrap metal as turnings, cuttings, punchings, and borings. These categories of scrap metal do not fit the definition of processed scrap metal found in the proposal because they often do not require a processing step before being sent for recycling. The Agency evaluated unprocessed home scrap and prompt scrap metal and found that these categories of scrap metal are substantially similar to processed scrap metal 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. Based on this analysis, the Agency has expanded scope of the exclusion to include both unprocessed home and unprocessed prompt scrap metal. In the final rule, the term "excluded scrap metal" will be used to reflect this decision. Commenters also suggested the Agency evaluate obsolete scrap metal (scrap which is composed of worn out metal or a metal product that has outlived it original use, such as automobile hulks, railroad cars, aluminum beverage cans, steel beams from torn down buildings, and household appliances) using the same factors. The Agency has not found sufficient data to fully evaluate unprocessed obsolete scrap metal. Therefore, in today's final rule the Agency is not expanding the scope of the exclusion from the definition of solid waste to include obsolete scrap metal. Providing an exclusion from the definition of solid waste for obsolete scrap metal at this time would be premature and is better addressed in the Definition of Solid Waste rulemaking, due to be proposed in the near future.

Second, the Agency clarifies that the exclusion for processed scrap metal being recycled applies to scrap metal that has undergone a processing step (as defined in the preamble to the proposed rule) regardless of who does the processing. In other words, a processing step may be performed by the generator, an intermediate scrap handler (e.g. broker, scrap processor), or a scrap recycler. Once the scrap metal has undergone a processing step, it may qualify for today's exclusion.

Third, the Agency has added chopping, crushing, flattening, cutting and sorting, processes typically used in the processing of scrap metal for recycling, to the definition of processed scrap metal in today's final rule. In today's final rule, the definition of processing reads: "manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Additionally, to avoid confusion, the definition of processed scrap metal has been reworded to clarify the status of agglomerated fines, drosses and other related materials. Therefore, in today's final rule, the category of processed scrap metal now includes but is not limited to scrap metal which has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted), and, fines, drosses and related materials which have been agglomerated." Note that circuit boards that are shredded and being sent for recycling are covered under the exclusion from the definition of solid waste for shredded circuit boards being recycled (261.4(a)(13)) see discussion following) and are not covered under the definition of excluded scrap metal.

B. Shredded Circuit Boards

1. The Proposal

In the proposed rule, EPA proposed to exclude shredded circuit boards being reclaimed from the definition of solid waste in order to facilitate their recovery. 61 F.R. 2339, 2361. The proposed exclusion was conditioned on the storage of the shredded circuit boards in containers prior to recovery that would be adequate to prevent a release of the boards to the environment. This condition was

specified as a performance standard rather than a design standard to allow the handler maximum flexibility in selecting the method of containment. Today, EPA is finalizing this exclusion as proposed with an additional limitation that shredded circuit boards excluded from RCRA jurisdiction be free of mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries.

2. Exclusion for Shredded Circuit Boards Conditioned on Containerized Storage Prior to Recovery

EPA explained in the proposal that shredded circuit boards merit exclusion from RCRA regulation in order to facilitate their recovery when they are properly stored in containers to prevent their release to the environment. As presented in the proposal, the necessity for the proposed exclusion for shredded circuit boards is that the process of shredding the circuit boards causes the boards to lose the scrap metal exemption (see 40 CFR § 261.6(a)(3)(ii)) that currently applies to used whole circuit boards. This scrap metal exemption allows used whole circuit boards being recycled to be shipped in commerce without being subject to RCRA regulation including generator manifesting and export requirements. The process of shredding the boards produces small fines from the whole board which are dispersible and do not meet the RCRA regulatory definition of scrap metal. The application of RCRA regulatory provisions to shredded boards may present serious disincentives to their recovery. As explained in the proposal, generator manifesting and export requirements may result in significant delays in shipments of shredded boards to recovery operations such as smelters. Many intermediate precious metal reclaimers, e.g. shredders, operate on a short cash flow and depend on prompt payment for shipments of shredded circuit boards in order to pay the generators of the used circuit boards for supplying them to the intermediate reclaimers.

For the following reasons, EPA believes that shredded circuit boards destined for reclamation when properly containerized and free of mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries are an appropriate secondary material to be excluded from RCRA regulation. As discussed in the proposal, shredding is beneficial to the recovery process. Shredding improves the recovery of the boards by improving handling of shredded boards through increasing the bulk density of the boards in the container during shipment. Shredding also improves the assaying of the shipment for base metal and precious metal content by homogenizing the load thus assuring a representative sample is taken for the assay. Shredding also destroys proprietary information from generators or manufacturers of the boards thus better assuring confidentiality to the generator or manufacturer when making a decision to recycle. Some generators may be concerned about proprietary information contained in used whole circuit boards being transferred to competitors once the boards are out of the generator's control.

Second, shredded boards have qualities which are similar to primary materials such as virgin mineral concentrates that are processed and refined for base metal and precious metal values. These qualities satisfy the criteria EPA considers when evaluating whether a partially-reclaimed solid waste is commodity-like and is not part of the waste management problem and thus is appropriate to exclude from RCRA subtitle C jurisdiction through issuance of a variance. EPA believes that these criteria are relevant in determining whether a general exclusion is justified. See 40 CFR 261.30(c)& 261.31(c). These criteria are: (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 and (6) other relevant factors (such as the presence of cyanide or other foreign materials).

Regarding the first criterion, shredded circuit boards have been processed through shredders, hammer mills and similar devices to decrease their size. Value is added to the boards, as indicated above, because the boards are easier to handle, assay and ship without concerns of generator confidentiality that might exist if the boards were shipped to the smelters as whole boards. Further processing for the shredded boards includes both smelting and refining to extract base metals such as copper and precious metals such as gold, silver and platinum group metals. And while a substantial amount of further processing remains, EPA believes that shredded circuit boards can be thought of as secondary feedstocks similar to primary ore concentrates that have undergone beneficiation and are destined for primary mineral processing and refining.

Regarding the second criterion of the value of the material after it has been reclaimed, shredded circuit boards generally have positive economic value (i.e., the smelter pays the shredder for the assayed base and precious metal value of the shipment). The typical price range for shredded circuit boards is between a negative $0.25 per lb. and $5 per lb. One recycling company reported an annual average price of shredded circuit boards of $1.50 per pound which is greater than the current market price for refined copper metal.

Regarding the third criterion of how the partially reclaimed material compares to the analogous raw material, recyclers have indicated that shredded circuit boards typically have assays of that average 10 percent copper, between one-half and one-third that of primary copper concentrates. Shredded circuit board copper assays reported in literature evaluated in completion of this rule ranged between 11 percent and 18 percent copper. Shredded circuit boards also frequently contain precious metal values such as gold, silver or platinum that enhance the economic value of the material. Moreover, the reported recycling efficiency for copper, gold, silver and platinum exceeds 90 percent for this type of material.

Although toxic metal content for primary copper concentrates is variable depending on the ore body it comes from, reported assays for circuit boards are comparable in lead and lower in arsenic content than reported primary copper concentrate assays. Although shredded circuit boards are comparatively dispersible in comparison to primary copper concentrates, the conditional requirement for the exclusion stipulates that the shredded circuit boards must be stored in containers sufficient to prevent a release to the environment prior to recovery reduces any greater likelihood of release from shredded boards in comparison to primary copper concentrates.

The fourth criterion EPA uses to evaluate partially-reclaimed secondary materials is the extent to which an end market is guaranteed for the material. Continuous demand from primary smelters for base metals and precious metals from shredded circuit boards should result from the positive economic value of the boards, the relative ease of handling and assaying of the boards and the diminishing quantities of primary copper ore concentrates. According to the Bureau of Mines Mineral Commodity Summaries 1994, reported and apparent

consumption for copper, silver and platinum group metals has either remained constant or increased between 1989 and 1993. Reported consumption of gold decreased slightly between 1989 and 1993 from 115 metric tons and 100 metric tons. Secondary gold production decreased slightly over the same period from 158 metric tons to 130 metric tons. The price of gold declined over the same period from $382 per troy ounce to $355 per troy ounce. By 1996, the price of gold has increased to over $380 per troy ounce.

The fifth criterion EPA uses to evaluate partially-reclaimed materials is the extent to which the material is managed to minimize loss. The proposed exclusion is conditioned on the proper storage of shredded circuit boards in containers prior to recovery. As mentioned in the proposal, the shredded boards are usually stored in super sacks (sacks that are reinforced woven resin and designed to accommodate bulk shipments), gaylord containers (also known as tri-wall boxes composed of three layers of cardboard with two layers of corrugation) and 55 gallon drums. Open bulk shipments of board by rail, truck or barge are not within the scope of this exclusion. In addition to the storage requirement, the economic value of the boards also provides an incentive for handlers to prevent releases to the environment. At an average market value of $1.50 per pound for one recycler, the incentive to prevent releases is substantial. The Agency notes that containerization in and of itself was not the only reason the Agency concluded that shredded circuit boards should be excluded from the definition of solid waste. The other five factors supported this determination as well.

Finally, EPA considers other relevant factors when evaluating the exclusion of partially-reclaimed materials from RCRA jurisdiction through the variance. In the context of shredded circuit boards, other relevant factors include: (1) The presence of both materials possibly attached to printed circuit boards that are ordinarily outside of the definition of scrap metal such as mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries, and (2) the frequency of foreign materials mixed with but not part of the circuit board itself. EPA's concern about these materials is discussed below.

3. Limitation on Mercury Switches, Mercury Relays, Nickel-Cadmium Batteries and Lithium Batteries

Printed circuit boards may contain or be incorporated into electronic products which contain mercury switches, mercury relays, nickel-cadmium batteries, and lithium batteries. EPA is concerned about the potential environmental impact of these materials that are associated with printed circuit board production and management after the boards are spent. Ordinarily, commercial printed circuit board recyclers, both intermediate processors (e.g. shredders) and smelters, do not want mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries in shipments of shredded boards sent from the intermediate processor to the smelter. However, because these items may be very small, they may, on occasion, escape visual inspection and become shredded along with printed circuit boards. When this happens, EPA is concerned about the potential release of mercury or cadmium to the environment. For this reason, EPA is limiting the scope of the exclusion for shredded boards to shipments that are free of mercury switches, mercury relays, nickel-cadmium batteries or lithium batteries. Free of these materials means that mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries are not or have not been part of the batch of circuit boards shredded to add value. In addition, EPA reiterates that in enforcement actions that it is the respondent in the action who bears the burden of proof in documenting that a material for which an exclusion is claimed from the definition of solid waste meets the appropriate regulatory definition or exclusion. 40 CFR 261.2(f). Shredded circuit boards that are not free of mercury switches, mercury relays, nickel-cadmium batteries, and lithium batteries when reclaimed are solid wastes. This is so because these used shredded circuit boards are spent materials. Spent materials being reclaimed are solid wastes that, when they exhibit a characteristic or are listed, are also hazardous wastes. 40 CFR 261.1(b)(1), 261.2(c)(3). As stated in the proposal, EPA established in 1992 that whole used circuit boards could be considered scrap metal. The whole used circuit boards are therefore exempt from RCRA regulation. See 40 CFR 261.6(a)(3)(ii) stating scrap metal being recycled is exempt from RCRA regulation. (Please note that whole used circuit boards which contain mercury switches, mercury relays, nickel-cadmium batteries, or lithium batteries also do not meet the definition of scrap metal because mercury (being a liquid metal) and batteries are not within the scope of the definition of scrap metal. See 50 F.R. 614, 624 (January 4, 1985).) As stated in the proposal shredded circuit boards do not meet the definition of scrap metal because the shredded material contains fines which are too small to qualify as scrap metal. Shredded circuit boards that are not free of mercury switches, mercury relays, nickel-cadmium batteries, and lithium batteries would be subject to applicable parts of RCRA regulation, 40 CFR Parts 260 through 266, Part 268, Part 270, Part 273 and Part 124. Shredded circuit boards with economically recoverable quantities of precious metals are still eligible for conditional exemption from regulation under 40 CFR Part 266 Subpart F. This provision allows recyclable materials containing an economically recoverable amount of precious metals to be exempt from many RCRA regulatory provisions. However, these materials are still subject to manifesting, export and speculative accumulation requirements. 40 CFR 266.70.

4. Clarification of Regulatory Status of Secondary Materials Associated With the Generation or Management of Circuit Boards

Several commenters requested clarification in today's rule about the current regulatory status of secondary materials associated with the generation or management of printed circuit boards. These materials include: spent solder baths (pot dumps), sweeps, baghouse dust, and solder dross. These commenters also requested exclusion of these materials from RCRA jurisdiction in today's rule.

Spent solder baths, also known as pot dumps, are solidified pieces of tin-lead solder baths used in the production of printed circuit boards. Prior to 1993, EPA had classified spent solder baths as spent materials, which, absent the scrap metal designation, would be fully regulated under RCRA hazardous waste regulation. In 1993, EPA issued a letter to the Lead Industries Association stating that spent solder baths meet the definition of scrap metal and are therefore exempt from RCRA regulation under the regulatory exemption for scrap metal being recycled. This interpretation continues to be the Agency view.

Sweeps refer alternatively to a powdered material that is a residue of thermal recovery of precious metal-bearing secondary material (often ash that is crushed into particulate form in a ball mill or similar device) or particulate material that is collected from firms handling precious metals such as jewelers and metal finishers. Sweeps have been previously classified

by EPA as a by-product.[2] As such, when sent for reclamation, sweeps are not solid waste and are excluded from RCRA jurisdiction regulation when considered hazardous solely by exhibiting a characteristic. Characteristic by-products are not solid wastes when reclaimed. 40 CFR 261.2(c)(3). In contrast, when sweeps are derived from source material that meets the description of a listed hazardous waste, the sweeps are solid wastes that are also hazardous wastes and are regulated under the appropriate RCRA regulation provisions. 40 CFR 261.2(c)(3). For example, often combustible material such as a rag, filter or paper is used to clean up a secondary material such as a spent solvent that may: (1) contain precious metals and (2) meets one of the F001 through F005 listing descriptions for solvents. The rag, filter or paper will be burned to an ash that it homogenized in order to assay its precious metal content. The ash when crushed is turned into a sweep. The sweep carries the F-listed hazardous waste code that was associated with the original source material (i.e., solvent). Listed by-products, in contrast to characteristic by-products, are solid and hazardous wastes when reclaimed.

EPA has classified baghouse dust from precious metal recovery furnaces as a sludge.[3] As with the by-product classification for sweeps, baghouse dust is not a solid and hazardous waste when it would be considered hazardous only for exhibiting a characteristic such as toxicity. However, if the source material to the furnace contained a listed hazardous waste, then the baghouse dust would be considered a solid and hazardous waste due to its classification as a listed sludge being reclaimed. Also as with the sweeps, even if the baghouse dust is a listed sludge, it may still be conditionally exempt from RCRA regulation under 40 CFR Part 266 Subpart F if it contains economically recoverable levels of precious metals.

Finally, EPA currently classifies solder dross as a characteristic by-product when reclaimed. As such, this material is already excluded from the definition of solid waste and not regulated under the RCRA regulations. Therefore, including solder dross in today's final rule would be duplicative.

[2] August 26, 1992 memorandum from Sylvia K. Lowrance, Director, U.S.E.P.A., Office of Solid Waste to Waste Management Division Directors U.S.E.P.A., Regions I–X on the Regulatory Status of Printed Circuit Boards.

[3] *Ibid.*

IX. State Authority

A. Applicability of Rules in Authorized States

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

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

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

Today's treatment standards for wood preserving wastes are being promulgated pursuant to sections 3004 (d) through (k), and 3004(m), of RCRA (42 U.S.C. 6924 (d) through (k), and 6924(m)). Therefore, the Agency is adding today's rule to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA. States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble. Table 2 in 40 CFR 271.1(j) is also modified to indicate that this rule is a self-implementing provision of HSWA.

B. Abbreviated Authorization Procedures

In the August 22, 1995, LDR Phase IV proposed rule, EPA proposed a set of streamlined authorization procedures that would apply to new rules that were minor or routine in nature. This procedure was designed to expedite the authorization process by reducing the scope of a State's submittal, for authorization, to a State certification and copies of applicable regulations and statutes. EPA would then conduct a short review of the State's request, primarily consisting of a completeness check (see 60 FR 43686 for a full description of the proposed procedures). In the HWIR-Media proposed rule, EPA proposed another set of abbreviated authorization procedures for more significant rulemakings, called Category 2 (see 61 FR 18780, April 29, 1996). In this latter proposal, EPA designated the procedures outlined in the Phase IV proposal as Category 1. In that proposal, EPA also presented an expanded discussion on the need for and the intent of the streamlined procedures. EPA also proposed a set of modified Category 1 procedures for the authorization of a proposed rule for mineral processing wastes on January 25, 1996 (see 62 FR 2338).

Although EPA is firmly committed to streamlining the RCRA State authorization procedures, the Agency has decided not to finalize the proposed Category 1 authorization procedures in today's notice. EPA believes that public comments from the August 22, 1995, and January 25, 1996, proposals and comments submitted for the recent HWIR-contaminated media proposal should all be considered before finalizing new procedures for authorization. This full consideration will enable EPA to make the best decision regarding how the authorization process should work. EPA intends to address all significant public comments for all three notices and finalize streamlined authorization procedures when the HWIR-Media rule is promulgated.

C. Effect on State Authorization

Because today's Phase IV LDR rule is being promulgated under HSWA authority, those sections of today's rule that expand the coverage of the LDR program (e.g., to newly listed wood preserving wastes) would be implemented by EPA on the effective date of today's rule in authorized States until their programs are modified to adopt these rules and the modification is approved by EPA. These new treatment standards also result in a more stringent Federal program than before. Therefore States are required to adopt them in accordance with the requirements below.

Because today's rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of

federal register

Tuesday
May 26, 1998

* CLARIFICATION OF THE RCRA EXCLUSION OF SHREDDED CIRCUIT BOARDS

DISCUSSION ON REGULATORY STATUS OF WHOLE CIRCUIT BOARDS

63 FR 28629

Part II

Environmental Protection Agency

40 CFR Parts 148, 261, 266, 268, and 271 Land Disposal Restrictions Phase IV: Final Rule Promulgating Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters; Final Rule

that a reviewing agency would quickly reinstate the exemption after a one-time spill, particularly if small, and would not require specific actions to correct the problem. In contrast, EPA would expect the reviewing agency to require specific actions (such as creation and implementation of a spill prevention plan) for a plant that experienced repeated spills. EPA believes the severity of any violation and the precise actions needed to return the plant to compliance can best be assessed on a case-by-case basis. EPA has added language to the regulation to clarify this issue. It applies to all of the conditions of the exclusion.

C. Other Comments

A number of comments indicated a need for EPA to clarify other aspects of the proposal that the Agency is finalizing today.

1. Oil Borne Facilities

One commenter suggested that the exclusion that EPA is finalizing today applies not only to water borne wood treating plants but also to oil borne wood treating plants. At the time of proposal, EPA intended to create an exclusion only for plants using water borne preservatives. See, for example, the discussion at 63 FR 26057, col. 1. EPA did not evaluate oil borne plants at the time. It is EPA's general understanding that plants which use oil borne preservatives do not recycle wastewaters and spent solutions by using them in the work tank to treat wood. Rather, they reuse these wastewaters in cooling systems, vacuum seals, and other devices. EPA wants to limit today's exclusion to materials that are reused for their original intended purpose—the treatment of wood. EPA has not had time to investigate the jurisdictional and factual issues posed by the use of wastewaters for other, more ancillary purposes. Consequently, EPA is not expanding the exclusion beyond the proposal. It applies only to water borne processes.

2. Application of the Conditions to Units Other Than the Drip Pad

One commenter expressed opposition to "any language that would extend the EPA's RCRA authority to devices that have previously not been regulated under RCRA." In view of this comment, the Agency is prompted to clarify that the conditions for claiming the exclusion must be met with regard to any unit that comes into contact with the recycled wastewaters and spent wood preserving solutions excluded in today's rule.

Thus, sumps or other units that are arguably part of an exempt wastewater treatment unit and that manage wastewaters and spent solutions are subject to these conditions. EPA has already stated that "management to prevent releases would include, but not necessarily be limited to, compliance with [Subpart W] and maintenance of the sumps receiving the wastewaters and spent solutions from the drip pad and retort to prevent leaching into land and groundwater." (62 FR 26057). The Agency must be able to verify that the excluded materials are being managed to prevent release at every step of the recycling process through reclamation to ensure that the basic technical and policy conditions underlying the exclusion are properly met.

3. Relationship of Today's Exclusion to Previous Industry Exclusions

One commenter wanted to assure that today's exclusion would not now regulate units that transmit or store materials that have been excluded according to other, currently existing regulations. EPA does not intend to use today's exclusion to rescind either of the exclusions that the Agency has previously granted the wood preserving industry under §§ 261.4(a)(9)(i) and (ii).

4. Units That May Be Visually or Otherwise Determined to Prevent Release

One commenter expressed concern that the term "units" is an overly broad way to refer to those portions of the system subject to RCRA inspection. EPA will now clarify which "units" are subject to inspection under the conditions of this exclusion. As mentioned above, all units that come into contact with the excluded materials prior to reclamation must necessarily be subject to verification that they are able to contain these materials in a manner that prevents their release to the environment. This includes, but is not necessarily limited to, any drip pad, sump, retort or conduit that comes into contact with the wastewaters and spent solutions prior to reclamation. This also includes any unit that is arguably part of a plant's wastewater treatment system but that comes into contact with the wastewaters or spent solutions prior to reclamation. An inspector must be able to determine (by visual or other means) whether these units are managing the wastewaters and spent solutions in a manner that prevents release. When relying on a visual inspection (as opposed to a leak detection system or other means), it may be necessary for an inspector to require these units be drained or cleaned for the inspector to make an informed determination as to whether the unit is cracked or leaking.

5. CESQG Status

One commenter also requested EPA to prevent wood preserving plants from becoming conditionally exempt small quantity generators (CESQGs) after claiming the exemption. The commenter was concerned that other, non-excluded wastestreams generated at these plants that are covered by the listings would no longer be subject to any hazardous waste regulation. As explained in more detail in the response to comment document, EPA lacks sufficient information about the volumes of these other wastes and the risks they pose to promulgate a rule creating an exception to the long-established CESQG exemption for them.

D. State Authorization

Upon promulgation, this exclusion will immediately go into effect only for plants in those states and territories that are not currently authorized to implement the RCRA program (i.e., Alaska, Iowa, Hawaii, American Samoa, Northern Mariana Islands, Puerto Rico and Virgin Islands). Plants in these states are subject to the provisions of the federal program. Conversely, any plant located in a RCRA authorized state will be unable to claim the exclusion we are finalizing today unless and until that state amends its regulations to include the exclusion. Because EPA allows state programs to be more stringent than the federal program, it is not necessarily guaranteed that all authorized states will elect to adopt this exclusion.

XI. Clarification of the RCRA Exclusion of Shredded Circuit Boards

In the May 12, 1997 final rule on Land Disposal Restrictions, the Environmental Protection Agency (EPA) excluded shredded circuit boards from the definition of solid waste conditioned on containerized storage prior to recovery. To be covered by this exclusion shredded circuit boards must be free of mercury switches, mercury relays, nickel-cadmium batteries or lithium batteries. On a related issue, current Agency policy states that *whole* circuit boards may meet the definition of scrap metal and therefore be exempt from hazardous waste regulation. In a parenthetical statement in the May 12, 1997 rule, the Agency asserted that whole used circuit boards which contain mercury switches, mercury relays, nickel-cadmium batteries, or lithium batteries also do not meet the definition of scrap metal because mercury (being a liquid metal) and batteries are not within the scope of the

definition of scrap metal. The preamble cited 50 FR 614, 624 (1985).

Members of the electronics industry expressed concern to the Agency about the preamble statement regarding the regulatory status of whole used circuit boards which contain mercury switches, mercury relays, nickel-cadmium batteries, or lithium batteries. The electronics industry indicated that its member have developed a sophisticated asset/materials recovery system to collect and transport whole used circuit boards to processing facilities. The industry explained that the boards are sent to processing facilities for evaluation (continued use, reuse or reclamation) where the switches and the types of batteries are generally removed by persons with the appropriate knowledge and tools for removing these materials. Once these materials are removed from the boards, they become a newly generated waste subject to a hazardous waste determination. If they fail a hazardous waste characteristic, they are handled as hazardous waste, otherwise they are managed as a solid waste. Information was also provided regarding the quantity of mercury on these switches and on the physical state in which they are found on the boards. The information indicates that the mercury switches and relays on circuit boards from some typical applications contain between 0.02–0.08 grams of mercury and are encased in metal which is then coated in epoxy prior to attachment to the boards.

In today's final rule, the Agency recognizes that the preamble statement in the May 12, 1997 final rule is overly broad in that it suggested that the scrap metal exemption would not apply to whole used circuit boards containing the kind of minor battery or mercury switch components and that are being sent for continued use, reuse, or recovery. It is not the Agency's current intent to regulate under RCRA circuit boards containing minimal quantities of mercury and batteries that are protectively packaged to minimize dispersion of metal constituents. Once these materials are removed from the boards, they become a newly generated waste subject to a hazardous waste determination. If they meet the criteria to be classified as a hazardous waste, they must be handled as hazardous waste, otherwise they must be managed as a solid waste.

XII. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

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

The Agency estimated the costs of today's final rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considered compliance costs and economic impacts for newly identified wastes affected by this rule, as well as media contaminated with these wastes. In addition, the analysis addresses the cost savings associated with the new soil treatment standards being promulgated in today's rule. Newly identified mineral processing wastes covered under this rule include 118 mineral processing wastes identified as potentially characteristically hazardous. Also covered under this rule are TC metal wastes. Today's final rule also covers treatment standards for contaminated media (i.e., soil and sediment). EPA estimates the total cost of the rule to be a savings of $6 million annually, and concludes that this rule is not economically significant according to the definition in E.O. 12866. However, the Agency does consider this rule to be significant for novel policy reasons. The Office of Management and Budget has reviewed this rule.

Detailed discussions of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's proposed rule for newly identified mineral processing wastes, followed by a presentation of the cost, economic impact and benefit results, may be found in the background documents: (1) "Regulatory Impact Analysis of the Phase IV Land Disposal Restrictions Final Rule for Newly Identified Mineral Processing Wastes," (2)"Regulatory Impact Analysis of the Phase IV Land Disposal Restrictions Final Rule for TC Metal Wastes," and (3) "Regulatory Impact Analysis of the Phase IV Land Disposal Restrictions Final Rule for Contaminated Media," which were placed in the docket for today's final rule.

1. Methodology Section

The Agency estimated the volumes of waste and contaminated media affected by today's rule to determine the national level incremental costs (for both the baseline and post-regulatory scenarios), economic impacts (including first-order measures such as the estimated percentage of compliance cost to industry or firm revenues), and benefits or risk-screens used to document the inherent hazard of materials being evaluated.

2. Results

a. Volume Results. EPA estimates that there are 29 mineral commodity sectors potentially affected by today's rule, including an estimated 136 facilities that generate 118 streams of newly identified mineral processing secondary materials. The estimated volume for these potentially affected newly identified mineral processing secondary materials is 22 million tons. Also, approximately 1.3 million tons of contaminated soil containing coal tar and other wastes from manufactured gas plants are potentially affected by this rule. As discussed below, EPA does not believe that any TC metal process wastes are potentially affected by today's final rule. EPA estimates that approximately 165,000 tons per year of soil and sediment contaminated with TC metals and approximately 90,000 tons per year of previously regulated contaminated soils is impacted by today's rule.

b. Cost Results For the part of today's final rule that prohibits land storage of mineral processing residues (below the high volume threshold) prior to being recycled, EPA estimates these expected case annualized compliance costs to be $10 million. The cost results for this part of today's final rule are a function of two factors: (1) the expense associated with purchasing new storage units or upgrading existing storage units, and (2) the transfer of some mineral processing residues either from recycling to disposal resulting in increased costs or from disposal to recycling resulting in a cost savings.

For TC metal wastes the Agency believes that there will be no incremental costs associated with stabilization of these wastes from the promulgation of these treatment standards.[47] In addition, EPA believes

[47] One possible exception to this are producers of hazardous waste-derived fertilizers. This is

Record Detail

Full Document:	This document is currently only available by calling the RCRA, Superfund & EPCRA Hotline at (800) 424-9346
Title:	REGULATORY STATUS OF SPENT METAL FUEL FILTERS UNDER RCRA
Date:	06/03/98
To:	Vidich
From:	Bussard
Organization of Recipient:	United States Postal Service
Description:	off-specification gasoline used as a fuel or burned for energy recovery is not a solid waste; spent metal fuel filters which are drained and no longer contain a significant liquid component meet the definition of scrap metal and are exempt from hazardous waste regulation (261.6(a)(3)(ii)); hazardous waste determination not necessary if drained metal fuel filters will be recycled as scrap metal
Part(s) & Subpart(s):	261 Subpart A
Section(s):	261.1(c)(6); 261.6(a)(3)
Statutory Citation(s):	NA
Topic(s):	Hazardous Waste Recycling
Approximate Number of Hardcopy Pages:	2
Fax-On-Demand Code:	14184
EPA Document Number:	NA
RPC Number:	06/03/98 - 1
RPPC Number (if applicable):	NA
NTIS Number (if applicable):	NA
OSWER Directive Number (if applicable):	NA
Ordering & Availability:	Contact the RCRA, Superfund & EPCRA Hotline at (800) 424-9346

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9441.1993(07)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

April 29, 1993

Mr. Kevin Tighe
Tighe, McInroy & Corbett
1750 Pennsylvania Avenue
Suite 1201
Washington, D.C. 20006

Dear Mr. Tighe,

Thank you for your letter dated February 10, 1993, written on behalf of the National Automotive Radiator Service Association (NARSA). In your letter you requested guidance concerning the regulatory status under the Resource Conservation and Recovery Act (RCRA) of solder drippings generated during radiator repair operations.

Based on the information provided in your letter, the solder drippings you described would meet the definition of scrap metal under 40 CFR 261.1(c)(6) [" . . . bits and pieces of metal parts ... which when worn or superfluous can be recycled."] Secondary materials that meet the definition of scrap metal, while remaining solid and hazardous wastes, are excluded from federal RCRA regulations if they are recycled [40 CFR 261.6(a)(3)(iv))].

We would encourage radiator repair shops to recycle their solder drippings wherever possible, and to engage in "good housekeeping practices" with respect to the collection and storage of the solder drippings prior to recycling (see footnote 1). Good housekeeping would include practices that prevent the release of lead into the environment, such as regular floor sweepings in areas where solder falls, adequate storage of the solder drippings destined for recycling, and the segregation of solder drippings from other wastes and debris not intended for recycling. Adherence to these practices may also provide indicia to the regulatory agency implementing the RCRA program that the solder drippings are in fact going to be recycled.

Finally, please note that under Section 3006 of RCRA (42 U.S.C. Section 6926) individual states can be authorized to administer and enforce their own hazardous waste programs in lieu of the federal program. When states are not authorized to administer their own program, the appropriate EPA Region administers the program and is the appropriate contact for any case-specific determinations. Please also note that under Section 3009 of RCRA (42 U.S.C. Section 6926) states retain authority to promulgate regulatory requirements that are more stringent than

federal regulatory requirements. Therefore, I would encourage those persons generating and recycling solder drippings to make sure they are familiar with any state requirements applicable to this type of material.

If you have any additional comments or questions, please feel free to contact me directly, or call Ross Elliott of my staff at 202/260-8551. Thank you for your interest in hazardous waste recycling.

Sincerely,
Sylvia K. Lowrance, Director
Office of Solid Waste

1 If the solder drippings are not going to be recycled, the scrap metal exemption does not apply.

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APR 5 1989

Adrienne J. Bzura
Corporate Counsel
Old Bridge Chemicals, Inc.
P.O. Box 194
Old Bridge, New Jersey 08857

Dear Ms. Bzura:

This letter responds to your March 21, 1989 correspondence requesting a written determination on the regulatory status of material known as "drove" by the brass industry. Specifically, you requested a statement that drove is considered a "scrap metal" under the Resource Conservation and Recovery Act (RCRA).

Based on the description of drove provided in the National Association of Recycling Industries (NARI) Circular, I cannot conclusively state that drove, in the generic sense, is a scrap metal as defined in 40 CFR 261.1(c)(6), although some components of drove may meet the regulatory definition of scrap metal.

Similarly, based on the NARI description and information gathered in phone conversations, drove would not be considered a "spent material" under RCRA. And, provided that the drove is not derived from a pollution control device (e.g., the drove is not mixed with bag house dust), it would also not be a "sludge." Drove most clearly fits the description of either a co-product or a by-product. Because the distinction between the two classifications is not always clearly defined, I will only address the scenario of drove being classified as a by-product.

As stated at 40 CFR 261.2(c)(3), a non-listed by-product (i.e., a by-product that exhibits a characteristic of hazardous waste defined at 40 CFR Part 261 Subpart C) that is reclaimed is not a solid waste under RCRA. As you stated in our phone conversation, all of the drove is reclaimed and therefore is not defined as a solid waste (and, thus, not a hazardous waste). [NOTE: Because the regulatory status is the same whether a material is a reclaimed non-listed by-product or a co-product, the distinction is moot.]

You should note that State and local regulatory agencies may have applicable regulations that differ from Federal regulations. You should also contact your State regulatory agency, as well as the appropriate EPA Regional Office for

further information on the regulatory status of the drove.

For more information, please contact the RCRA Hotline at 1-800-424-9346, or the EPA Region II office. You may also call me at (202) 382-4805.

Sincerely,

Mitch Kidwell
Environmental Protection Specialist
Review Section

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

APRIL 11 1997

Mr. James E. Thomas Jr.
Jetco, Inc.
P.O. Box 11494
Memphis, TN 38111

Dear Mr. Thomas:

This is in response to your letters of October 14, 1996 and Dec 3, 1996 to Michael Shapiro. I apologize for the delay in our reply. Your questions concern the regulatory provisions under the federal hazardous waste regulations that apply to the remixing of paint and coatings that have separated in the container, and to the establishment of collection sites for empty paint cans.

First, I would like to commend you for your efforts to develop a technology that allows materials that might otherwise become wastes to be used as effective products as well as your efforts to minimize the failure of coatings which can result in unnecessary generation of waste and the need to use new replacement materials. The Environmental Protection Agency (EPA) encourages pollution prevention and the use of technologies that minimize waste generation.

Based on clarification provided to Kristina Meson and Ann Codrington of my staff and your letters, we understand that Jetco proposes to market a unit that remixes paint and coatings that have separated in the container due to age. The unit potentially may be purchased by hardware stores and other retailers who will encourage the public to bring in paint for remixing. You also propose to establish a system to collect paint cans that have been emptied according to the provisions at 40 Code of Federal Regulations 261.7 for future recycling as scrap metal. You ask that we clarify whether hazardous waste regulations apply to the owner or operator of a location that collects empty paint cans destined for recycling and whether regulations apply to the storage and transportation of the cans.

Hazardous Waste Determination

Paint that is to be remixed using the Jetco unit and is to be used for its intended purpose (e.g., as a paint or coating) regardless of its age or condition before re-mixing is not considered a solid waste and therefore cannot be a hazardous waste, and the hazardous waste regulations do not apply. However if the paint must be discarded, it would be considered a waste and the generator must make a hazardous waste determination and comply with any applicable requirements.

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In general hazardous waste regulations apply to materials which are first determined to be solid wastes. A solid waste is a hazardous waste if it is listed as a hazardous waste in Subpart D of 40 CFR Part 261, or if it exhibits a characteristic of hazardous waste as

identified in Subpart C of 40 CFR, Part 261. A generator may test the waste or use knowledge of the process (or the material) to determine whether the waste generated is hazardous. It is the responsibility of the generator of the paint waste to determine whether the waste is hazardous.

Discarded paints generally are not found on EPA's "Lists of Hazardous Wastes" found at Subpart D of 40 CFR part 261. However, discarded paints are considered hazardous waste if they exhibit a characteristic described at 40 CFR 262 Subpart C. Paint wastes may exhibit characteristics such as Ignitability or Toxicity described at 40 CFR §§262.21 and 261.24. Paint that is considered hazardous waste and that is generated by a conditionally exempt small quantity generator (see definition below) is not subject to federal regulation under Parts 262 through 266, 268, 270 and other applicable provisions, if the waste is discarded in a facility which meets the criteria of 40 CFR §§261.5(f) and/or (g). States however, may impose more stringent requirements than the federal regulations and therefore must be contacted to determine what requirements might apply where paint remixing operations are to occur.

Generator Status of Household Waste

Generally, wastes from households are not subject to hazardous waste regulation. If the remixing process is not successful, homeowners may discard the paint themselves, or the paint may be discarded at the business since household wastes are excluded from the definition of solid waste at 40 CFR 261.4(b). Therefore, the hazardous waste regulations do not apply to household waste, including household waste that has been collected, transported, stored, treated, disposed, recovered (e.g., refuse derived fuel) or reused. "Household waste" means any material including garbage, trash and sanitary residues in septic tanks) derived from households (including single and multiple residences, hotels, and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas). Therefore, if the waste comes from a household, it would not be subject to the hazardous waste regulations even if it were later discarded on the premises of a business.

Regulated Generators

If however, the paint is brought in by generators other than household generators (i.e., a conditionally exempt small quantity generator /1, a small quantity generator /2, or a large quantity generator /3), and the waste must be discarded (e.g., because the remixing process was not successful), paint that is hazardous waste would be subject to regulations and could not be discarded at the premises of the business unless the business is a permitted treatment, storage, or disposal facility licensed to accept such wastes. Household waste which is mixed with hazardous waste from regulated generators would also be regulated.

Collection Program

With respect to establishing a collection facility for empty paint cans, the Agency clarified its regulations pertaining to hazardous waste remaining in "empty" containers in a *Federal Register* notice published on November 25,1980 (see 45 *FR* 78524). We have

enclosed a copy of this *Federal Register* notice for your convenience. In this *Federal Register Notice,* EPA explained that "except where the hazardous waste is an acutely hazardous material listed in §261.33(e), the small amount of hazardous waste residue that remains in individual empty, [as described in 40 CFR 261.7] un-rinsed containers does not pose a substantial hazard to human health and the environment." The Agency also states in the November 25, 1980 *Federal Register* notice that "What should be clear from §261.7, however is that no "empty" containers are subject to regulatory control because no "empty" containers hold residues that are considered hazardous wastes for regulatory purposes."(45 *FR* 78525, November 25, 1980)

The definition of an "empty" container is found at 40 CFR 261.7(b)(1)(i), which describes a container as empty if:

> (i) all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, *e.g.,* pouring, pumping, and aspirating, *and*
> (ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, *or*
> (iii) (A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size, or
> (B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

For the purpose of this interpretation, we will rely on the discussion found at 40 CFR 261.7(b) which focuses on containers that have held hazardous waste other than gases and acutely hazardous materials, because paint wastes most often fall into this category.

The Agency goes on to say in the November *25,* 1980 *Federal Register* notice that "What should be clear from §261.7, however, is that no "empty" containers are subject to regulatory control because no "empty" containers hold residues 'that are considered hazardous wastes for regulatory purposes." (45 *FR* 78525, November 25, 1980)

Therefore, if the paint cans you propose to collect have been emptied in accordance with 40 CFR 261.7, the Agency would not consider them subject to regulatory control at the federal level. Please note that there are additional descriptions of "empty" that apply to containers holding acute hazardous waste or compressed gas (see 40 CFR 261.7(b)(2) and (3)). Also note that there may be state or local regulations which govern the collection of containers that have held paints or other coatings. Please be sure to check with the appropriate state or local agency for regulations and guidelines applicable to paint cans.

However, if the cans are not emptied according to the provisions at 40 CFR 261.7, they may be subject to regulatory control if they were received from generators of hazardous waste other than household generators. Residues remaining in paint cans in quantities above the levels defined at 40 CFR 261.7, would be regulated as hazardous waste if they meet the defining criteria of hazardous wastes found at 40 CFR 261 Subparts C and D. In

order for a business to collect such hazardous wastes, it must be a permitted treatment storage or disposal facility licensed to accept such waste.

I hope this information is useful. As you are aware, we have not included information about air or water regulations that may apply to the activities you propose, and we recommend that you contact the appropriate offices for that appropriate information. Please direct inquiries to the Director of the Office of Air Quality Planning and Standards, Mr. John S. Seitz, U.S. EPA- MD-10, Research Triangle Park, NC 27711, and to the Director of the Office of Water and Drinking Water, Ms. Cynthia C. Dougherty, U.S. EPA - E1209, 401 M Street S.W., Washington D.C. 20460.

Should you have questions or clarifications about this interpretation, please contact Ann Codrington of my staff at 703-308-8825.

Sincerely,

Elizabeth Cotsworth, Acting
Director
Office of Solid Waste

Attachments

1 A generator is a conditionally exempt small quantity generator in a calendar month if he generates no more than 100 kilograms of hazardous waste and no more than 1 kilogram per month if the waste is an acute hazardous waste listed in 40 CFR parts 261.31, 261.31, or 261.33(e). A conditionally exempt small quantity generator may not accumulate more than 1000 kilograms at any one time (see 40 CFR 261.5).

2 A small quantity generator is a generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and the quantity of waste accumulated on site never exceeds 6000 kilograms (see 40 CFR 262.34(d)).

3 A large quantity generator is a generator of quantities over 1000 kilograms of hazardous waste per calendar month.

SECTION II:
Incidental Fluids

A) Recycled Used Oil Management Standards-Technical Amendments

B) U.S. EPA Interpretive Memo: No Free Flowing Oil

C) RCRA Regulations Governing Empty Containers

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 264, 265, 271, and 279

[EPA/530-Z-93-004; FRL-4619-7]

RIN 2050-AC17

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Recycled Used Oil Management Standards

AGENCY: Environmental Protection Agency.

ACTION: Final rule; technical amendments and corrections.

SUMMARY: This action corrects several technical errors and provides clarifying amendments to the final recycled used oil management standards rule. The final rule was published on September 10, 1992 (57 FR 41566). This action also corrects an error in the final used oil rule published on May 20, 1992 (57 FR 21524). These revisions provide clarification and correct unintended consequences of both rules.

EFFECTIVE DATE: March 8, 1993.

FOR FURTHER INFORMATION CONTACT: Ms. Eydie Pines at (202) 260-3509 or Bryan Groce at (202) 260-9550, Office of Solid Waste (OS-332), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

SUPPLEMENTARY INFORMATION:

A.1. Burning and Blending Requirements (Former Part 266, Subpart E)

On September 10, 1992, EPA promulgated regulations to govern the management of recycled used oils. In the discussion of the state authorization process in the final rule (57 FR 41566), EPA stated that the new part 279 regulations were being promulgated under section 3014(a) of RCRA, and noted that section 3014(a) "predates the 1984 HSWA amendments." The Agency went on, in that section, to explain that the part 279 requirements would take effect in states without final RCRA authorization 6 months after publication (March 8, 1993) and that the part 279 standards would become effective in states with RCRA base program authorization only after the state revised its RCRA program to include the new requirements. This discussion implied that all of the requirements being promulgated under part 279 are RCRA requirements that are not mandated under the Hazardous and Solid Waste Amendments of 1984 (HSWA) and that, therefore, the new standards governing the management of recycled used oils would not be immediately enforceable by EPA in authorized states.

The discussion of the status of the part 279 requirements in authorized states was based in large part on the fact that section 3006(h) of RCRA, which was added by Congress as part of the Superfund Amendments and Reauthorization Act of 1986, allows EPA to authorize state used oil programs in the same manner as state hazardous waste programs. EPA believes that Congress did not express an intent to treat used oil requirements under section 3014(a) as "HSWA" requirements, that is, as directly enforceable by EPA prior to State authorization under Section 3006(h). After publication of the September 10, 1992 notice, however, EPA realized that its position was arguably inconsistent with statements made in the preamble to the November 29, 1985 final rule promulgating standards for the burning of used oil, and that further clarification is necessary.

Some of the part 279 provisions promulgated in the used oil management standards consist of existing requirements that have been recodified from 40 CFR part 266, subpart E, as adopted in 1985. On November 29, 1985 (50 FR 49201), EPA issued the used oil burning requirements pursuant to the authority of section 8 of the Used Oil Recycling Act of 1980 (UORA), now incorporated as section 3014(a) of RCRA. At that time, there was no section 3006(h) and, therefore, no statutory mechanism existed to authorize states to operate programs for the recycling of non-hazardous used oil. EPA, therefore, took the position that the used oil burning requirements adopted under section 3014(a) would be Federally enforceable in both authorized and non-authorized states. With the addition of section 3006(h) to RCRA in 1986, however, that statutory authority to authorize states to regulate nonhazardous used oil recycling now exists. This raises the question of whether the old part 266, subpart E requirements should be treated like the other section 3014(a) requirements issued in 1992, that is, not Federally enforceable in states that have been authorized for the RCRA base program, but are not authorized for the subpart E requirements. EPA believes that, by the addition of section 3006(h) to RCRA, Congress could not have intended to make these requirements suddenly unenforceable in authorized states where they had been previously enforceable. Indeed, EPA believes that Congress intended for these requirements to be enforced both prior to and following the 1986 amendment to RCRA. Therefore, EPA is clarifying that all existing used oil burning requirements originally promulgated in 1985 remain Federally enforceable in all States which are not yet authorized for the former part 266, subpart E, whether or not the State has received RCRA subtitle C base program authorization.[1] States must modify their programs to include requirements equivalent to the Federal provisions or may promulgate more stringent regulations.

Table 1 of § 271.26 identifies which part 279 requirements represent the previous part 266, subpart E provisions that will continue to be Federally enforceable in States not authorized for these provisions. The regulatory text in part 279, subparts G and H has not been substantially changed from that previously found in part 266, subpart E. When revisions were made, the revisions were for clarification purposes only. Thus, §§ 279.10, 279.11, and most provisions of § 279.1 and of part 279, subparts G and H will continue to be Federally enforceable in states that have not yet adopted requirements equivalent to the previous part 266, subpart E requirements and received authorization from EPA to implement and enforce those requirements. For all other provisions of part 279, EPA continues to believe that it is the most consistent with the intent of Congress to treat these requirements in the same manner as non-HSWA provisions of the hazardous waste regulations, and as such, subject them to the RCRA state authorization program requirements. In the case of all new provisions (those not previously contained in part 266, subpart E), these provisions do not become effective in authorized states until individual states adopt the provisions and EPA grants the states authorization for the provisions.[2] In the case of those few states (Alaska, Hawaii, Iowa, Wyoming, and the U.S. Territories) that are not authorized for the RCRA base program, all part 279 provisions will be effective and Federally enforceable six months after promulgation of the part 279 provisions (March 8, 1993).

[1] In order to retain authorization for the RCRA program, states have been authorized to enforce the part 266, subpart E requirements. These states remain authorized to implement and enforce these provisions, and today's notice and the final recycled used oil regulations do not affect these states' authorities regarding the existing provisions. For convenience, authorization/processing of state applications is considered within HSWA Cluster I by EPA.

[2] As stated in the final rulemaking for recycled used oil management standards, authorized states must modify their programs by July 1, 1994 if no statutory changes are required, or by July 1, 1995 if statutory changes are necessary (see 57 FR 41605).

In Table 1 of § 271.26, EPA notes that there is no recodified provision in part 279 to correspond with the previous 40 CFR 266.43(b)(4)(vi). The Agency believes that the information required under former § 266.43(b)(4)(vi), i.e., a statement reading "This used oil is subject to EPA regulation under 40 CFR part 266," is unnecessary and redundant. Therefore, EPA has not included this requirement in the new used oil management standards.

Status of State	Before 3/8/93	As of 3/8/93
Non-authorized RCRA Base Program.	40 CFR part 266 subpart E Federally enforceable.	40 CFR part 279 is Federally enforceable.
Authorized RCRA Base Program Non-authorized part 266 subpart E.	40 CFR part 266 subpart E is Federally enforceable.	40 CFR part 279 subparts A–F and I are not enforceable until the state is granted authorization. 40 CFR part 279 subparts G and H are Federally enforceable.
Authorized RCRA Base Program Authorized part 266 subpart E.	40 CFR part 266 subpart E is State enforceable.	40 CFR part 279 subparts A–F and I are not enforceable until the state is granted authorization. 40 CFR part 279 subparts G and H are state enforceable[1].

[1] 40 CFR part 279, subparts G and H contain certain provisions which were not in part 266, subpart E. The State will continue to enforce only those provisions for which it obtained authorization (those provisions are listed in Table 1 of § 271.26).

B. Technical Corrections

1. Corrections to the Preamble Language

This action corrects several errors that were published in the September 10 final rule. There are several typographical errors in the preamble, as well as misstatements and incorrect references to regulatory and preamble sections. These corrections are described below.

1. On page 41579, in the second column, remove the word "and" in line ten so the line reads as follows: "is to be burned for energy recovery, the used oil will have to * * *"

2. On page 41581, in the first paragraph in the middle column, the reference to § 260.40(d)(2) should read § 266.40(d)(2).

3. On page 41583, in the middle column, six lines from the bottom, remove the reference to "section VI.D.3." of the preamble.

4. On page 41585, in the first paragraph of the first column, the reference to section "V.D.1.h." should read "VI.D.1.h."

5. On page 41585, in the last sentence of the section entitled *b. Used oil generated on ships,* the reference to "§ 279.10(e)(3)" should read "§ 279.10(f)".

6. On page 41587, the word "send" in line 18 in paragraph two of the second column should be revised to "sent".

7. On page 41590, in footnote 17, the reference to "section VI.E.5." of the preamble should read "section VI.D.4.", referring to the discussion of secondary containment provisions at processing/re-refining facilities.

8. On page 41590, in the first column, revise the heading and the first sentence of section (e) with the following text: "*DOT Requirements.* Persons offering used oil for transportation as well as persons transporting used oil that meets the definition of a hazardous material in 49 CFR 171.8, must comply with all applicable regulations in 49 CFR Parts 171 through 180." Also add the additional new text after the first sentence. "On February 2, 1993, the Department of Transportation published an interim final rule which amended the DOT's hazardous materials regulation by regulating oil as a hazardous material. The interested reader is referred to this document for further information regarding the applicability of this rule."

9. On page 41591, in the second paragraph of the middle column, and on page 41596, in the first paragraph of the first column, the reference to "40 CFR 112.79(c)" should read "40 CFR 112.7(c)".

10. In footnote 21 on page 41595, the reference to preamble section "VI.E.5." should read "VI.D.3."

11. On page 41598, in the last sentence of the first paragraph of the section entitled *1. Closure,* remove the phrase "per 40 CFR 261.3(d)," and add the following sentence to the end of the paragraph: "For a determination of hazard regarding contaminated media and other materials, see 40 CFR 261.3, as well as EPA's 'contained-in principle' (57 FR 983 (Jan. 9, 1992) and 57 FR 37225 (Aug. 18, 1992))."

12. On the same page, in the last sentence of the last full paragraph in the third column, remove the phrase "per 40 CFR 261.3(d) or 261.4(b)" and add the following sentence to the end of the paragraph: "For a determination of hazard regarding contaminated media and other materials, see 40 CFR 261.3, 261.4(b), as well as EPA's 'contained-in principle' (57 FR 983 (Jan. 9, 1992) and 57 FR 37225 (Aug. 18, 1992))."

13. On page 41599, under part 5(a) revise the reference to "266.41", in the third sentence, to read "266.40".

14. On page 41600, under 5.f. Storage Requirements, after the last word of the first paragraph, add the following text ", or units subject to regulation under 40 CFR parts 264 or 265."

15. On page 41600, in the first paragraph of the middle column, the reference to preamble "section VI.5.f." should read "section VI.D.4."

16. On page 41600, in the section entitled *h. Used oil fuel analysis (halogens),* the reference to "§ 266.40" should read more specifically as "§ 266.40(c)".

17. On page 41605, in the first column, first complete paragraph, second sentence, add the words "and on Indian lands" after the word "states" so that the text reads as follows: "The rules will take effect in states and on Indian lands that do not have final authorization . . ."

18. On page 41605, second column, first complete paragraph, second sentence, after the word "states" add the words "and Indian lands" so that the text reads as follows: "That is, in the unauthorized states and Indian lands, a used oil . . ."

2. Clarification of Issues Discussed in the Preamble

In addition to the corrections listed above, EPA wishes to clarify several issues discussed in the preamble of the May 20, 1992 and September 10, 1992 rule.

EPA is clarifying the definition of used oil processing as it relates to the act of gravity hot-draining used oil from non-terne plated used oil filters. The definition of used oil processing was intended to regulate the process of making used oil more amenable for production of fuel oils, lubricants and other used oil derived products. The act of physically separating used oil from non-terne plated used oil filters does not fall under the processing definition if the act is conducted for the purpose of removing the used oil for management under part 279. The Agency did not intend to regulate the removal of used

oil from non-terne plated used oil filters under the § 279.1 processing definition, and therefore clarifies the distinction between the "removal of used oil from solid waste," which does not fit under the processing definition, and "making used oil more amenable for production of fuel oils, lubricants and other used oil derived products" which does fit under the processing definition.

On page 41574, in the third column, the first sentence of the first full paragraph incorrectly states that residues or sludges from the processing of used oil are not regulated under part 279. In fact, as evidenced by § 279.10(e), EPA did intend to regulate such residuals if burned for energy recovery or used in a manner constituting disposal, with the exception of re-refining distillation bottoms that are used as feedstock to manufacture asphalt products.

On page 41583, in the first column at the end of section g.iii, EPA incorrectly states that mixtures of used oil and diesel fuel mixed by a generator for use in its own vehicles "must be managed in accordance with the used oil fuel specification regulations." In fact, as the language of section 279.20(a)(3) states, EPA does not intend to regulate such mixtures under any provision of part 279 once the mixing has occurred.

On page 41587, near the middle of the first column, EPA cites Alabama's Project ROSE as an example of a program that runs "do-it-yourself" used oil collection centers. This is not entirely accurate. While Project ROSE may administer some collection centers that accept used oil solely from household DIY generators, the preamble correctly describes the Alabama program in stating that it accepts used oil from commercial generators as well. Therefore, Project ROSE is not the best example of a "DIY used oil collection center," since by definition, such collection centers are not authorized to accept used oil from regulated generators. The Project ROSE program provides a better example of a "used oil collection center," as defined in § 279.1 and discussed above.

On page 41582, in footnote 9, EPA misquotes the words of § 279.61(a)(3) to say that off-spec. used oil may be burned in an incinerator "in compliance with subpart O of 49 CFR parts 264/265." The language of the regulation actually reads "subject to regulation under 40 CFR part 264 or 265." EPA makes the same or similar errors on page 41586 in the last full paragraph of the first column, on page 41599 in section b.(4), and on page 41600 in footnote 23.

On page 41601, the first paragraph of section 6 states that the requirements for marketers formerly contained in § 266.43 were recodified in part 279, subpart H "without modification." In fact, EPA did introduce certain changes to these requirements. EPA added certain exemptions to the "rebuttable presumption" of mixing used oil with hazardous waste, added additional definitions, and made certain changes to the record-keeping requirements on marketers. EPA also amended the definition of "marketer" to include only those persons who initiate the shipment of off-specification used oil fuel directly to a used oil burner or who are the first to claim that a used oil fuel meets the specification. The former definition of marketer included those who market off-specification fuel to other marketers. EPA made this change because those persons who initiate shipments of off-specification fuel to other marketers are already covered by the new tracking requirements in part 279 for generators, transporters, or recycling facilities. Similarly, the first full sentence in the middle column following Table VI.6. implies that there is an entity called a "fuel oil dealer" who is neither a generator, transporter, or recycling facility who may be selling on-specification fuel. This statement is misleading in light of the revised definition of marketer in part 279. "Fuel oil dealers" who never handle used oil fuel were never intended to be regulated by part 266, subpart E, and are not regulated under the new part 279, subpart H. Persons who accept off-specification used oil fuel from a generator, transporter, or recycling facility and market it to a burner are subject to regulation under part 279 as marketers.

EPA discussed the requirements for used oil storage at several places in the preamble. The regulations at §§ 279.22(a), 279.45(b), 279.54(a), and 279.64(a) state that used oil generators, transporters, processors/re-refiners, and burners must not store used oil in units other than tanks, containers, or units subject to regulation under part 264 or 265 of 40 CFR. In the preamble discussions of storage (57 FR 41586, 41591, 41594, and 41600), EPA makes reference to compliance with parts 264 or 265 only with respect to surface impoundments (parts 264 or 265, subpart K). EPA clarifies that nothing precludes a used oil handler from storing used oil in a container or tank that is subject to regulation under the applicable requirements of part 264 or 265 (*i.e.*, subparts I and J, respectively). These requirements are more stringent than the used oil management standards promulgated on September 10 and, therefore, provide an adequate level of protection of human health and the environment. As stated on page 41591 in the discussion of storage at used oil transfer facilities, any used oil transfer facility that is currently in compliance with the part 265, subpart J requirements (for aboveground tanks) will be deemed in compliance with the requirements promulgated today. Such is the case for other types of used oil handlers and other types of storage units as well.

On page 41599, EPA explained that off-specification used oil may be burned only in certain devices. In the preamble to the 1985 regulations, EPA explained that the regulations were designed only to address the burning of used oil in such devices and that they did not apply to the burning of used oil in other devices such as diesel and marine engines because EPA did not develop the used oil specification with these types of devices in mind (see 50 FR 49192). EPA wishes to clarify that the provisions of §§ 279.12(c) and 279.61(a) were not intended to alter this pre-existing policy. Therefore, the burning of used oil in devices such as diesel and marine engines is not subject to regulation under part 279, subpart G.

3. Corrections to the Regulatory Language

In the September 10 rule, EPA exempted from regulation both as used oil and as hazardous waste, those distillation bottoms from used oil re-refining that are used for making asphalt products from regulation [§ 279.10(e)]. This action moves part of that provision without change to § 261.4(b), the appropriate location for an exclusionary provision from the definition of hazardous waste. In addition, this notice corrects a numbering error that was made in the May 20, 1992 final rule (57 FR 21534) and repeated in the Correction Notice of July 1, 1992 (57 FR 29220). In both the May 20 final rule and the subsequent correction notice, the exclusion for non-terne plated used oil filters was codified as subparagraph (b)(15) of § 261.4 even though EPA had not yet promulgated paragraphs (b)(13) or (b)(14). This action corrects these errors by redesignating the used oil filter exclusion as § 261.4(b)(13).

The Agency is amending § 271.16, *Requirements for Enforcement Authority*, to add language regarding violations of the used oil management standards. This section sets out the requirements for criminal enforcement authority for states seeking authorization to operate state programs

in lieu of subtitle C programs. Congress amended RCRA in 1986 to clarify that EPA's criminal enforcement authorities for violations of subtitle C requirements extend to violations of requirements for used oil that is regulated under section 3014 of RCRA but not listed or identified as a hazardous waste. Congress also amended section 3006(h) to require EPA to apply the same standards and procedures in its review of state programs for nonhazardous used oil, that it applies when reviewing programs for hazardous wastes under subtitle C. In other words, state programs for nonhazardous used oil must be equivalent to and consistent with the federal program (and programs in other states). Such programs must also provide for adequate enforcement.

Congress clearly felt that criminal enforcement authorities were essential to successful implementation of federal regulatory program for nonhazardous used oils. EPA believes that criminal enforcement authority is equally important to adequate enforcement of state programs for nonhazardous used oils. Consequently, EPA is amending § 271.16 to clarify that any state that decides to regulate recycled used oil as nonhazardous waste and apply to EPA for authorization to operate its state program in lieu of the federal program must show that it has authority to bring criminal enforcement actions for specified violations of its used oil program.

In addition, EPA is amending § 279.10(i), dealing with PCB-contaminated used oil. The language codified in the September 10 rule indicated that used oils contaminated with PCBs, which are regulated under part 761 of the TSCA regulations, are exempt from the part 279 requirements. EPA's intent was to avoid duplicative regulation of such used oils, and the Agency mistakenly included this language in § 279.10(i), assuming that the requirements in § 761.20(e) comprehensively regulated such oils. The language in § 761.20(e), however, incorporates by reference the requirements of the former part 266, subpart E and supplements them, rather than substitutes for them, such that PCB-contaminated used oils are currently subject to both RCRA and TSCA regulations governing the burning of used oil for energy recovery. EPA did not intend, by the promulgation of part 279, to relax the existing requirements on used oils containing PCBs. EPA, therefore, is amending § 279.10(i) to accurately reflect the complementary nature of the RCRA and TSCA regulations. Marketers and burners who market used oil containing any quantifiable level of PCBs must comply with applicable standards of part 279 as well as additional standards and restrictions under 40 CFR 761.20(e).

Consistent with this change to the regulations, in the preamble statement on page 41583, in section (v) in the middle column, *PCB-contaminated used oils*, the following clarifying sentences should be added to the end of the paragraph: "Marketers and burners of used oil who market used oil fuel containing any quantifiable level of PCBs are subject to applicable standards on marketing and burning used oil containing PCBs found at 40 CFR 761.20(e). Blending for the purpose of reducing the concentration of PCBs to below 50 ppm or the level of detection is prohibited."

On page 41581 of the preamble, EPA explained that it was adopting a "no free flowing oil" concept to address the regulation of materials containing or otherwise contaminated with used oil. EPA explained that if there was no visible sign of free-flowing oil on or in a material, the material would not be regulated as used oil. Materials containing or otherwise contaminated with used oil would be regulated as used oil until the used oil was removed from the material, and the oil removed from such a material would also be regulated as used oil. The regulatory language in § 279.10(c), however, unintentionally suggests that such materials continue to be regulated as used oil even after the oil is removed. Therefore, EPA is amending § 279.10(c) to implement the "free-flowing oil" concept to be consistent with its original intent.

EPA has added a paragraph to § 279.12(c) so that it is consistent with the language in § 279.61(a).

The language in § 279.21(a) mistakenly suggests that used oil generators may not mix used oil with hazardous waste if the resulting mixture is hazardous. In fact, EPA meant only to clarify that used oil generators must comply with § 279.10(b) as well as any subtitle C requirements that may apply to the mixture. EPA has amended the provision accordingly.

The storage provisions in the September 10, 1992 rule (§§ 279.22, 279.45, 279.54, and 279.64) all contain similar errors. Each provision contains a reference to the "de minimis" wastewater provision of § 279.10(f) which is unnecessary and somewhat confusing. EPA is deleting these references. In addition, all four provisions refer to used oil "generators," even though only § 279.22 applies to generators. EPA corrects these errors. EPA also corrects the reference to "generators" in § 279.74(a).

EPA is amending the first sentence of § 279.40(a)(4) by deleting the misleading phrase "from the initial generator." EPA did not intend for do-it-yourselfers to be considered generators. Rather, the generator is to be considered the person who accepts or picks up the DIY oil for proper management.

EPA is revising the language in § 279.43 (b), which merely cross-references DOT hazardous materials transportation regulations in title 49 of the CFR to which used oil transporters may be subject. The original language could have been interpreted to expand the scope of the DOT regulations, which was not EPA's intent.

EPA is revising the language in § 279.45(d)(1) by adding a paragraph (d)(1)(iii) to this section. Paragraph (d)(1)(iii) provides an equivalent secondary containment system for used oil stored in containers. EPA already provides an equivalent secondary containment system for used oil stored in existing and new aboveground tanks. Therefore, EPA is now providing this regulation for used oil stored in containers to allow for consistency in the storage of used oil stored in aboveground tanks and containers. This revision is also added to § 279.54(c)(1).

Administrative Procedures Act (APA) Requirements

Today's rule is issued without prior notice and comment. All changes being made either correct errors or help to clarify the language contained in the May 20, 1992 and September 10, 1992 final rules. No further public comment is necessary.

List of Subjects

40 CFR Part 261

Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 264

Hazardous waste, Packaging and containers, Security measures, Surety bonds.

40 CFR Part 265

Hazardous waste, Packaging and containers, Security measures, Surety bonds.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indians-lands, Intergovernmental relations, Penalties, Reporting and

recordkeeping requirements, Water pollution control, Water supply.

40 CFR Part 279

Petroleum, Recycling, Reporting and recordkeeping requirements, Used oil.

Dated: March 22, 1993.

Richard J. Guimond,

Assistant Surgeon General, USPHS, Acting Assistant Administrator.

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

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921–6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

§ 261.4 [Amended]

2. Section 261.4 is amended by redesignating paragraph (b)(15) as (b)(13).

3. Section 261.4 is amended by adding paragraph (b)(14) to read as follows:

§ 261.4 Exclusions.

* * * * *

(b) * * *

(14) Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products.

* * * * *

§ 261.5 [Amended]

4. In paragraph (j), revise the phrase "subpart G of part 279," to read "part 279."

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

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

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

6. Section 264.1 is amended by revising paragraph (g)(2) to read as follows:

§ 264.1 Purpose, scope, and applicability.

* * * * *

(g) * * *

(2) The owner or operator of a facility managing recyclable materials described in § 261.6 (a)(2), (3), and (4) of this chapter (except to the extent they are referred to in part 279 or subparts C, D, F, or G of part 266 of this chapter).

* * * * *

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

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

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, 6935, and 6936.

8. Section 265.1 is amended by revising paragraph (c)(6) to read as follows:

§ 265.1 Purpose, scope, and applicability.

* * * * *

(c) * * *

(6) The owner or operator of a facility managing recyclable materials described in § 261.6 (a)(2), (3), and (4) of this chapter (except to the extent they are referred to in part 279 or subparts C, D, F, or G of part 266 of this chapter).

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

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

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

10. Section 271.16 is amended by revising paragraph (a)(3)(ii) to read as follows:

§ 271.16 Requirements for enforcement authority.

(a) * * *

(3) * * *

(ii) Criminal remedies shall be obtainable against any person who knowingly transports, treats, stores, disposes or recycles any used oil regulated by EPA under section 3014 of RCRA that is not listed or identified as a hazardous waste under the state's hazardous waste program in violation of standards or regulations for management of such used oil; or who makes any false statement or representation in any application, label, manifest, record, report, permit or other document filed, maintained, or used for purposes of program compliance (including compliance with any standards or regulations for used oil regulated by EPA under section 3014 of RCRA that is not listed or identified as hazardous waste).

* * * * *

§ 271.26 [Amended]

11. The second sentence in § 271.26(g) is amended by adding a parenthesis after the phrase "as part of its authorization petition submitted to EPA under § 271.5"

12. Section 271.26 is amended further by adding paragraph (h) and Table 1 to read as follows:

§ 271.26 Requirements for used oil management.

* * * * *

(h)(1) Unless otherwise provided in part 271, state programs shall have standards for the marketing and burning of used oil for energy recovery that are at least as stringent as the requirements and prohibitions that EPA adopted on November 29, in 40 CFR part 266, subpart E of this chapter. The part 279 of this chapter requirements specified in Table 1 (except those provisions identified in footnotes 1 and 2 of Table 1) are Federally enforceable in those states that have not adopted state requirements equivalent to 40 CFR part 279, subparts G and H of this chapter requirements and have not been authorized to enforce the state requirements.

TABLE 1.—REGULATIONS ADOPTED NOVEMBER 29, 1985 REGARDING THE BURNING OF USED OIL FOR ENERGY RECOVERY

[These Part 279 provisions will continue to be enforced by EPA]

Former provisions of 40 CFR part 266, subpart E (1992)	Recodified provisions within 40 CFR part 279
Sec. 266.40(a)	Sec. 279.60(a)
Sec. 266.40(b)	Sec. 279.1[1]
Sec. 266.40(c) [rebuttable presumption].	Sec. 279.63(a), (b) and (c)[2]
Sec. 266.40(d)(1) and (2).	Sec. 279.10(b)(2) and (3)
Sec. 266.40(e)	Sec. 279.11 Sec. 279.60(c)
Sec. 266.41(a)(1) and (2).	Sec. 279.71
266.41(b)(1) and (2)	Sec. 279.61(a) 279.23(a)
Sec. 266.42(a)	Sec. 279.60(a)
Sec. 266.42(b)	Sec. 279.70(a)
Sec. 266.42(c)	Sec. 279.60(a)
Sec. 266.43(a)(1)	Sec. 279.70(a) and (b)(1)
Sec. 266.43(a)(2)	Sec. 279.70(b)(2)
Sec. 266.43(b)(1)	Sec. 279.72(a)
Sec. 266.43(b)(2)	Sec. 279.71
Sec. 266.43(b)(3)	Sec. 279.73(a)
Sec. 266.43(b)(4)(i–v)	Sec. 279.74(a)
Sec. 266.43(b)(4)(vi)	not included
Sec. 266.43(b)(5)(i) and (ii).	Sec. 279.75(a)
Sec. 266.43(b)(6)(i)	Sec. 279.74(b) and (c) 279.72(b)
Sec. 266.43(b)(6)(ii)	Sec. 279.74(a) Sec. 279.75(b)
Sec. 266.44(a)	Sec. 279.61(a) Sec. 279.23(a)
Sec. 266.44(b)	Sec. 279.62(a)
Sec. 266.44(c)	Sec. 279.66(a)
Sec. 266.44(d)	Sec. 279.72(a)

TABLE 1.—REGULATIONS ADOPTED NOVEMBER 29, 1985 REGARDING THE BURNING OF USED OIL FOR ENERGY RECOVERY—Continued

[These Part 279 provisions will continue to be enforced by EPA]

Former provisions of 40 CFR part 266, subpart E (1992)	Recodified provisions within 40 CFR part 279
Sec. 266.44(e)	Sec. 279.65(a) and (b) Sec. 279.66(b) Sec. 279.72(b)

[1] Contains additional new definitions that were not included in the 1985 rule.
[2] Paragraphs (c)(1) and (2) of § 279.63 contain new exemptions from the rebuttable presumption that were not part of the 1985 rule.

(2) In states that have not been authorized for the RCRA base program, all requirements of Part 279 will be Federally enforceable effective March 8, 1993.

PART 279—STANDARDS FOR THE MANAGEMENT OF USED OIL

13. The authority citation for part 279 continues to read as follows:

Authority: Sections 1006, 2002(a), 3001 through 3007, 3010, 3014, and 7004 of the Solid Waste Disposal Act, as amended (42 U.S.C. 6905, 6912(a), 6921 through 6927, 6930, 6934, and 6974); and sections 101(37) and 114(c) of CERCLA (42 U.S.C. 9601(37) and 9614(c)).

§ 279.1 [Amended]

14. In § 279.1, the definition of "used oil," is amended by revising the phrase "if contaminated" to read "is contaminated."

15. Section 279.10 is amended by revising paragraph (b)(2) introductory text to read as follows:

§ 279.10 Applicability.

* * * * *

(b) * * *

(2) Characteristic hazardous waste. Mixtures of used oil and hazardous waste that solely exhibits one or more of the hazardous waste characteristic identified in subpart C of part 261 of this chapter and mixtures of used oil and hazardous waste that is listed in subpart D solely because it exhibits one or more of the characteristics of hazardous waste identified in subpart C are subject to:

* * * * *

16. Section § 279.10(b)(2)(ii) is amended by adding the phrase "Except as specified in § 279.10(b)(2)(iii)" at the beginning of the paragraph.

17. In § 279.10(b)(2)(iii) revise the phrase "because if exhibits" to read "because it exhibits".

18. In § 279.10(d)(1) revise the phrase "or other products" to read "or other fuel products".

19. In § 279.10(e)(3)(ii) revise the phrase "if the materials are identified as hazardous waste" to read "if the materials are listed or identified as hazardous wastes."

20. Section 279.10 is amended further by revising paragraph (c), paragraph (e)(4) and paragraph (i) to read as follows:

§ 279.10 Applicability.

* * * * *

(c) *Materials containing or otherwise contaminated with used oil.* (1) Except as provided in paragraph (c)(2) of this section, materials containing or otherwise contaminated with used oil from which the used oil has been properly drained or removed to the extent possible such that no visible signs of free-flowing oil remain in or on the material:

(i) Are not used oil and thus not subject to this part, and

(ii) If applicable are subject to the hazardous waste regulations of parts 124, 260 through 266, 268, and 270 of this chapter.

(2) Materials containing or otherwise contaminated with used oil that are burned for energy recovery are subject to regulation as used oil under this part.

(3) Used oil drained or removed from materials containing or otherwise contaminated with used oil is subject to regulation as used oil under this part.

* * * * *

(e) * * *

(4) Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products are not subject to this part.

* * * * *

(i) *Used oil containing PCBs.* In addition to the requirements of 40 CFR part 279, marketers and burners of used oil who market used oil containing any quantifiable level of PCBs are subject to the requirements found at 40 CFR 761.20(e).

21. The table in § 279.11 is amended by adding a note to the end to read as follows:

§ 279.11 Used oil specifications.

* * * * *

Note: Applicable standards for the burning of used oil containing PCBs are imposed by 40 CFR 761.20(e).

22. Section 279.12 is amended by adding paragraph (c)(3) to read as follows:

§ 279.12 Prohibitions.

* * * * *

(c) * * *

(3) Hazardous waste incinerators subject to regulation under subpart O of parts 264 or 265 of this chapter.

* * * * *

23. Section 279.21 is amended by revising paragraph (a) to read as follows:

§ 279.21 Hazardous waste mixing.

(a) Mixtures of used oil and hazardous waste must be managed in accordance with § 279.10(b).

* * * * *

§ 279.22 [Amended]

24. The first sentence of § 279.22 is removed.

§ 279.23 [Amended]

25. In § 279.23 remove paragraph (b) and redesignate paragraph (a) as introductory text and paragraphs (a)(1) through (3) as (a) through (c) respectively.

§ 279.40 [Amended]

26. In the first sentence of § 279.40 (a)(4), revise the words "generated by," to read "from" and remove the words "from the initial generator."

27. In § 279.40 (d)(4), the phrase "of the partial Marketers" is removed.

§ 279.42 [Amended]

28. In § 279.42 paragraph (a) is revised to read as follows:

§ 279.42 Notification.

(a) *Identification numbers.* Used oil transporters that have previously notified EPA of hazardous waste and other used oil management activities and obtained a U.S. EPA Identification Number must renotify to identify their used oil transporter activities.

* * * * *

29. In § 279.42(b)(1), revise the phrase "To obtain EPA Form 8700–12" to read "To obtain ordering information for EPA Form 8700–12".

30. Section 279.43 is amended by revising paragraph (b) to read as follows:

§ 279.43 Used oil transportation.

* * * * *

(b) *DOT Requirements.* Used oil transporters must comply with all applicable requirements under the U.S. Department of Transportation regulations in 49 CFR parts 171 through 180. Persons transporting used oil that meets the definition of a hazardous material in 49 CFR 171.8 must comply with all applicable regulations in 49 CFR parts 171 through 180.

* * * * *

§ 279.45 [Amended]

31. Section 279.45 is amended by removing the first sentence and revising

the word "generators" in the third sentence to read "transporters".

32. In § 279.45 add paragraph (d)(1)(iii) and revise the period at the end of paragraph (d)(1)(ii) to read "; or" as follows:

§ 279.45 Used oil storage at transfer facilities.

(d) * * *
(1) * * *
(iii) An equivalent secondary containment system.
* * * * *

§ 279.51 [Amended]

33. Paragraph (a) of § 279.51 is revised to read as follows:

§ 279.51 Notification.

(a) Identification numbers. Used oil processors/rerefiners that have previously notified EPA of hazardous waste and other used oil management activities and obtained a U.S. EPA Identification Number must renotify to identify their used oil processors/rerefiners activities.
* * * * *

§ 279.52 [Amended]

34. In § 279.52(b)(6)(viii)(C) revise the phrase "paragraph (h) of this section" to read "paragraphs (b)(6)(viii) (A) and (B) of this section.".

§ 279.54 [Amended]

35. In § 279.54, remove the first sentence and revise the word "generators" in the third sentence to read "processors/re-refiners".

36. In § 279.54(a) remove the words "or process".

37. Section 279.54 is amended by adding paragraph (c)(1)(iii) and by revising the period after paragraph (c)(1)(ii) to read "; or" as follows:

§ 279.54 Used oil management.

* * * * *
(c) * * *
(1) * * *
(iii) An equivalent secondary containment system.
* * * * *

§ 279.60 [Amended]

38. In § 279.60 (b)(1) revise "this subpart" to read "with subpart"..

§ 279.62 [Amended]

39. In § 279.62 paragraph (a)(1) is revised to read as follows:

§ 279.62 Notification.

* * * * *

(a) Used oil burners that have not previously notified EPA of their used oil burning activities must notify EPA to identify their used oil burning activities. Even if a burner has previously notified EPA of hazardous waste management activities under section 3010 of RCRA and obtained an identification number, the used oil burner must renotify to identify used oil burning activities.
* * * * *

§ 279.64 [Amended]

40. Section 279.64 is amended by removing the first sentence of this section and revising the word "generators" in the third sentence to read "burners".

§ 279.70 [Amended]

41. In § 279.70(a), revise the word "section" to read "subpart."

§ 279.72 [Amended]

42. In § 279.72(a), remove the last sentence.

§ 279.73 [Amended]

43. In § 279.73(a), revise "this section" to read "this subpart."

44. In § 279.73 paragraph (a) is revised to read as follows:

§ 279.73 Notification.

(a) Used oil fuel marketers that have not previously notified EPA of their used oil fuel marketing activities must notify EPA to identify these used oil fuel marketing activities. Even if a used oil fuel marketer has previously notified EPA of hazardous waste management activities under section 3010 of RCRA and obtained an identification number, the used oil fuel marketer must renotify to identify used oil fuel marketing activities.
* * * * *

§ 279.74 [Amended]

45. In the first sentence of § 279.74(a), revise the word "generator" to read "marketer."

[FR Doc. 93–10212 Filed 4–30–93; 8:45 am]
BILLING CODE 6560–50–P

View Record Detail

Faxback 11783
9592.1993(06)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

October 7, 1993

Ms. Mary Anne Hunter
Environmental Coordinator
AVM, Gabriel, Maremont Exhaust
Arvin Industries, Inc.
1531 13th Street
Columbus, Indiana 47201

Dear Ms. Hunter:

Thank you for your letter dated November 3, 1992, requesting clarification of the September 10, 1992, Recycled Used Oil Management Standards. Specifically, you asked for clarification of the used oil processing standards as they apply to coolant recycling and oil/water separation activities and for clarification of used oil transporter standards as they apply to transport of metal scrap containing small quantities of oil.

Regarding the applicability of the processor standards, EPA is aware that the term "processor," as defined in the used oil management standards, can be broadly construed to include a number of basic on-site recycling activities that the Agency did not necessarily intend to cover (e.g., coolant recycling and oil/water separation).

EPA intended to include as processing only those used oil filtering and/or separation activities whose primary purpose is to produce used oil or to make it more amenable for the production of used oil derived products. Under this interpretation, neither the coolant recycling or the oil/water separation activities referred to in your letter would be considered used oil processing because, in these cases, the filtering and separation activities are incidental or ancillary to the normal manufacturing process, i.e., used oil processing is not their primary purpose. The primary purpose of the oil/water separation activity described in your letter, for example, would be to remove used oil from wastewater to make the wastewater acceptable for discharge.

Although EPA believes that the current definition of

"processor" can be properly read not to encompass oil/water separation or coolant recycling performed on-site at an industrial facility, we are, nonetheless, currently considering amendments to the used oil regulations to clarify the Agency's intent to exclude activities such as these from the requirements for used oil processors.

You also asked for clarification regarding the applicability of the used oil transporter requirements to metal scrap haulers. Generally, under section 279.10(c), materials containing or otherwise contaminated with used oil are regulated as used oil until the used oil is removed from the material. However, as clarified in the May 23, 1993, Technical Amendments and Corrections to the Final Rule, materials containing or otherwise contaminated with used oil, from which the used oil has been properly drained or removed to the extent possible such that no visible signs of free-flowing oil remain in or on the material are not considered used oil unless they are to be burned for energy recovery (58 FR 26420). Therefore, if the scrap referred to in your letter meets the "no free flowing oil" standard described in the May 23, 1993, technical correction notice at 58 FR 26420, it would not be considered used oil subject to the transporter standards. However, the used oil removed from the metal would be covered under the used oil management standards.

I hope that this addresses your concerns. If you have other questions regarding the used oil management standards, contact Eydie Pines at (202) 260-3509.

Sincerely,
Jeffery D. Denit
Acting Director
Office of Solid Waste

United States Environmental Protection Agency | Solid Waste and Emergency Response (5305W) | EPA530-R-97-049 PB98-108 046 November 1997

RCRA, Superfund & EPCRA Hotline Training Module

Introduction to:

Containers
(40 CFR Parts 264/265, Subpart I; §261.7)

Updated July 1997

3. REGULATORY SUMMARY OF THE EMPTY CONTAINER REQUIREMENTS

The regulations at §261.7 define when hazardous waste residue in an empty container is exempt from regulation. These regulations set out the requirements for rendering a container or inner liner "empty." To distinguish between the usual meaning of the word "empty" and the strict regulatory definition, the phrase "RCRA empty" is sometimes used. Any hazardous waste remaining in either a RCRA empty container or inner liner is not subject to regulation under RCRA Subtitle C. EPA promulgated these regulations to give guidance to owners/
operators on how to empty their containers so that the containers are no longer subject to regulation, even if some residues remain in the container. Therefore, these regulations allow an owner/operator to reuse containers or inner liners meeting the provisions of §261.7 since the container is no longer considered to hold hazardous waste.

3.1 REGULATORY STANDARDS

Throughout this section, there will be references to the term "inner liner." This term refers to a continuous layer of material placed inside a tank or container which protects the construction materials of the container from contact with the contained waste or reagents used to treat the waste (§260.10). The following is a summary of the standards for rendering a container or inner liner RCRA empty.

GASES

Containers holding compressed gases that are hazardous wastes are considered empty when the pressure in the container approaches atmospheric pressure (§261.7(b)(2)).

ACUTELY HAZARDOUS WASTE

A container or inner liner of a container holding acutely hazardous waste (i.e., all
P-listed wastes and other hazardous wastes with the designated hazard code H) is empty when one of the following conditions is met:

- The container has an inner liner which prevents contact with the container and the liner is removed (§261.7(b)(3)(iii))

or

- The container has been triple rinsed with a solvent appropriate for removing the acutely hazardous waste (§261.7(b)(3)(i))

or

- When triple rinsing is inappropriate, an alternate method is used (§261.7(b)(3)(ii)).

To date, EPA has not defined triple rinsing in the regulations or in interpretative guidance. The rinsate is considered acutely hazardous waste according to the mixture rule; however, the act of triple rinsing is not considered treatment (45 FR 78528; November 25, 1980).

OTHER HAZARDOUS WASTE

A container or inner liner removed from a container holding nonacute hazardous waste as identified in Part 261, Subparts C and D, is empty when:

- All wastes have been removed using practices commonly employed industry-wide to remove wastes from containers or liners, such as pouring, pumping, aspirating, and draining (§261.7(b)(1)(i)) **and** no more than 2.5 cm (1 inch) of material remains in the container or liner (§261.7(b)(1)(ii))

or

- No more than 3 percent by weight of the container remains for containers with a capacity of 110 gallons or less, and no more than 0.3 percent by weight remains for containers with a capacity greater than 110 gallons (§261.7(b)(1)(iii)).

Common emptying methods might remove the liquid phase of the waste; however, solids or semisolids might adhere to the sides of the container. The definition of empty container therefore states that in addition to emptying the container using common practices, no more than 2.5 cm (1 in) of material may remain in the container for it to be considered empty. If common practices are not used to empty the container, then the weight determination must be used.

RESIDUES FROM EMPTY CONTAINERS

Residues remaining in a RCRA empty container are exempt from Subtitle C regulation. Likewise, residues removed from an empty container (i.e., removed after the container meets the regulatory definition of empty) are also exempt from Subtitle C requirements, including the requirements for determining hazardous waste characteristics. In contrast, residues removed from a container that is not RCRA empty or that result from rendering a container empty are fully subject to Subtitle C.

SECTION III:

ISIS 1987
Update on Drum Recycling

ISIS/NARI, Inc.
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The Institute of Scrap Iron and Steel, Inc. and the National Association of Recycling Industries, Inc. merged on June 9, 1987

September 8, 1987

UP-DATE ON DRUM RECYCLING

Over the past months, ISRI staff and counsel have engaged in discussions with representatives of the National Barrel and Drum Association (NABADA), an organization representing drum reconditioners nationwide, concerning the development of appropriate guidance to scrap processors who elect to handle obsolete containers. This effort was undertaken in response to the safety and environmental threats posed to processors by steel drums which have been used to transport products that are considered "hazardous wastes" or "hazardous substances." Recognizing that properly cleaned and prepared containers could provide a dependable and useful source of metal scrap, NABADA and ISRI have sought to develop recommended criteria and standards which would enable processors to receive and process empty drums with minimal risk.

Based upon information provided by NABADA, it appears that many companies in the drum reconditioning industry (and possibly some outside it) are capable of properly preparing containers for scrap. ISRI recommends that you limit your acceptance of steel drums to those that have been prepared in accordance with one of the following two procedures. NOTE: If a drum has held any acutely hazardous waste, as defined by federal EPA regulations, it must be triple-rinsed with an appropriate solvent before or during processing under either of these procedures.

Subject to this requirement, the choice of the alternative procedures will be determined by the reconditioner based upon the character of the prior residues, the equipment available to the reconditioner, and your preference.

METHOD 1. The container interior and exterior are cleaned, using an effective cleaning agent, and purged of all foreign matter and prior residues, including labels and decorative coatings, and the container is mechanically or hydraulically crushed and/or shredded.

METHOD 2. The container interior and exterior are thermally neutralized in a drum reclamation furnace, thereby removing all foreign matter and prior residues, including labels and decorative coatings, and the container is mechanically or hydraulically crushed and/or shredded.

In addition to specifying that drums be prepared in accordance with one of the foregoing methods (and the requirement for triple-rinsing where they contained an acutely hazardous waste), the contract of sale between you and the reconditioner should include the following warranty:

"Notwithstanding any other warranty or limitation of warranty herein, Seller warrants that to the best of his knowledge, based upon reasonable inquiry, the metal scrap to be delivered under this contract of sale does not contain any 'hazardous substance,' as that term is defined in Sec. 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601(14), as amended, except those 'hazardous substances' which are integral constituents of the metallic fraction of the scrap metal. Seller will indemnify and hold Buyer harmless from any and all claims, demands and liabilities, including reasonable attorney's fees, to the extent resulting in whole or in part from a breach of the foregoing warranty. Buyer hereby agrees that it will not assert any claim for contribution or indemnification against Seller under any statute or common law in connection with any claim against Buyer arising from the presence of a hazardous substance in Buyer's products or wastes or on Buyer's land except as may have resulted in whole or in part from a breach of the foregoing warranty."

Except for the last sentence, this is substantially identical to warranty language already in use in many metal scrap contracts. The last sentence would obligate the processor to refrain from suing the drum reconditioner for contribution to or indemnification of the processor's cleanup costs if (but only if) the material delivered by the reconditioner conformed to the warranty, i.e., contained no hazardous substances. This provision would in no way detract from the processor's right to bring suit under the warranty against the reconditioner if cleanup costs result in whole or in part from delivery of non-conforming, contaminated drums, and to recover cleanup costs and associated expenses.

NABADA members' readiness to provide this type of warranty protection to purchasing processors indicates a high degree of confidence in the reconditioning industry's ability to deliver containers which are both legally and factually empty, and contain no releasable hazardous substances. ISRI commends the drum reconditioning industry for its recognition of the potential hazards and liabilities created by so-called "empty containers" in scrap processing facilities. Through joint industry efforts, processors' current uncertainty about acceptance of this material can be significantly reduced.

Institute of Scrap Recycling Industries, Inc.

Superfund Guidance

Volume Four

February 9, 2000

Arranging for Recycling:

Transactions Involving Copper and Brass

The following document provides historical statistics and documentation illustrating the use of copper and brass scrap in the manufacture of copper-bearing materials. This document has been prepared to assist members in documenting the requirements listed below.

This document is provided for informational purposes only and does not constitute legal advice. Accordingly, members with questions regarding any aspect of these rules should contact their legal counsel.

Executive Summary:

On Nov. 29, 1999, President Clinton signed into law the Superfund Recycling Equity Act. This law clarifies Superfund to state that recycling is not disposal, and shipping for recycling is not arranging for disposal. As a result, recyclers may no longer be held responsible for cleaning up a contaminated site when the site's owner or operator caused the contamination. This necessary clarification removes an impediment to reaching America's recycling goals while saving many recycling businesses.

The new law builds a test to determine what are recycling transactions that should be encouraged under the legislation and what recycling transactions are really treatment or disposal arrangements cloaked in the mantle of recycling.

For past and future transactions, a recycler must be able to demonstrate all of the following:

1) Recyclable material met a commercial specification. {127(c)(1)}

2) A market existed for the recyclable material involved in the transaction. {127(c)(2)}

3) A substantial portion of the recyclable material was made available for use as a feedstock for the manufacture of a new saleable product. {127(c)(3)}

4) The recyclable material could have been a replacement or substitute for a virgin material, or the product to be made from the recyclable material could have been a replacement or substitute for a product made, in whole or in part, from a virgin raw material. {127(c)(4)}

General Information

Recycling, a significant factor in the supply of many of the key metals used in our society, provides environmental benefits in terms of energy savings, reduced volumes of waste, and reduced emissions associated with energy savings. The reusable nature of metals contributes to the sustainability of their use.

By precentage, copper is recycled more than any other engineering metal[1].

The U.S. copper industry relies heavily on scrap copper as a raw material. Substantial reserves of primary copper and extensive use of scrap both contribute to the self sufficiency of the United States and therefore, to the reliability of supply of copper to manufacturing industries[1]. As such, secondary copper is an extremely important copper source for both refineries and brass mills.

While terminology may vary, purchased copper scrap is generally categorized as follows: new scrap or manufactured scrap, which is generated during the fabrication of copper products, and old scrap, which consists of wornout, discarded or obsolete copper products. Scrap that is recycled within the generating plant (i.e. not sold) is called runaround or home scrap.

The scrap recycling industry has the primary role in the accumulation, grading and distribution of copper and brass scrap. As highlighted above, the basic sources of copper and brass scrap can include[2]:

A) New industrial scrap from various manufacturing operations
- scrap stampings, turnings, borings and spinnings
- shavings, reject materials
- skimmings, slag, drosses, ash, grindings

B) Obsolete scrap from:
- telephone, rail and power utility dismantling operations
- home, farm and industry
  - *old copper tubs, boilers, hot water heaters, appliances, wire, valves*
  - *scrap auto parts*
- repair and rebuilding of electrical motors and generators
- military bases

Additional sources are described in the article entitled, 'The Copper Scrap Puzzle' which was published in the January/February 1990 edition of Scrap Magazine. (*see Sources*)

Brass is basically an "alloy" (mixture) of copper and zinc, with other elements added for special uses. The color and properties of brass vary with its composition. When the alloy contains approximately 65% copper, it has a golden yellow color and is known as yellow brass, when it contains higher copper content, it has a reddish copper color.

To obtain special properties, other elements such as lead, tin, or nickel are added to the copper-zinc alloy. For example, lead is added to improve machinability. This alloy is referred to as 'leaded brass'. Brass containing lead that can be easily machined is often used in making precision equipment. Nickel may also be added to obtain a silvery white color that makes the alloy a more suitable base for silver plating. Silver plated flatware and hollowware often have a brass base. Bronze is an alloy of copper, tin and zinc. The diverse and heterogeneous composition of the scrap materials purchased in no way detracts from the quality of the end product produced. In point of fact, copper produced from scrap is a perfect substitute for primary refined copper and is used to make wire, brass and other copper products[3].

Commercial Specifications {127(c)(1)}

Under section 127(c)(1) of the new law, a recycler must be able to demonstrate that the recyclable material met a commercial specification at the time of the transaction. The specification can include those published by trade associations such as ISRI, or other historically or widely utilized specifications.

ISRI's Scrap Specifications Circular (1998) contains approximately 40 different guidelines for copper and copper alloy scrap. These specifications can be downloaded from the following site: www.isri.org.

Often, recyclers will use one of the following widely recognized broad guidelines to describe their recyclable commodity:

No. 1 Copper
No. 2 Copper
Light Copper
Radiators
Refinery Brass
Copper-Bearing Materials
Hard Brass
Red Brass
Yellow Brass
Spigots, cocks & faucets

Or, each consumer will develop his or her own set of specifications based upon the individual facility's requirements. This may be necessary because the consumer has specific equipment, processes or products unique to the facility.

The specification, whether broad or specific, will often be based on the copper content or physical nature of the material. Most of the terminology used in the scrap business defines the origin, use, composition, or grade of the scrap[4].

A specification may be as specific as a term such as 'drove' (ISRI specification term for copper bearing scrap) or as broad as 'radiators'. Specific terminology aside, at the time of the transaction, the consumer and the recycler agree to the sale of a specific material. The agreement may be memorialized in a purchase order, sales agreement, invoice, or in another fashion. By entering into the deal and subsequently accepting the material shipped by the recycler, the consumer confirms that the recyclable material met the desired specification. Therefore, one can reference the terms of the agreement as confirmation the recyclable material met (meets) a commercial specification.

Copper and copper alloy scrap compose a significant share of the world's supply. In the United States, about 44% of total annual copper consumption was from copper in old and purchased new scrap.

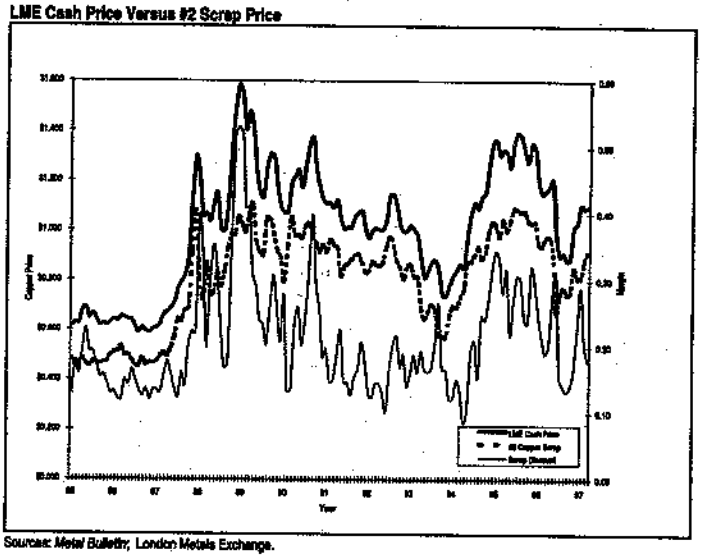
Source: U.S. Geological Survey

Established Markets {127(c)(2)}

To be afforded liability relief, a recycler must be able to demonstrate under Section 127(c)(2) that a market existed for the recyclable material. Evidence of a market can include, but is not limited to, a third party published price (including a negative price), a market with more than one buyer or seller for which there is a documentable price, and a history of trade in the recyclable material.

Copper is freely traded on commodity future exchanges located in London (the London Metal Exchange) and New York City (Commodity Exchange, Inc. i.e., Comex), and is therefore subject to periods of price volatility unrelated to supply-and-demand fundamentals. Additionally, domestic producers maintain a published list of prices for cathodes which change with market conditions. Domestic scrap prices are usually keyed to Comex prices. As evidence, LME, Comex, and scrap prices have exhibited a high degree of correlation over time. (*see chart*)

LME Cash Price Versus #2 Scrap Price



Sources: *Metal Bulletin*; London Metals Exchange.

According to the U.S. Geological Survey (USGS), while copper scrap prices correlate to the price of refined copper, the price paid for scrap at each level of processing must be sufficiently discounted to allow for all subsequent processing costs. Thus, a scrap collector who must perform such functions as sorting, shipping, chopping, baling, etc. will pay less for scrap than does the consumer of the scrap[5].

The history of trade in scrap has been memorialized by the American Metal Market (AMM). AMM has tracked the price of scrap for decades. Attachment I is a chart of selected copper scrap prices dating from 1970. This chart tracks data collected by AMM and can be found in the USGS Statistical Compendium on Copper (*see Other Sources*).

Market fluctuations and prices are tracked not only by AMM, but the USGS as well. USGS traditionally includes a discussion on copper scrap prices in its publications on metals recycling. The following is an excerpt from a 1997 USGS Report. A copy of the entire document can be found in Attachment II:

"Copper scrap prices trended upward during the first half of 1997, following the upward trend in refined copper prices. In the first half of the year, the New York average buying price for No. 1 scrap at brass mills, and No. 2 scrap at refiners, averaged $1.08 and $.090 per pound, respectively. In July, scrap prices followed refined prices in a downward spiral; the No.1 and No.2 scrap prices averaged $0.91 and $0.74, respectively, during the second half of the year. The margin between refined copper and No.2 scrap averaged $0.26 per pound during the first half of the year and declined with lower prices, averaging $0.24 per pound during the second half of the year. In December, when No.2 scrap averaged only $0.62 per pound, the margin had shrunk to $0.21 per pound."

"Like the secondary aluminum industry, these producers [the secondary copper industry] buy the scrap they recycle on the open market, in addition to using scrap generated in their own downstream productions. The secondary copper industry is concentrated in Georgia, South Carolina, Illinois, and Missouri."

Source: U.S. EPA Sector Notebooks, Profile of the Nonferrous Metals Industry

Feedstock in Manufacturing {127(c)(3)(4)}

In addition to the two criteria reviewed previously, the new law requires a facility to demonstrate the following to be afforded relief from Superfund liability: 1) that a substantial portion of the recyclable material was made available for use as a feedstock for the manufacture of a new saleable product; and 2) the recyclable material could have been a replacement or substitute for a virgin material, or the product to be made from the recyclable material could have been a replacement or substitute for a product made, in whole or in part, from a virgin raw material.

According to the legislative history of the law, it is not necessary that the person who arranged for recycling document that a substantial portion of the recyclable material was actually used to make a new product. Instead, the person need only be prepared to demonstrate that it is common practice for recyclable materials that he or she handles to be made available for use in the manufacture of a new saleable product. For example, if recyclable stainless steel is sold to a stainless steel smelter, it is presumptive that recycling will occur. Likewise, it is the intent of the second requirement that the person be able to demonstrate the general use for which the feedstock material was utilized. The law does not intend that the person show that a specific unit was incorporated into a new product.

Accordingly, the following documentation and charts illustrate the common practice of using copper and copper alloy scrap in the manufacture of new products as well as the capacity of scrap to compete with virgin raw material and/or products.

Copper is one of the most extensively recycled of the common metals. Figure 3 portrays the complexities of the flow of copper scrap.

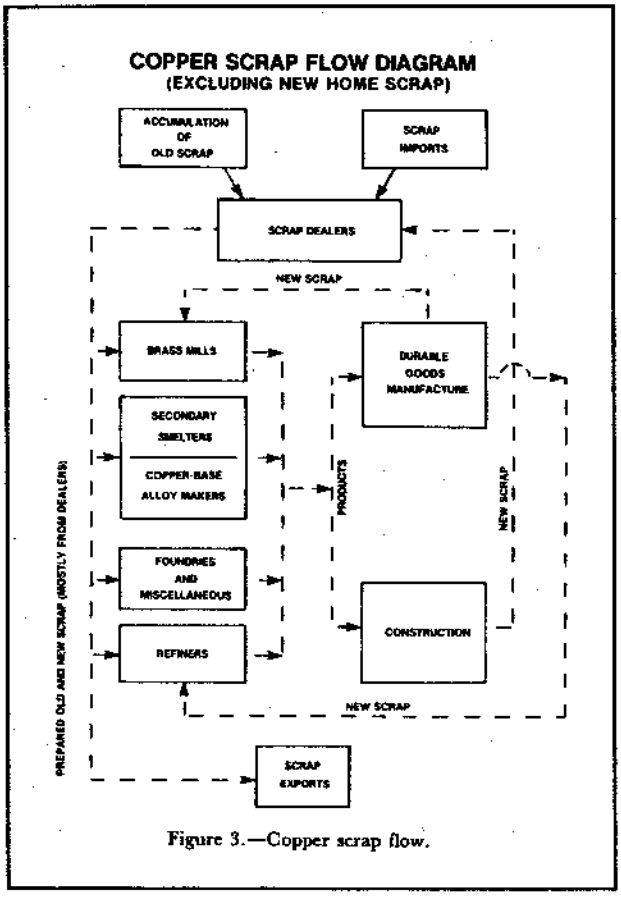


Figure 3.—Copper scrap flow.

Source: Bureau of Mines

Feedstock, Cont.

Copper is consumed, both as virgin/refined copper and as scrap, at about 35 brass mills, 15 wire rod mills, and 600 foundries, chemical plants, and other miscellaneous consumers.

In 1998, 80% of the copper contained in new scrap was consumed at brass mills. Of the total copper recovered from scrap, copper smelters and refiners recovered 23%; ingot makers, 10%; brass mills, 63%; and miscellaneous manufacturers, foundries, and chemical plants, 4%[6].

The USGS, and formerly the Bureau of Mines, has tracked the consumption of scrap by consuming facilities for many years. Below is an example of the various types of scrap consumed by the relevant industries. While this data is only for two years, it should be noted these trends have existed for several decades.

TABLE 11
CONSUMPTION AND YEAR ENDING STOCKS OF COPPER-BASE SCRAP 1/

(Metric tons, gross weight)

Scrap type and processor	1994		1995	
	Consumption	Stocks	Consumption	Stocks
No. 1 wire and heavy:				
Smelters, refiners and ingot makers	151,000	7,700 r/	161,000	9,080
Brass and wire-rod mills	329,000	NA	375,000	NA
Foundries and miscellaneous manufacturers	33,900	NA	36,000	NA
No. 2 mixed heavy and light:				
Smelters, refiners and ingot makers	311,000	10,900 r/	225,000	5,880
Brass and wire-rod mills	46,200	NA	33,400	NA
Foundries and miscellaneous manufacturers	4,150 r/	NA	3,690	NA
Total unalloyed scrap:				
Smelters, refiners and ingot makers	462,000	18,600 r/	386,000	15,000
Brass and wire-rod mills	375,000	13,900	408,000	11,600
Foundries and miscellaneous manufacturers	38,100	3,320	39,700	2,730
Red brass: 2/				
Smelters, refiners and ingot makers	40,700	2,600 r/	58,800	2,440
Brass mills	8,340	NA	7,410	NA
Foundries and miscellaneous manufacturers	13,300	NA	15,700	NA
Leaded yellow brass:				
Smelters, refiners and ingot makers	25,400	1,380 r/	26,100	1,270
Brass mills	354,000	NA	341,000	NA
Foundries and miscellaneous manufacturers	1,850	NA	1,520	NA
Yellow and low brass:				
All plants	73,600	1,010 r/	55,600	723
Cartridge cases and brass:				
All plants	61,100	NA	49,900	NA
Auto radiators:				
Smelters, refiners and ingot makers	64,700	1,430 r/	73,000	1,860
Foundries and miscellaneous manufacturers	6,270	NA	6,910	NA
Bronzes:				
Smelters, refiners and ingot makers	12,500	846 r/	11,700	821
Foundries and miscellaneous manufacturers	10,700	NA	13,300	NA
Nickel-copper alloys:				
All plants	21,900	291 r/	20,500	442
Low grade and residues:				
Smelters, refiners and ingot makers	81,400 r/	4,690 r/	92,600	2,460
Other alloy scrap: 3/				
Smelters, refiners and ingot makers	50,300	2,220 r/	39,700	1,600
Brass mills and miscellaneous manufacturers	6,880 r/	NA	6,140	NA
Total alloyed scrap:				
Smelters, refiners and ingot makers	317,000 r/	14,500 r/	310,000	11,600
Brass mills	488,000	34,700	478,000	29,900
Foundries and miscellaneous manufacturers	29,000	3,340	31,800	4,030
Total scrap:				
Smelters, refiners and ingot makers	779,000	33,100 r/	695,000	26,600
Brass and wire-rod mills	862,000	48,600	886,000	41,400
Foundries and miscellaneous manufacturers	67,000 r/	6,660	71,500	6,760

r/ Revised. NA Not available.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes composition turnings, silicon bronze, railroad car boxes, cocks and faucets, gilding metal, and commercial bronze.
3/ Includes refinery brass, beryllium copper, and aluminum bronze.

Source: USGS

Feedstock, Cont.

The copper industry in the United States has two main segments: producers-mining, smelting, refining companies; and fabricators-wire mills, brass mills, foundries, powder plants. The end products of the producers, the most important of which are refined cathode copper and wire rod, are sold almost entirely to the copper fabricators. The end products of the fabricators-copper and copper alloy mill and foundry products-consist of electrical wire, strip, sheet, plate, rod, bar, mechanical wire, tube, forgings, extrusions, castings, and powder. These products are sold to a wide variety of users: chiefly the construction industry, manufacturing industries, and the government. Certain mill products, chiefly wire, cable, and most tubular products, are used without further metalworking. On the other hand, most flat-rolled products, rod, bar, mechanical wire, forgings, castings and powder go through multiple forming, machining, finishing, and assembling operations before emerging as finished products[7].

As illustrated on the chart found on the previous page, the type of scrap processed varies by type of consumer.

The recycling of copper can involve the relatively simple re-melting and casting of scrap metal, or the more complicated smelting and refining of scrap into electrolytic cathode. The process used depends on the purity of the scrap feed and the application in mind. High purity new scrap (see definitions on page 2) can often be simply re-melted by a fabricator and reused. In addition, new scrap can be used as an additional feed by primary copper smelters. Secondary copper producers often operate processes which recycle a mixture of old and new scrap[8]. Furthermore, secondary copper producers (smelters) traditionally will use a mix of primary copper (virgin material) and scrap in their process. The following data shows the consumption rates of both sources of copper for smelters.

TABLE 1, Item 8. Smelter production of copper in the United States

	Copper Content, thousands of short tons						
	1992	1993	1994	1995	1996	1997	1998
Smelter Production - Domestic & Foreign Ore	1,301.1	1,399.9	1,444.0	1,392.6	1,434.3	1,593.4r	1,659.0
Smelter Production - Scrap	433.8	452.0	440.9	405.1	373.8	314.0r	230.0
TOTAL SMELTER PRODUCTION	1,734.9	1,851.9	1,884.9	1,797.7	1,808.1	1,907.4r	1,889.0

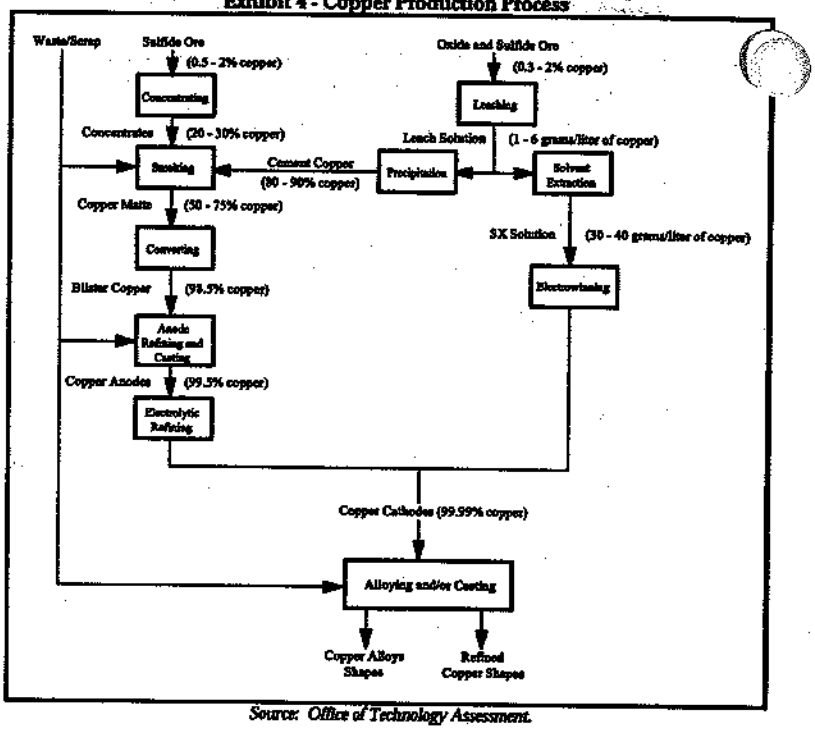
Source: CDA

Primary smelters process copper concentrate, usually from integrated mining operations. Secondary smelters process copper scrap. A few primary smelters us a small amount of No. 1 or No. 2 copper scrap along with some residues, but this represents less than 5% of the scrap used by smelters and refineries. Secondary smelters use a wide variety of materials ranging from very low grade scrap (with a copper content of less than 15%), sludges and residues to No. 2 scrap, radiators, and red brasses. Almost all of the low grade scrap and copper radiators recycled in the United States, and a large portion of other old scrap, goes to secondary smelters[9]. For a primer on the smelting process, The May 1994 issue of the Metal Bulletin Monthly is a useful resource. (*see Sources*)

The foundry industry basically uses the same products as the secondary smelters but in a more upgraded form. Essentially, the foundry industry is using scrap as a substitute for copper, brass and bronze ingots. By upgrading the right kind of scrap, one entire cycle is skipped in the recycling process and scrap becomes a substitute for a manufactured product[12].

Feedstock, Cont.

Exhibit 4 - Copper Production Process



Source: Office of Technology Assessment.

A few of the primary electrolytic refineries melt No. 2 scrap in fire refining furnaces before anode casting, and some also use No.1 scrap when casting anodes or shapes as the chart on the right illustrates.

Most of the secondary refineries use No.1, No. 2 and light copper scrap as well as blister* copper from both primary and secondary smelters. (*molten copper is called "blister" copper because if allowed to solidify at this point, it will have a bumpy surface due to the presence of gaseous oxygen and sulfur.) The amount of scrap processed by secondary refineries depends on conditions in both the scrap and the blister markets. When copper prices are high, slightly more No.2 and light copper scrap is available, but this material is usually recycled regardless of price. When blister supplies are tight, many secondary and some primary refineries increase their use of scrap. However metallurgical requirements limit the amount of scrap that can be used in some operations.

Most wire rod mills use very little scrap as direct feed. However, advances in continuous-cast rod technology that allow better control throughout the process, together with improvements in scrap sorting and wire chopping operations, have enabled some wire rod producers to use very clean, high-grade scrap in casting rod for heavy-gauge products and less demanding applications (i.e. building wire as opposed to magnets and electronic wire).

"According to the Copper Development Association, brass mill consumption of scrap has increased from 32 percent of its total raw material in 1961 to 40 percent in 1971, 48 percent in 1981, and more than 50 percent in 1998."

Brass mills are the main consumers of No. 1 copper scrap. Within the brass mill sector, No. 1 copper scrap is sold in two markets, loosely referred to as the tube mill market and the brass mill market. Generally, about one-third of the No.1 scrap purchased by brass and tube mills is bare-bright wire and choppings. Bare-bright refers to the physical condition of the scrap: it is usually new scrap from manufacturing operations and has a copper content of 99.8 to 99.9%. Although bare-bright scrap competes to some extent with cathode (cathodes are the primary product of the primary copper producer and contain 99.99+ percent copper), it could not replace primary copper, as all mills need a minimum amount of refined material to ensure quality. Scrap purchases by brass mills are based primarily on activity levels at the mills and the relative price of cathode and No. 1 scrap, rather than on overall copper prices[10]. One interesting trend in the copper and brass sector is that U.S. brass mills are using a higher percentage of scrap in their raw material mix than ever before. According to the Copper Development Association, brass mill consumption of scrap has increased from 32 percent of its total raw material in 1961 to 40 percent in 1971, 48 percent in 1981, and more than 50 percent in 1998[11].

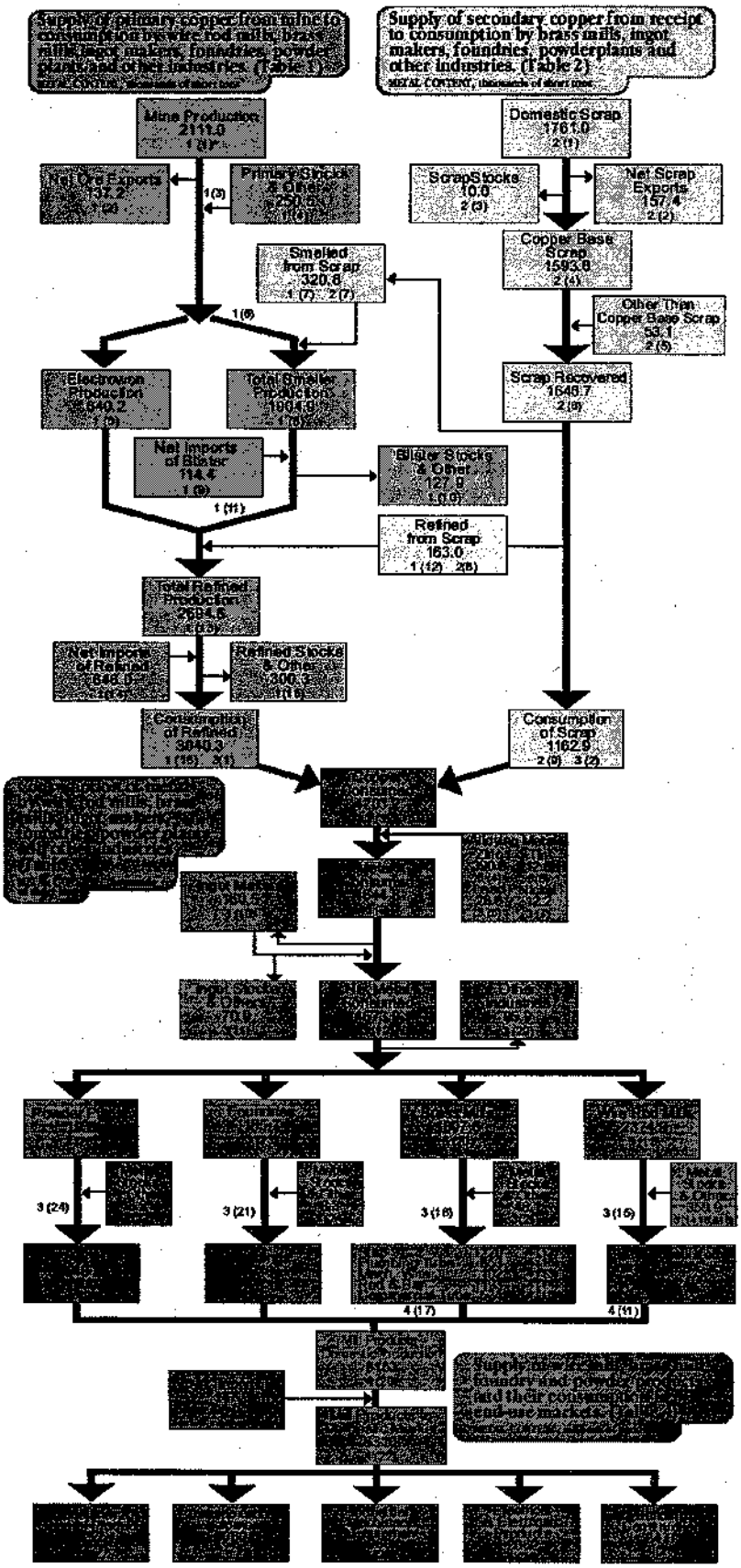
Specialty users are also buyers of selected scrap products. Steel mills will use copper in various prepared forms as an addition in certain grades of steel. Brass powder manufacturers use copper and brass scrap as a substitute for alloyed ingots[12].

Feedstock, Cont.

This flow chart illustrates the complexity and the variety of uses of scrap in the copper industry.

"Copper Supply and Consumption in the Untited States 1998"

Source: CDA



*1(1) Refers to table and item in report where data for 1991 through 1996 appear.

Resources

Sources:

[1] Metals Handbook: Ninth Edition (Ohio: American Society for Metals, 1979) 247

[2] Recycling Copper and Brass (New York: National Association of Recycling Industries, NARI, 1980) 3

[3] Recycling Copper and Brass 23

[4] Patricia Foley, "The Copper Scrap Puzzle - A Changing Market Picture" Scrap Processing and Recycling January/February 1990: 69

[5] "Recycling - Nonferrous Metals" Minerals Yearbook (U.S. Geological Survey, 1995) 3

[6] "Copper" Mineral Commodity Summaries (U.S. Geological Survey, January 1999) 2

[7] "Copper in the USA: Bright Future – Glorious Past", Copper Development Association, Inc. (CDA)

[8] "Secondary Copper" Metal Bulletin Monthly May 1994: 81

[9] Foley 70

[10] Foley 75

[11] Robert Garino, "PMX Grabs the Brass Ring" SCRAP March/April 1996: 156

[12] Recycling Copper and Brass 6

Other Sources:

Bureau of Mines Mineral Facts and Problems 1985 Edition

NARI Recycling Copper and Brass 1980

"A Little Copper Goes A Long Way" Scrap Processing and Recycling January/February 1990

"PMX Grabs the Brass Ring" SCRAP March/April 1996

"Copper - Just the Facts" SCRAP January/February 1996: 95

U.S. Geological Survey Statistical Compendium: COPPER 1998 (URL: http://minerals.er.usgs.gov/minerals/pubs/commodity/copper/stat/)

U.S. Geological Survey Mineral Commodity Summaries 1996 - 1999 (on-line)

U.S. Geological Survey Mineral Industry Surveys

U.S. Geological Survey Minerals Yearbook

U.S. Geological Survey Metal Prices in the United States through 1998

American Metal Market Metals Statistics 1999: Statistical Guide to North American Metals

U.S. EPA Profile of the Nonferrous Metals Industry (Sector Notebooks) 1995

Institute of Scrap Recycling Industries (www.isri.org)

Copper Development Association (www.copper.org)

International Copper Study Group (www.icsg.org)

International Copper Association

Table 9.--Selected U.S. copper scrap and ingot prices1/
(Cents per pound)

Period	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
NO.1 BRASS MILL BUYING PRICE, COPPER SCRAP																					
January---	65	43	47	NA	92	42	50	55	57	70	98	81	65	67	59	55	61	58	106	118	101
February--	67	45	48	NA	96	42	48	57	56	83	113	76	64	71	63	58	60	58	95	111	103
March-----	68	47	52	60	103	47	54	64	58	84	87	79	62	70	65	56	62	59	93	129	117
April-----	70	54	50	64	114	47	61	58	58	92	85	78	63	71	67	59	61	60	91	131	118
May-------	66	47	49	65	118	47	62	59	57	81	80	77	65	73	62	61	60	66	94	115	116
June------	58	49	48	69	90	44	61	53	57	81	78	76	51	69	59	56	60	67	100	107	112
July------	56	49	46	71	78	48	64	50	60	76	90	74	56	70	57	56	56	70	91	105	117
August----	55	48	46	82	70	50	61	46	63	85	89	77	54	70	56	57	55	75	89	115	113
September-	52	47	46	84	52	48	58	47	62	80	88	74	58	68	54	56	58	78	102	122	122
October---	48	46	46	88	51	47	49	49	64	82	87	71	60	63	52	56	57	84	116	127	115
November--	45	44	46	96	51	47	51	48	61	85	88	68	56	60	56	57	56	95	115	114	110
December--	43	44	46	88	44	47	53	52	65	88	77	66	57	61	55	59	57	112	119	100	107
Average-	58	47	48	77	80	46	56	53	60	82	88	75	59	68	58	57	58	73	101	116	112

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
NO. 2 REFINERS BUYING PRICE, COPPER SCRAP																					
January---	56	35	37	42	67	38	41	48	48	59	88	66	46	56	50	46	51	48	94	104	87
February--	58	37	39	45	71	40	41	50	46	71	97	65	46	60	51	47	51	48	78	98	88
March-----	60	42	42	52	95	44	46	54	47	76	73	68	44	59	55	47	53	50	82	108	96
April-----	61	46	41	55	102	43	52	50	49	78	68	69	42	62	56	49	51	49	79	111	102
May-------	56	41	40	55	96	41	52	48	50	70	68	67	42	64	52	49	50	54	79	100	101
June------	49	39	39	59	76	38	54	45	50	68	68	65	38	61	49	46	51	57	84	91	97
July------	48	40	38	60	65	42	58	41	50	66	77	64	36	62	47	47	47	62	80	89	100
August----	43	39	38	66	64	44	53	38	52	71	73	66	38	61	46	47	46	64	79	100	104
September-	43	38	38	68	48	42	49	38	53	74	72	63	38	57	44	47	48	68	88	106	102
October---	41	37	38	72	45	41	41	39	55	73	73	61	38	52	43	48	47	70	94	107	96
November--	38	35	38	77	44	40	42	39	54	75	72	60	39	49	46	48	47	83	98	97	93
December--	37	35	39	70	40	40	43	43	55	72	65	59	40	51	45	49	47	98	104	88	93
Average-	49	39	39	60	68	41	48	44	51	71	75	64	41	58	49	48	49	63	87	100	97

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
NO. 2 HEAVY COPPER SCRAP, DEALERS PRICE																					
January---	47	23	31	32	61	32	37	34	34	47	75	58	57	43	41	38	38	38	77	104	74
February--	47	25	32	36	66	31	38	36	36	59	82	56	57	47	41	38	40	38	68	96	69
March-----	50	28	35	43	73	34	40	42	36	65	70	57	54	52	44	38	40	38	64	99	78
April-----	52	32	35	44	76	34	42	41	40	69	60	60	54	52	45	38	40	40	63	101	87
May-------	48	29	34	45	74	31	44	40	39	63	58	58	53	54	43	38	40	41	70	105	87
June------	41	27	32	47	61	30	44	36	42	59	57	55	43	55	42	38	40	43	71	91	83
July------	38	28	30	47	51	33	47	35	41	58	65	53	47	55	39	38	40	45	70	84	83
August----	36	27	30	52	49	37	46	34	42	59	65	54	46	54	39	38	38	49	70	88	86
September-	33	27	30	59	41	38	44	33	43	62	64	53	48	52	38	38	38	50	72	105	92
October---	31	28	30	62	39	37	38	33	45	63	65	50	49	48	36	38	38	53	79	102	88
November--	27	29	29	68	35	36	35	33	45	62	66	48	49	43	35	38	38	55	84	96	84
December--	25	28	29	67	33	36	34	33	45	65	58	46	51	43	36	38	36	65	86	88	82
Average-	40	28	31	50	55	34	41	36	41	61	65	54	51	50	40	38	38	46	73	96	83

Period	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
YELLOW BRASS INGOT (405)																					
January---	49	40	40	44	65	57	54	57	59	66	80	77	73	64	70	70	71	71	84	101	114
February--	49	40	42	48	68	56	54	57	59	74	91	77	73	67	72	70	71	71	82	105	113
March-----	50	43	46	54	77	57	58	61	59	77	86	77	72	68	75	70	71	71	82	107	114
April-----	52	48	47	55	86	59	62	64	61	79	77	77	71	71	76	70	71	71	83	108	118
May-------	53	48	45	55	91	58	62	60	62	76	71	77	71	71	74	69	71	71	83	115	118
June------	51	46	41	55	85	56	62	58	62	74	70	77	70	73	74	71	71	71	84	115	118
July------	48	46	41	55	79	56	62	57	62	74	71	77	67	73	74	71	71	73	90	114	118
August----	44	46	41	55	74	57	63	54	62	74	75	77	66	73	74	71	71	73	90	113	121
September-	41	45	41	59	67	58	62	52	62	74	75	77	66	73	74	71	71	73	90	117	123
October---	41	44	41	61	61	56	57	52	63	76	75	75	66	71	74	71	71	76	94	117	123
November--	41	42	41	61	60	54	57	55	64	76	80	75	65	70	72	71	71	79	99	116	123
December--	41	40	41	65	59	54	57	55	64	76	78	73	63	70	70	71	71	84	100	115	123
Average-	47	44	42	56	73	57	59	57	62	75	77	76	69	70	73	71	71	74	88	112	119

1/Delivered U.S. destinations.

Source: American Metal Market.

COPPER

By Daniel L. Edelstein

Mine production of recoverable copper in the United States continued its decade-long upward trend, rising by about 1% to a record high level. However, as a result of a decline in the average price received for refined copper, the estimated value of domestic mine production remained unchanged at about $4.6 billion. While the United States maintained its position as the world's second largest mine producer of copper, accounting for about 17% of world production, its percentage share of global production continued to decline. Chile, where mine production increased by about 9% in 1997, and where it has increased by 65% since 1993, was the largest mine producer, increasing its share to more than 28% of world production. The United States retained its position as the largest producer and consumer of refined copper, accounting for 18% and 21% of world production and consumption, respectively. Domestic production and consumption of refined copper rose by about 5% and 7%, respectively, both reaching record-high levels.

Of the 36 mines operating in 10 States that produced reportable quantities of copper, the top 18 accounted for almost 99% of production. The principal mining States, in descending order, Arizona, Utah, New Mexico, Nevada, Montana, and Wisconsin, accounted for more than 99% of production. Mine capacity of 2.07 million metric tons was up by about 40,000 tons from the 1996 revised value, and capacity utilization rose to 93.5%.

During the year, 7 primary and 4 secondary smelters, 8 electrolytic and 6 fire refineries, and 14 electrowinning plants operated in the United States. With the exception of the startup of a new solvent extraction-electrowinning (SX-EW) operation, the operating status of these plants remained unchanged from that of 1996.

Electrowon production, which had increased significantly in the previous 2 years, rose by only about 2% and accounted for 30% and 24% of domestic mine production and refinery production, respectively. The conversion of old scrap to alloys and refined copper rose significantly during the year, reversing a 4-year downward trend, contributing 495,000 tons of copper to the market, and accounting for 17% of apparent industrial demand. High copper prices and strong demand during the first half of the year encouraged the recycling of copper.

Copper was consumed, as refined copper and as direct melt scrap, at about 35 brass mills, 15 wire-rod mills, and 600 foundries, chemical plants, and miscellaneous consumers. According to data compiled by the Copper Development Association Inc. (CDA), mill product shipments to the U.S. market, including net imports, rose to a record high level of 3.77 million tons (Copper Development Association Inc., 1998).

The net import reliance for refined copper, as a percentage of apparent consumption, remained unchanged at about 13%. Canada was the largest U.S. trading partner for unwrought copper, accounting for 46% of refined copper imports and of total imports of unwrought copper, and 24% of refined exports and 46% of total unwrought copper exports. Japan and Taiwan together accounted for an additional 48% of refined copper exports.

Copper was mined in about 50 countries, of which the top 2, Chile and the United States, accounted for 46%, and the top 10 for about 81% of the world total. The world reserves and reserve base for copper were estimated to be 340 million tons and 640 million tons, respectively. The United States had about 15% each of reserves and reserve base.

World copper inventories fluctuated during the first half of 1997, but, during the second half of the year, world reported stock levels began to climb, reversing the general downward trend that occurred over the 1994-96 period. Reported yearend global inventories peaked at over 1 million tons, up from 680,000 tons at yearend 1996. Copper prices during the first half of the year trended upward from the low levels established in the second half of 1996; the U.S. producer price averaged $1.16 per pound for the first 6 months of 1997. However, in July, with inventories on the rise and global expectations of increasing copper production, prices declined sharply; the U.S. producer price averaged only $0.83 per pound in December and $1.07 for the year.

Legislative and Government Programs

In November, Congress passed S. 1228, the "50 States Commemorative Coin Program Act," which authorized the minting of circulating commemorative 25-cent coins honoring each of the 50 States. Redesign of the quarter was to begin in 1999, with the issuance of 5 coins per year, commemorating 5 States, during each of the 10 years the program is to be in effect. The reverse sides of the coins are to be emblematic of the States, selected in the order in which the States either ratified the Constitution or were admitted to the Union. In section 4, to be referenced as the United States $1 coin Act of 1997," the bill also authorizes the U.S. Department of the Treasury to create a new gold-colored coin to replace the Susan B. Anthony dollar. Absent from the legislation is the requirement, sought by some legislators, to force the mandatory retirement of the $1 note, which proponents felt would result in substantial cost savings to the mint (Congressional Record, 1997a). It was expected that minting of the coins would add to the demand for copper through increased circulation of the dollar coin and collector interest in the commemorative quarters. The new quarters would have the same composition as the current quarters, 91.2% copper. At least one study estimated that an additional 3 billion quarters may be necessary to meet expected demand. Though not yet determined, the new gold-colored dollar was expected to have a composition similar to the quarters (Platt's Metals Week, 1997d).

In July, in accordance with the Clean Air Act, the U.S.

Environmental Protection Agency (EPA) signed a new national ambient air quality standard for particulate matter and ozone. The new particulate matter standard, first proposed in December 1996, which could have a significant impact on the mining and mineral-processing industries, provides increased protection against a wide range of particulate-matter-related health hazards. The new standard for particles that are 2.5 microns or smaller sets concentration limits of 15 micrograms per cubic meter as an annual mean and 65 micrograms per cubic meter as the 24-hour mean. The existing standard regulates particles that are 10 microns in size or smaller and sets an average annual concentration limit of 50 micrograms per cubic meter and an average daily limit of 150 micrograms per cubic meter. The new standards were expected to take effect between 2000 and 2002 (Platt's Metals Week, 1997e).

In 1989, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal came into force and has since been ratified by more than 100 countries, including the United States, although the latter has not passed legislation necessary to implement the convention. An international Technical Working Group met four times between September 1995 and February 1997 to consider which materials should be classified as hazardous and, hence, affected by the various bans. The group elected to include copper scrap, copper slags, and copper oxide mill scale in the B list, the list of materials not covered by the Basel Convention as hazardous and, thus, not subject to any export ban (Buchholtz, 1997). In February 1998, the Basel Convention held its Fourth Meeting of the Council of Parties in Kuching, Malaysia, and adopted the A list, wastes characterized as hazardous and therefore subject to regulation, and the B list, as developed by the Technical Working Group. However, material contained in list B is not precluded from regulation if it contains any of a core list of materials to be controlled to the extent that they exhibit hazardous characteristics (International Copper Study Group, 1998c).

Production

The more than decade-old upward trend in domestic mine production continued, with mine production in 1997 rising by about 1%. Increased production from the first full year of operation at the Robinson Mine in Nevada, startup of SX-EW production at the Silver Bell Mine in Nevada, and incremental expansion at several other mines, including the Morenci and Bagdad Mines in Arizona, was partially offset by the closure of two small mines in 1996 and the depletion of reserves and closure of the Flambeau Mine in Wisconsin during 1997.

Capacity utilization at domestic mines rose to a 93.5% as companies sought to reduce unit operating costs in anticipation of lower average copper prices and to keep integrated rod-mills supplied. As a result of the higher capacity utilization rates and the closure of several labor-intensive underground mines in 1995 and 1996, productivity at domestic mines in 1997, as calculated from employment data compiled by the Mine Health and Safety Administration, rose to 68 kilograms of copper per worker-hour, compared with 64 kilograms in 1995. Productivity has generally trended upward since 1989, when only 50 kilograms of copper per worker-hour was produced.

Primary smelter production, which rose 10% for the year, increased substantially during the second half of the year following a 6-week shut down of Kennecott's Utah smelter, beginning in April, for rebuilding of the flash converting furnace and installation of a new casting wheel. By yearend, monthly primary production from the 7 operating smelters was at or above the record high level set in 1973 when there were 15 primary smelters operating in the United States. Secondary smelter production declined 16%, continuing the downward trend that began with the closure of Southwire Co.'s Gaston, SC, secondary smelter in 1994. At the end of August, Franklin Smelting and Refining Co. in Philadelphia was closed indefinitely. Franklin had an estimated capacity of 15,000 tons of blister per year.

Total refined production rose by more than 4%, or about 100,000 tons. Primary refined, which accounted for about one-half of the increase, declined during the first half of the year owing to a shortage of anode, but rose sharply during the second half of the year, following the upward trend in primary smelter production. Production of electrowon copper, which had trended upward over the past 3 years, was essentially unchanged in 1997. Secondary production increased 11%.

Company Reviews.—ASARCO Incorporated's copper mine production, including its share of Southern Peru Copper Corp.'s (SPCC) production, declined from 1996's production by 17,000 tons, to 443,000 tons, owing to an almost 30,000-ton-drop in domestic concentrate production. Partially offsetting the drop in concentrate production were increases in domestic production from SX-EW and increases in Peruvian production. Production at the new SX-EW operations at the Silver Bell Mine in Arizona began in July and totaled almost 9,000 tons for the year. Though harder ore resulted in lower concentrator throughput and an overall 4,000-ton production decline at the Mission Complex, ore grades improved slightly owing to the first full year of production from the underground mine. An overland conveyor at Mission was completed in August; it is designed to transport 53 million tons of waste per year at a cost savings of $0.08 per ton of waste. Production at Ray Mine's Hayden concentrator declined by about 19,000 tons in 1997, owing to curtailments during the fourth quarter of 1996 and the first 5 months of 1997 in order to reduce concentrate inventories. Ray SX-EW increased 5% owing to the application of a new leach technology to low-grade sulfide material. Combined production from Asarco's Hayden and El Paso smelters was essentially unchanged at 300,000 tons, while total refinery output rose by 27,000 tons owing to increased SX-EW production and record-high production of 447,000 tons at the Amarillo Refinery (ASARCO Incorporated, 1998).

Cyprus Amax Minerals' total copper production rose 33% owing to the first full year of production from its 51% interest in the El Abra Mine in Chile and incremental expansions at its domestic operations. At the Bagdad Mine in Arizona, production rose 11,000 tons to 112,000 tons, owing to higher sulfide ore grades and improved recovery. However, leach production of 12,000 tons was down slightly owing to significantly reduced mining of leach ore that was nearing depletion. At the Miami Mine, a 100% heap leach operation, SX-EW production rose to 71,000 tons, up 5,000 tons from that of 1996. The electrolytic refinery at Miami produced 151,000 tons of refined copper, down 3% from the previous year, owing to lower anode production from

the associated smelter. Total production at the Sierrita Mine rose about 7,000 tons to 112,000 tons; production from SX-EW increased from 16,000 to 18,000 tons. Production at the Tohono Mine near Casa Grande, AZ, fell from 18,000 tons in 1996 to 12,000 tons in 1997 following cessation of mining in July, while the company evaluated the potential for a larger-scale mine-leach operation. SX-EW production was expected to continue at a lower rate from existing leach pads (Cyprus Amax Minerals Company, 1988a).

In September, Equatorial Mining NL of Australia exercised an option to purchase Cyprus Amax's Mineral Park Mine near Kingman, AZ, and its Tonopah copper resources in Nevada. Equatorial reportedly planned to double electrowon production at Mineral Park from the current level of about 2,500 metric tons per year. A feasibility study had been completed for developing an open pit and a 29,000-ton-per-day-of-ore heap-leach and SX-EW plant at Tonopah. Equitorial anticipated producing 26,000 tons of copper cathode per year at an average cash operating cost of $0.50 per pound of copper. The company estimated reserves to be 90.5 million tons of ore grading 0.33% copper. Development was expected to proceed once funding was secured for the $74 million project (Platt's Metals Week, 1997b).

Production at mines owned or controlled by Phelps Dodge Corp., including those in Chile, rose by 46,000 tons to 893,000 tons (Phelps Dodge's share of production was 737,000 tons). Production at domestic mines rose by about 30,000 tons owing to increased concentrate and electrowon production at the Morenci Mine, where production rose for the 10th consecutive year. Mine production at Morenci, 492,000 tons, was up by 30,000 tons from that of 1996 year and was equally divided between concentrate and SX-EW production. Production at Phelps Dodge's Tyrone and Chino Mines was essentially unchanged at 72,000 and 153,000 tons, respectively. Combined production from Phelps Dodge's two smelters, 322,000 tons, was down by about 3% from that of 1996. Production of cathode from the El Paso, TX, refinery of 413,000 tons has remained essentially unchanged since 1994 (Phelps Dodge Corp., 1998a).

During 1997, exploration efforts continued to outline additional resources in the Morenci area. At the Coronado deposit, an estimated 163 million tons of sulfide material grading 0.69% copper, and 281 million tons of leach ore grading 0.29% copper, were delineated and added to reserve estimates. At Tyrone, an additional 71 million tons of mine-for-leach reserves grading 0.34% copper were identified (Phelps Dodge Corp., 1998a).

In February 1998, Phelps Dodge announced that the conditions of its December 4 offer had been met, and that it had acquired the assets of the Continental Mine in New Mexico from Cobre Mining Company Inc. (Phelps Dodge Corp., 1998d). The property consists of two underground mines and one open pit adjacent to Phelps Dodge's Chino Mine. With purchase of the property by Phelps Dodge, previously announced plans by Cobre for development of a 20,000-ton-per-year SX-EW operation were uncertain.

Mine production at Kennecott Utah Copper's Bingham Canyon Mine rose by about 7,000 tons to 305,000 tons. Design modifications to the Garfield smelter were completed in May, including replacement of the anode casting system. By December, the smelter was operating at design capacity of about 310,000 tons of anode per year, and the downstream refinery was at 90% of capacity. Kennecott's production of refined copper increased by 115% to 115,700 tons. Prior to completion of the renovations, Kennecott had exported significant quantities of concentrate and had sold copper matte to other domestic smelters (Rio Tinto plc-Rio Tinto Ltd., 1998).

Broken Hill Proprietary Co. Ltd. (BHP) of Australia, through its operating entity, BHP Copper Group, headquartered in San Francisco, operated the San Manuel, Pinto Valley, and Robinson Mines. Though exploration activities were deferred at its Superior Mine, which closed in 1996, plans for the adjacent Magma ore body were being developed. BHP's Robinson Mine, which consists of three principal mining areas, completed its first full year of production from the Liberty and the Veteran-Tripp pits, which began production in 1997. The concentrator grinding circuit, consisting of a single semiautogenous grinding mill in series with two ball mills, has the capacity to process 42,000 tons of ore per day. Copper recovery in 1997 was boosted from an initial 65% to over 85% through process optimization (Broken Hill Proprietary Co. Ltd., BHP Fact Sheet 1997-Robinson, accessed June 2, 1998, at URL http://www.BHP.com.au/copper/indes.htm). BHP was proceeding with its feasibility study, scheduled for completion in May 1998, for its Florence Project in Arizona, slated to be the world's first stand-alone in situ copper leach project. By the end of 1997, all major permits had been secured for a 35,000-ton-per-year SX-EW facility. BHP had identified 321 million tons of leach ore grading 0.37% (Broken Hill Proprietary Co. Ltd., BHP Fact Sheet 1997-Florence, accessed June 2, 1998, at URL http:// www.BHP.com.au /copper/indes.htm).

Inmet Mining Corp. announced that it had agreed to sell its Copper Range Co. copper refinery at White Pine, MI, to BHP Copper for $11.25 million. Proceeds from the sale, completed in January 1998, were expected to fund reclamation activities at the White Pine Mine and smelter, which closed in 1995. The refinery has continued to operate on anode copper imported from Canada (Inmet Mining Corp., 1997).

At yearend 1996, Arimetco International Inc., owner and operator of the Yerington Mine in Nevada and the Johnson Camp Mine in Arizona, announced that it had filed for reorganization under Chapter 11 of the U.S. Federal Bankruptcy Code. The company cited as the source of its financial difficulties the compound impact of lower copper prices, serious production problems at its Yerington Mine that temporarily lowered output and raised unit production costs, and the high cost of maintaining and developing nonproducing properties (Platt's Metals Week, 1997a).

In July, Arimetco suspended mining operations at its Johnson Camp Mine, but continued to generate copper from the leaching of existing heaps. By yearend, the company reported having completed a feasibility model for recovering gold and copper at its Sullivan property. Its Paradise Peak property remained idle and was reportedly available for sale.

In July, the U.S. Forest Service issued a final record of decision on its final environmental impact statement announcing that it would approve a mining plan for Cambior Inc.'s Carlota Mine project, west of Miami, AZ. The approval stipulated that Cambior use existing roadways, back-fill open pits, and minimize

its need for new water sources. However, in December, Carlota announced that it was indefinitely postponing development because of continuing delays in obtaining other Federal permits (Leaming, 1998).

Trade

In response to increased demand, net imports of refined copper rose sharply for the second consecutive year to 554,000 tons, compared with 374,000 tons in 1996. Net imports of all unwrought copper products rose to 359,000 tons, compared with 279,000 tons in 1996. In 1995 the United States had been a net exporter of unmanufactured copper. Exports of copper concentrate continued to decline from their peak level in 1994 owing to increased production from Kennecott's smelter and closure of the Flambeau Mine in Wisconsin, which had been shipping ore to Canada. Exports of copper scrap, which had declined in 1996, remained essentially unchanged in 1997.

According to Bureau of the Census data compiled by the Copper and Brass Fabricators Council, U.S. net imports of all copper and copper-alloy semifabricated products, 100,000 tons, were up from those of 1996 by about 43%. Canada and Mexico, the largest U.S. trading partners, together accounted for 66% of semifabricated copper exports and 30% of imports. Net exports to Canada of about 66,000 tons were up by about 47% from 1996. Mexican imports and exports were essentially balanced for the second consecutive year. (Copper and Brass Fabricators Council, Inc., 1998).

In July, Congress enacted the Taxpayer Relief Act of 1997. Included in the Act were provisions that extended the Generalized System of Preferences (GSP) Program. The extension was retroactive to May 31, 1997, the previous expiration date of the program. The GSP Program grants duty-free status to certain imports from developing countries, subject to a threshold per capita gross national product and to specific import ceiling guidelines. Copper materials eligible for the GSP Program include copper ores and concentrates, unwrought copper, and certain copper semifabricates (Congressional Record, 1997b).

Prices and Stocks

Following a global drawdown in inventories in 1996 of about 140,000 tons, the domestic and world supply of copper remained tight during the first half of 1997. According to data compiled by the International Copper Study Group (ICSG), global inventories fluctuated during the first half of the year. By the end of June, inventories had risen by only about 20,000 tons, and previously forecast copper surpluses had yet to materialize. In the United States, inventories rose by about 19,000 tons, principally owing to an infusion of copper into London Metal Exchange Ltd. (LME) warehouses in California. Copper prices, responding to the tightness in supply, rose during the first half of 1997; the U.S. producer price, which averaged $1.04 in December 1996, averaged $1.16 per pound for the first half of 1997.

In July, despite continued strong domestic demand for refined copper, the domestic supply of refined copper outstripped demand, and copper inventories rose by 35,000 tons, reaching 200,000 tons for the first time in more than 4 years. Most of the increase in stocks occurred at U.S. LME warehouses. LME spot contracts traded at a premium to Comex contracts throughout the month, encouraging the flow of material into LME warehouses. In response to domestic and worldwide increases in LME stocks, copper prices fell sharply in July. Prices continued to trend downward in response to rising inventories, and by the end of September, combined world-wide LME and Comex stocks had risen to almost 380,000 tons, up from 260,000 tons on August 1, and the U.S. producer price for refined copper had fallen to about $0.97 per pound. Global and domestic inventories continued to accumulate. At yearend, combined worldwide LME and Comex stocks had risen to more than 450,000 tons, and total world inventories had reached over 1 million tons, the highest level since 1993. The U.S. producer price for refined copper averaged only $0.83 per pound in December.

Copper scrap prices trended upward during the first half of 1997, following the upward trend in refined copper prices. In the first half of the year, the New York average buying price for no. 1 scrap at brass mills, and No. 2 scrap at refiners, averaged $1.08 and $.090 per pound, respectively. In July, scrap prices followed refined prices in a downward spiral; the No. 1 and No. 2 scrap prices averaged $0.91 and $0.74, respectively, during the second half of the year. The margin between refined copper and No. 2 scrap averaged $0.26 per pound during the first half of the year and declined with lower prices, averaging $0.24 per pound during the second half of the year. In December, when No. 2 scrap averaged only $0.62 per pound, the margin had shrunk to $0.21 per pound.

Consumption

Consumption of refined copper by domestic manufacturers rose by 6.8%, to 2.8 million tons. In addition to refined copper, domestic manufacturers directly consumed (melted or processed into chemicals) 1.07 million tons of copper-base scrap containing about 990,000 tons of recoverable copper. An additional 77,000 tons of copper was recovered in the consumption of aluminum-, nickel-, and zinc-base scrap. The total quantity of copper recoverable from the direct consumption of scrap, 1.07 million tons, increased by about 10% from that of 1996.

Consumption of refined copper at wire-rod mills increased by about 8% and accounted for about 77% of domestic consumption of refined copper. In response to wire-rod mill closures in 1995 that resulted in the loss of about 225,000 tons of capacity, several mills took steps to increase capacity, and U.S. wire-rod capacity increased from an estimated 2.13 million tons prior to the mill closures in 1995 to 2.18 million tons in 1997.

Cyprus Amax Minerals Co. reported that its Miami, AZ, wire-rod mill operated above design capacity for the second consecutive year, increasing production by 7% to more than 133,000 tons, and that its Chicago plant produced 169,000 tons of wire rod, a 4% increase from that of 1996 (Cyprus Amax Minerals Company, 1998a).

Phelps Dodge, the he world's largest producer of copper wire rod with plants in El Paso, TX, and Norwich, CT, boosted its wire-rod production by about 35,000 tons, to 680,000 tons. This compares with production of only 590,000 tons in 1995 (Phelps Dodge Corp., 1998a). Annual capacity at Essex Group Inc.,

which operates three wire-rod mills upstream from its wire and cable manufacturing operations, has increased by more than 100,000 tons since 1995.

Brass mills were the second largest consumers of refined copper and the largest consumers of copper-base scrap, accounting for 21% of refined consumption and about 58% of copper scrap consumption. Consumption of refined copper at brass mills was essentially unchanged, while copper recovered from scrap consumed at brass mills rose by about 19%.

According to data compiled by the CDA, shipments of copper and copper-alloy products to the U.S. market by fabricators (wire mills, brass mills, foundries, and powder producers), including net imports, rose by about 5% to 3.77 million tons containing an estimated 3.4 million tons of copper. About 70% of these shipments were as pure (unalloyed) copper products. Wire mill products accounted for about 47% of total shipments to the domestic market. In building construction, the largest end use sector, shipments rose by almost 5% and accounted for about 42% of the market. Building construction included products used for building wire, plumbing and heating, air conditioning and commercial refrigeration, builders hardware, and architectural applications. Other use sectors included: electric and electronic products, 25% of shipments; industrial machinery, 11%; transportation equipment, 13%; and consumer and general products, 9%. According to the CDA, mill product shipments have risen 27% over the past 20 years and the market distribution of shipments has shifted; shipments to building construction have grown as a percentage of total shipments, and shipments to industrial machinery, transportation, and consumer and general products have declined. The percentage of shipments to electric and electronic products has remained relatively unchanged (Copper Development Association Inc.,1998).

World Review

The global balance between the production and consumption of refined copper shifted markedly over a 12-month period, beginning in mid-1996. During the second half of 1996, following an almost 18-month period where global inventories of refined copper had remained relatively constant, copper supplies tightened, and inventories declined by about 150,000 tons. During the first half of 1997, inventories, on average, remained near the yearend 1996 level of 660,000 tons. However, beginning in July, global inventories began a precipitous climb, and by yearend had exceeded 1 million tons for the first time since 1994 (International Copper Study Group, 1998a). The oversupply that developed reflected an increase in production of refined copper and a decline or stagnation in demand during the second half of the year. Monthly ICSG refined production data indicate that global refined production increased by over 300,000 tons during the second half of 1997, while global demand declined by about 50,000 tons, principally owing to weaker East Asian demand where stock market crashes, currency devaluations, and tightened economic policies were creating economic crises that threatened the economies of several countries. In Thailand, the region's second largest copper consumer, where wire rod and wire and cable production had already slowed during the first half of 1997, currency devaluation, rising interest rates, and stringent economic policies in the second half of the year further depressed demand. In Japan, a consumption tax in April further depressed an already weak demand (CRU International Ltd., 1997a). Copper prices inversely followed the trend in supply, rising with declining inventories in the latter part of 1996, and continuing to rise in the first half of 1997 in response to continued tight supplies. However, with the rise in inventories in July, prices began a steep decline, ending the year at the lowest level since 1993.

According to ICSG data, total world demand for refined copper rose by about 570,000 tons, an increase of 4.5%. Despite an economic crisis in the East Asian market that led to a lower than anticipated growth rate, consumption by all Asian countries (as classified by the United Nations), increased by 3%, principally owing to growth in the Republic of Korea, the Philippines, Taiwan, and Turkey. China, Japan, Indonesia, and Thailand all reported slight declines in consumption. Consumption in Europe rose by 4.6% owing to strong demand in France, Germany, Italy, and Spain (International Copper Study Group, 1998a).

World mine production rose by about 400,000 tons, about 4%, to almost 11.4 million tons. Most of the increase was accounted for by Chile, where production rose by 276,000 tons to 3.39 million tons, up from 2.06 million tons in 1993 at the beginning of its rapid expansion period . Significant production increases also occurred in several major copper-producing countries, including Indonesia, Kazakstan, Mexico, Mongolia, Peru and South Africa. Partially offsetting these increases were significant declines in Canada and Papua New Guinea, and the Philippines. Production in Papua New Guinea declined sharply owing to the shutdown of the Ok Tedi Mine in August, when drought conditions prevented shipments of concentrates on the dried-up Fly River. World mine capacity increased by about 500,000 tons, to 12.6 million tons (International Copper Study Group, 1998b).

In 1997, world smelter production rose by about 300,000 tons to 11.1 million tons. The increase was accounted for by increased primary production. The quantity of copper recovered from scrap declined owing to reduced Chinese production. Estimated world smelter capacity also increased by about 300,000 tons, and capacity utilization remained unchanged at about 81%. Although numerous smelter projects were planned and capacity was forecast to rise by almost 1.5 million tons during the next 2 years, only a handful of major expansions took place in 1997.

In Chile, a 50,000-ton-per-year expansion of the Refimet S.A. smelter was completed, bringing annual capacity to 170,000 tons. In China, a new 100,000-ton flash smelter was commissioned to replace the 70,000-ton-per-year Tonglin Nonferrous Metals Corp. reverberatory smelter. In India, Sterlite Industries completed the installation and startup of an Isasmelt smelter, which was projected to produce 100,000 tons per year of copper at full capacity. In Mexico, the addition of an El Teniente converter at La Caridad smelter boosted capacity from 180,000 tons of copper per year to 280,000 tons (International Copper Study Group, 1998b).

World production of refined copper rose substantially for the third straight year, increasing by 880,000 tons, or 7%. One-third of the increased refined production (290,000 tons) was from expansion of electrowon production, principally in Chile (263,000 tons). Total world refinery capacity, including electrowinning, rose by about 1 million tons. Electrolytic refinery capacity

increased substantially in Chile with the completion of a 100,000-ton expansion of the Las Ventanas refinery and in Mexico with the startup of the 300,000-ton-per year La Caridad refinery. In the United States, capacity utilization increased with increased production from the Kennecott smelter.

Argentina.—The Bajo el Alumbrera Mine, owned by MIM Holdings Ltd. (50%), North Ltd. (25%), and Rio Algom (25%), began production in October, at a mining rate of 80,000 tons per day of ore. By yearend, more than 30,000 tons of copper in concentrate had been produced. The project, with proven and probable ore reserves of almost 700 million tons, cost more than $1 billion to develop and is projected to have at least a 20-year mine life. Capacity is projected to rise to 190,000 tons of copper per year by 1999 (Mining Magazine, 1997; Mining Engineering, 1998a). A nearby property, Agua Rica, 70% owned by BHP, was reported to have 1.2 billion tons of copper resources. Field activities during the year including drilling into high-grade ore zones and development of two bulk sample adits and test pads for leaching (Mining Engineering, 1998b). Cambior Inc. announced the completion of a feasibility study for the El Pachón copper project, located in Argentina near the border with Chile, and the signing of a protocol agreement between the governments of Argentina and Chile that will facilitate efficient operation of the project. Cambior estimated reserves to be 880 million tons grading 0.62% copper. Initial production of 250,000 tons per year of copper in concentrate was not expected to begin until late in 2002 (Cambior Inc., 1997).

Australia.—Expansion of Western Mining Corp.'s Olympic Dam Project was reported to be running ahead of schedule, with startup now anticipated in late 1998. The expansion was originally projected to incrementally boost capacity from 85,000 tons per year to 200,000 tons per year of refined copper by 2000. Western Mining announced that it would seek necessary approvals for the project to expand to 350,000 tons per year. Mount Isa Mines Ltd. announced plans to develop its new Enterprise Mine to extract ore from ore bodies that extend 1,200 meters to 1,950 meters below the surface, making it Australia's deepest underground mine. Production from the new ore bodies was scheduled to begin in 1999. Copper and gold production began from the new Ernest Henry open pit in Queensland. At capacity, the mine was expected to produce 95,000 tons per year of copper in concentrate and 3,730 kilograms of gold (Bureau of Resource Sciences, Australia, 1997).

Canada.—Although production and capacity declined in 1997 for the second consecutive year, several projects were under development in Canada that are expected to significantly increase production and capacity over the next 3 years. At midyear, Teck Corp. closed its 12,000-ton-per-year Afton Mine owing to depletion of reserves. In Sudbury, Ontario, a 26-day labor strike in June shuttered Inco Ltd.'s 120,000-ton-per-year operations; and in August, Falconbridge Ltd.'s 50,000-ton-per-year operations were struck for 23 days. In British Columbia, Royal Oak Mines anticipated the startup of its Kemess gold-copper project (27,000 tons per year of copper in concentrate) by May 1998, and Princeton Mining Corp. began production at the Huckleberry Mine (37,000 tons of copper in concentrate per year) in September. In Quebec, MSV Resources closed its Copper Rand Portage Mine (8,000 tons per year) owing to ore depletion. In Newfoundland, Inco announced that the Voisey's Bay nickel-copper-cobalt project, which was slated to generate 90,000 tons per year of copper initially, would be delayed at least 1 year beyond the previously announced late 1999 startup date owing to delays in the environmental review and approval process (Bokovay, 1998).

Chile.—Mine production and capacity continued to escalate, rising by about 275,000 tons and 350,000 tons, respectively. The Escondida Mine became the world's largest copper mine following the completion of a $560 million Phase 3 expansion in 1996 that raised production capacity from 480,000 tons per year to more than 900,000 tons per year in 1997. Production in 1997 rose by about 9% to 927,000 tons, in part owing to higher ore grades, though it was not anticipated to remain at that level. The operating company, Minera Escondida Ltda., announced plans to close its Coloso SX-EW plant owing to technical problems with the ammonia leach process used to treat concentrate. Construction was progressing for an end of 1998 startup of a 125,000-ton-per-year SX-EW facility west of Escondida, and an engineering contract was awarded for a fourth expansion of the concentrator to accommodate declining ore grades (Mining Engineering, 1998b; Rio Tinto plc-Rio Tinto Ltd., 1998).

Production from Cyprus Amax Minerals' 51%-controlled El Abra project, which began production in December 1996, rose to 194,000 tons. With identified leach reserves of over 900 million tons, the project is expected to operate for at least an additional 18 years. About 500 million tons of sulfide resources have also been identified (Cyprus Amax Minerals Company, 1998b).

Phelps Dodge Corp. reported that a $305 million expansion of the concentrator at its Candelaria Mine was completed during the fourth quarter of the year and that capacity was projected to rise by about 75,000 tons per year to a total of 172,000 tons per year of copper. As a result of the expansion, the expected mine life was reduced from 35 to 19 years (Phelps Dodge Corp., 1998a).

Corporación Nacional del Cobre De Chile (Codelco-Chile) reported that its total production rose by about 90,000 tons to 1.326 million tons, principally owing to increased production from its 49% share in the El Abra Mine. Commercial production from its Radomiro Tomic Mine began during December and was projected to reach 150,000 tons by 1999. The company estimated direct operating costs for this SX-EW operation at $0.40 per pound. At its Andina Division, which produced 146,000 tons of copper, Codelco was proceeding with a $370 million concentrator expansion that would nearly double the current 34,000-ton-per-day milling capacity and increase copper production by 110,000 tons per year. The expansion was projected to come on stream during the second half of 1998. At the Teniente Division, which produced 343,000 tons of copper, a planned expansion project scheduled to be started in 1998 was delayed until 1999. The Chuquicamata Division, the country's second largest copper operation, produced 650,000 tons of copper (Corporación Nacional del Cobre De Chile, 1998).

At the Collahuasi project, prestripping of overburden was progressing faster than anticipated, and construction of a 45,000-ton-per-year SX-EW plant was on target for an April 1998 startup. Sulfide operations, projected to produce 330,000 tons of copper per year in concentrate, were expected on-stream later in 1998 (CRU International Ltd., 1997b).

Indonesia.—P.T. Freeport Indonesia Co.'s Grasberg Mine in Irian Jaya achieved record production of about 544,000 tons of copper, an increase of about 37,000 tons from that of 1996, owing to a record average daily mill throughput of 128,600 tons, a record recovery rate of 85.4%, and an increase in average ore grade from 1.35% copper to 1.37% copper. By yearend, startup operations had begun on its fourth concentrator, which was projected to increase ore throughput to more than 200,000 tons per day by mid-1998 and to increase production capacity to 770,000 tons per year. P.T. Freeport completed a "debottlenecking" of its Atlantic smelter-refinery in Spain, which enabled it to produce 290,000 tons of copper, twice its capacity when purchased in 1993. Construction of P.T. Freeport's 25%-owned smelter/refinery in Gresik, Indonesia, was 90% complete and operations were scheduled for startup in mid-1998. The smelter was expected to consume 600,000 tons per year of Grasberg concentrate to produce 200,000 tons of refined copper (Freeport-McMoRan Copper & Gold Inc., 1998).

Peru.—Production from SPCC mines increased by 1.1% to 311,000 tons. Production at the Cuajone Mine increased 4% to 159,000 tons as a result of higher ore grades and increased SX-EW production, and conversely, production declined by about 2% at the Toquepala Mine owing to lower ore grades and lower SX-EW recovery. Production at the Ilo refinery increased 20% to 233,000 tons following completion of an expansion in 1996. A 19% expansion, 59,000 tons, at the Cuajone Mine was scheduled to be completed in early 1999. Modernization plans for the Ilo smelter, to be completed in stages by 2003, included construction of a new acid plant, installation of a new smelting furnace, and modernization of converters (ASARCO Incorporated, 1998). Production from Cyprus Amax's Cerro Verde Mine, which consists of the Cerro Verde and Santa Rosa Pits, rose 16% to 55,000 tons of electrowon copper following an expansion and upgrade in 1996. At yearend, Cyprus approved the $100 million development of the adjacent Cerro Negro deposit, though development was subsequently delayed owing to low copper prices (Cyprus Amax Minerals Company, 1998a).

BHP Magma Tintaya, Peru's second largest copper producer, reported production of 68,500 tons, a 16% increase from that of 1996, from its open pit. Centromin Peru, the state-owned mining company, produced 35,000 tons of copper, principally from its Cobriza Mine, and completed the sale of its La Oroya smelter and refinery to the Doe Run Company (Soldi, 1998).

Philippines.—Production continued to slide following the phaseout of Benguet Corp.'s Dizon Mine and a shift to gold production at the Lepanto gold-copper mine. Production by Marcopper Mining Corp. was suspended during the year and Maricalum Mining Corp.'s Sipalay Mine experienced work stoppages. Atlas Mining Co.'s operations remained on care and maintenance. Philex Mining's Paedal operations increased production by 55% and accounted for 60% of total Philippine output (Disini, 1998).

Zambia.—In 1996, following 4 years of studies, the state-owned Zambia Consolidated Copper Mines Limited (ZCCM) agreed to proceed with the privatization of its copper operations. By yearend 1996, ZCCM was offering at least nine different investment packages to a group of prequalified investors for distribution of its mining and electrical power assets (Mining Annual Review, 1997). Though facing court challenges to the validity of the sale, India's Binani Corp. was awarded control of the Luanshya-Baluba Project, and Metorex Ltd., a consortium of South African and Canadian mining companies, was awarded control of the 10,000-ton-per-year Chibuluma copper mine. Both transactions were effective in late September (Platt's Metals Week, 1997g). ZCCM also announced that the mothballed Chambishi copper-cobalt mine was awarded to Canadian-based Ivanhoe Capital Corp., subject to the completion of contract negotiations, which was anticipated by yearend (Platt's Metals Week, 1997c). ZCCM announced in early November that it had awarded three of the packages, the Nkana/Nchanga mining and metallurgical complex, the Chambishi cobalt plant, and the Chingola refractory ore dumps, to the Kafue Consortium, a group comprised of Avim Ltd. (South Africa), Phelps Dodge Corp. (United States), and Commonwealth Development Corp. (United Kingdom). In fiscal year 1996-97, Nkana-Nchanga produced 172,000 tons of refined copper and it was anticipated that future production would increase above this level. ZCCM was currently repairing two of four reverberatory furnaces at the Nkana smelter and had announced plans to double production at the 60,000-ton-per-year Nkana Mine (Platt's Metals Week, 1997f). However, the project was placed in jeopardy when Phelps Dodge and Noranda withdrew from the consortium in May 1998, after months of failed negotiations over project elements (Phelps Dodge, 1998b).

Current Research and Technology

The Universal Auto Radiator Manufacturing Co. of Pittsburgh installed a pilot plant to produce brazed copper-brass radiators using the new CuproBraze manufacturing process. Developed under sponsorship of the International Copper Association, the new technology offers several advantages over the process used to braze aluminum radiators including a much greater temperature tolerance and greater production speed. Also, the technology does not require separate fluxing or washing operations and is thus a more compact system, requiring less floor space. The new CuproBrazed radiators were expected to be 30% to 40% lighter than conventional sweated copper-brass radiators and cost 10% less than aluminum radiators to produce. Though copper dominates the replacement market, aluminum radiators account for about 95% of the original equipment radiators installed in American cars (Copper Topics, 1998).

In September, IBM announced that it had developed the technology to replace aluminum conductors in its integrated circuits. Scientists had been attempting to develop copper as an alternative to aluminum because aluminum's lower conductivity was placing limits on miniaturization. Copper could not be directly substituted for aluminum because silicon, the dominant semiconducting material, is "poisoned' by atomic diffusion of copper into the silicon. IBM overcame this problem by isolating the copper using a proprietary coating between the copper and silicon. IBM also developed the technology to etch the fine copper wires that could lead to interconnections as narrow as 0.1 micron, compared with 0.25 micron for aluminum. The new chips are expected to run four times faster than their aluminum counterparts and cost less to produce (Copper Topics, 1997).

Outlook

U.S. mine capacity is expected to decline by about 20,000 tons in 1998 owing to closure of the Flambeau Mine in 1997, and lower recovery from leach solutions at several mines that suspended mining of new leach ore. Mine production and capacity utilization in 1998, however, are expected to decline, with projected mine production falling by over 100,000 tons to 1.83 million tons. In early 1998, in response to sustained lower prices, a number of companies announced production cutbacks and project deferrals. In January, Cyprus Amax announced that it would be curtailing 27,000 tons of higher-cost production at its Bagdad and Sierrita Mines (Cyprus Amax Minerals Company, 1998b). At the end of February, BHP Copper Corp. announced that it would curtail copper sulfide operations at its Pinto Valley Mine in Arizona and eventually lay off 447 of the mine's 598 employees. In March, Phelps Dodge announced a revised mine plan for its Chino Mine that would result in the loss of 45,000 tons of electrowon production over a 3-year period (Phelps Dodge Corp., 1998c). Mine capacity through the year 2000 is expected to increase only nominally as most planned property development or mine expansions have been deferred beyond that period owing to low copper prices.

Refinery production in 1998 is expected to remain at about the same level as in the previous year despite the first full year of production from Kennecott's smelter/refinery complex since completion of renovations. Cutbacks in electrowon production and an anode feed shortage are expected to moderate the growth in primary production, and a scrap shortage occasioned by low prices is expected to reduce secondary production.

Consumption of refined copper during the first 6 months of 1998 was about 9% higher than in the equivalent period in 1997; consumption for the full year 1998 is projected to rise only about 5% above that of 1997. The amount of copper recovered from old scrap, which rose during 1997, declined during the first half of 1998 in response to sustained lower copper prices. No new secondary capacity is expected, and lower prices could further depress scrap collection. Recycling of new scrap has trended upward with increased domestic consumption of mill products. Growth in new scrap recycling in 1998 was expected to lag behind the growth in refined copper demand as tight scrap supplies encourage the substitution of refined copper for scrap at brass mills and other consumers.

World mine capacity is expected to grow rapidly in the next several years. According to data compiled by the ICSG, world mine capacity growth is expected to accelerate in 1998, increasing by about 800,000 tons. Smelter capacity is projected to grow by less than 600,000 tons, but, since about 300,000 tons of mine growth will come from electrowinning, should be more than adequate to meet mine production growth. The current shortage of concentrate relative to smelter capacity is expected to persist and result in continued low capacity utilization from global smelters. Refinery capacity is projected to grow by more than 900,000 tons and be more than sufficient to meet the growth in mine production. While global demand for refined copper grew by more than 4% (550,000 tons) in 1997, the continuing economic crisis in Asia is expected to reduce growth in demand in 1998 to about 300,000 tons. Given the large expansion of mine and refinery capacity, production of refined copper in 1998 is projected to exceed demand (International Copper Study Group, 1998b).

Beyond 1998, growth of mine capacity is expected to continue to outstrip that of consumption. Annual capacity at operating mines or mines now under development is projected to rise from the current 12.6 million tons to 14.5 million tons by 2000. About 600,000 tons of the increase is projected to come from SX-EW production. Chile is expected to account for most of the increase, where capacity is expected to grow from the current 3.5 million tons to as much as 4.6 million tons per year. Significant increases are also projected for Argentina, Australia, Indonesia, and Zambia. This growth has been modified by the current depressed market, which has led companies to defer an estimated 500,000 tons of planned development to beyond the year 2000. Delays in environmental permitting have also contributed to project delays. With new smelter projects under consideration in more than a dozen countries, smelter capacity could rise by 1.5 million tons by 2000, thus keeping pace with the projected growth in copper contained in concentrates.

References Cited

ASARCO Incorporated, 1998, Asarco 1997 annual report: New York, NY, 45 p.

Bokovay, Geoffrey, 1998, Copper: Canadian Minerals Yearbook, Preprint, 27 p.

Buchholtz, Rainer, 1997, Transfrontier movements of secondary materials under the rules of the Basel convention—The impact of the export ban for hazardous wastes on industrialized and developed countries: Copper Bulletin, v. 4, no. 7, p. 41- 42.

Bureau of Resource Sciences, Australia, 1997, Australia's identified mineral resources—1997: Bureau of Resource Sciences, Australia, p. 7-8.

Cambior Inc., 1997, Cambior completes feasibility study for the El Pachón copper project: Cambior Inc., press release, September 25, 5 p.

Congressional Record, 1997a, 50 States commemorative coin program act: Congressional Record, November 13, p. H10800-H10803.

———1997b, Conference report on H.R. 2014, Taxpayer Relief Act of 1997: Congressional Record, July 30, p. H6613-6617.

Copper and Brass Fabricators Council, Inc., 1998, Import/Export report: Washington, DC, May 21, 130 p.

Copper Development Association Inc., 1998, Annual data 1997—Copper supply and consumption: New York, NY, 20 p. Copper Topics, 1997, Latest chip accelerated with copper: Copper Development Association. Fall, no. 84, 4 p.

———1998, Copper is cooler for cars: Copper Development Association, Spring, no. 85, 4 p.

Corporación Nacional Del Cobre De Chile, 1998, Corporación Nacional Del Cobre De Chile 1997 annual report: Santiago, Chile, Corporación Nacional Del Cobre De Chile, 98 p.

CRU International Ltd., 1997a, Copper Quarterly Report: CRU International Ltd., October, p. 11-15.

———1997b, CRU Copper Monitor: CRU International Ltd., July, 8 p.

Cyprus Amax Minerals Company, 1998a, Cyprus Amax Minerals Company 10-K report 1997: Securities and Exchange Commission, 39 p.

———1998b, Cyprus AmaxMinerals reports 1997 earnings of $69 million, $0.54 per share: Englewood, CO, Cyprus Amax Minerals Company news release, January 21, 1 p.

Disini, A.F., 1998, Peru—Mining Annual Review, 1997: Mining Journal Preprint, 3 p.

Freeport-McMoRan Copper & Gold Inc., 1998, Freeport-McMoRan Copper & Gold Inc. 1997 annual report: New Orleans, LA, 48 p.

Inmet Mining Corp., 1997, Inmet Mining Corp. third quarter report: Toronto, Canada, October 30, 7 p.

International Copper Study Group, 1998a, Copper Bulletin: Lisbon, Portugal, v. 5, no. 8, 48 p.

———1998b, Directory of Copper Mines and Plants: Lisbon, Portugal, September, 79 p.

———1998c, Environmental and Economics Committee, Internal document ICSG/EEC.4/2: Lisbon, Portugal, June, 3 p.

Leaming, George, 1998, The economic impact of the Arizona copper industry, 1997: Marana, AZ, Western Economic Analysis Center, April, p. 18, 22.

Mining Annual Review, 1977, Zambia—Mining annual review: Mining Journal Preprint, 3 p.
Mining Engineering, 1998a, Argentina seeks foreign investment for its mining industry: Mining Engineering, v. 50, no.3, March, p. 55-58.
———1998b,BHP continues worldwide project development: Mining Engineering, v. 50, no. 8, August, p. 15-16.
Mining Magazine, 1997, Alumbrera copper-gold mine: Mining Magazine, v. 176, no. 4, p. 235-239.
Phelps Dodge Corp., 1998a, Phelps Dodge Corp. 10-K report 1997:Securities and Exchange Commission, 102 p.
———1998b, Phelps Dodge and Noranda withdraw from Kafue consortium: Phoenix, AZ,Phelps Dodge Corp. news release, May 29, 2 p.
———1998c, Phelps Dodge announces proposal to curtail production and lay off employees at Chino:Phoenix, AZ, Phelps Dodge Corp. news release, May 1, 2 p.
———1998d,Phelps Dodge offer from Cobre Mining comptete: Phoenix, AZ, Phelps Dodge Corp. news release, February 3, 2 p.
Platt's Metals Week, 1997a, Arimetcofiles for Chapter 11: Platt's Metals Week, v. 68, no. 1, January 6, p. 8.
———1997b,Equatorial buys Cyprus Amax assets: Platt's Metals Week, v. 68. no. 36, September 8, p. 7.
———1997c, Ivanhoe gets Chambishi: Platt's Metals Week, v. 68, no. 45, November 10, p. 5.
———1997d, U.S. demand for copper, nickel may rise under quarter act: Platt's Metals Week, v. 68, no. 49, December 8, p. 10.
———1997e,U.S. EPA signs final plan for new air-quality standards: Platt's Metals Week, v. 68, no. 29, July 21, p. 13.
———1997f, Zambia awards Nchanga/Nkana copper division to Kafue: Platt's Metals Week, v. 68, no. 45, November 10, p. 4.
———1997g,ZCCM to hand over mines next month: Platt's Metals Week, v. 68. no. 33, August 18, p. 6.
Rio Tinto plc-Rio Tinto Ltd., 1998, Annual report to shareholders 1997: Rio Tinto plc-Rio Tinto Ltd., London, 64 p.
Soldi, C.G., 1998, Peru: Supplement to Mining Journal, August 14, p.16.

SOURCES OF INFORMATION

U.S. Geological Survey Publications

Copper. Ch. in Mineral Commodity Summaries, annual.[1]

Copper. Ch. in United States mineral resources, U.S. Geological Survey Professional Paper 820, 1973.

Copper. Mineral Industry Surveys, monthly.[1]

The nature and use of copper reserve and resource data, U.S. Geological Survey Professional Paper 907-f, 1981.

Other

ABMS Non-Ferrous Metal Data.

Annual Data 1997—Copper Supply and Consumption: Copper Development Assoc. Inc.

The Availability of Copper in Market Economy Countries, IC 9310, U.S. Bureau of Mines, 1992.

Copper. Ch. in Metal Prices in the United States Through 1991, U.S. Bureau of Mines, 1993.

Copper. Ch. in Mineral Facts and Problems, U.S. Bureau of Mines Bulletin 675, 1985.

International Copper Study Group, monthly Copper Bulletin.

World Bureau of Metal Statistics (WBMS, London), monthly World Metals Statistics.

[1]Prior to January 1996, published by the U.S. Bureau of Mines.

TABLE I
SALIENT COPPER STATISTICS 1/

(Metric tons unless otherwise specified)

		1993	1994	1995	1996	1997
United States:						
Mine production:						
Ore concentrated 2/	thousand metric tons	262,000	271,000	267,000	274,000	284,000
Average yield of copper 2/	percent	0.49	0.47	0.46	0.46	0.46
Recoverable copper:						
Arizona		1,160,000	1,160,000	1,170,000	1,240,000	1,250,000
Michigan, Montana, Utah		387,000	397,000	384,000	339,000	337,000
New Mexico		224,000	234,000	250,000	256,000	259,000
Other States		31,100	55,700	47,400	85,600 r/	96,500
Total recoverable		1,800,000	1,850,000	1,850,000	1,920,000	1,940,000
Total value	millions	$3,640	$4,430	$5,640	$4,610	$4,570
Smelter production: 3/						
From domestic and foreign ores		1,270,000	1,310,000	1,250,000	1,300,000	1,440,000
From scrap (new and old)		415,000	397,000	354,000	339,000	285,000
Total smelter		1,680,000	1,710,000	1,600,000	1,640,000	1,720,000
Byproduct sulfuric acid,sulfur content	thousand metric tons	1,230	1,200	1,210	1,240 r/	1,370
Refinery production:						
Primary materials:						
Electrolytic from domestic ores		1,210,000	1,280,000	1,300,000	1,290,000	1,370,000
Electrolytic from foreign materials		88,600	63,500	91,200	147,000	113,000
Electrowon		491,000	493,000	539,000	574,000	586,000
Total primary		1,790,000	1,840,000	1,930,000	2,010,000	2,060,000
Secondary materials (scrap):						
Electrolytic		337,000	269,000	215,000	193,000	233,000
Fire refined		123,000	122,000	137,000	152,000 r/	151,000
Total secondary		460,000	392,000	352,000	345,000 r/	383,000
Total refined		2,250,000	2,230,000	2,280,000	2,350,000 r/	2,450,000
Secondary copper produced:						
Recovered from new scrap		748,000	827,000	874,000	891,000 r/	956,000
Recovered from old scrap		543,000	500,000	442,000	428,000	496,000
Total copper from scrap		1,290,000	1,330,000	1,320,000	1,320,000 r/	1,450,000
Copper sulfate:						
Production		46,400	48,400	52,000	43,500 r/	48,400
Stocks, Dec. 31		2,990	2,510	2,770	W	W
Exports:						
Refined		217,000	157,000	217,000	169,000	92,900
Unmanufactured 4/		685,000	752,000	894,000	683,000	618,000
Imports:						
Refined		343,000	470,000	429,000	543,000	647,000
Unmanufactured 4/		637,000	763,000	825,000	961,000 r/	978,000
Copper stocks, Dec. 31:						
Blister and in-process material		146,000	171,000	174,000	173,000	180,000
Refined copper:						
Refineries		33,400	42,500	38,000	32,200	59,700
Wire rod mills		34,700	39,800	24,800	32,100	24,600
Brass mills		14,100	8,530	7,110	14,000	14,300
Other industry		3,650	4,090	3,030	2,700	2,700
New York Commodity Exchange (COMEX)		67,200	24,200	21,500	26,600	83,000
London Metal Exchange (LME), U.S. warehouses.		--	--	68,200	38,300	129,000
Total refined		153,000	119,000	163,000	146,000	314,000
Consumption:						
Refined copper, reported		2,360,000	2,680,000	2,530,000	2,610,000 r/	2,790,000
Apparent consumption, primary refined and old scrap		2,510,000	2,690,000	2,540,000	2,830,000	2,950,000
Price:						
Producer, weighted average	cents per pound	91.56	111.05	138.33	109.04	106.92
COMEX, first position	do.	85.28	107.05	134.72	105.87	103.58
LME, Grade A cash	do.	86.76	104.64	133.12	104.05	103.25
World production:						
Mine	thousand metric tons	9,430 r/	9,520 r/	10,100	11,000	11,400
Smelter	do.	9,930 r/	10,000 r/	10,300 r/	10,800 r/	11,100
Refinery	do.	11,300	11,200	11,900	12,600 r/	13,500

See footnotes at end of table.

TABLE 1--Continued
SALIENT COPPER STATISTICS 1/

r/ Revised. W Withheld to avoid disclosing company proprietary data.
1/ Data, except prices, are rounded to three significant digits, except prices; may not add to totals shown.
2/ Yield calculations include precipitates but excludes copper recovered from leaching by solvent extraction-electrowinning.
3/ Includes primary copper produced from foreign ores, matte, etc., to avoid disclosing company proprietary data.
4/ Includes copper content of alloy scrap.

TABLE 2
LEADING COPPER-PRODUCING MINES IN THE UNITED STATES IN 1997, IN ORDER OF OUTPUT 1/

Rank	Mine	County and State	Operator	Source of copper	Capacity (thousand metric tons)
1	Morenci	Greenlee, AZ	Phelps Dodge Corp.	Copper-molybdenum ore, concentrated and leached.	495
2	Bingham Canyon	Salt Lake, UT	Kennecott Utah Copper Corp.	do.	310
3	Chino	Grant, NM	Phelps Dodge Corp.	do.	162
4	Sierrita	Pima, AZ	do.	do.	143
5	Ray	Pinal, AZ	ASARCO Incorporated	Copper ore, concentrated and leached.	125
6	Mission Complex	Pima, AZ	do.	Copper ore, concentrated.	115
7	Bagdad	Yavapai, AZ	Cyprus Amax Minerals Co.	Copper-molybdenum ore, concentrated and leached.	115
8	San Manuel	Pinal, AZ	BHP Copper Co.	do.	147
9	Pinto Valley	Gila, AZ	do.	do.	76
10	Cyprus Miami	do.	Cyprus Amax Minerals Co.	Copper ore, leached.	73
11	Tyrone	Grant, NM	Phelps Dodge Corp. and Burro Chief Copper Co.	Copper ore, concentrated and leached.	70
12	Robinson	White Pine, NV	BHP Copper Co.	Copper ore, concentrated.	70
13	Continental	Silver Bow, MT	Montana Resources Inc.	Copper-molybdenum ore, concentrated.	50
14	Continental	Grant, NM	Cobre Mining Co.	Copper ore, concentrated.	35
15	Flambeau	Rusk, WI	Kennecott Minerals Corp.	do.	18
16	Casa Grande	Pinal, AZ	Cyprus Amax Minerals Co.	Copper ore, concentrated and leached.	15
17	Miami	Gila, AZ	BHP Copper Co.	Copper ore, leached.	12
18	Silver Bell	Pima, AZ	ASARCO Incorporated	Copper ore, concentrated and leached.	12

1/ The mines in this list accounted for 98% of the U.S. mine production in 1997.

TABLE 3
MINE PRODUCTION OF COPPER-BEARING ORES AND RECOVERABLE COPPER CONTENT OF ORES PRODUCED IN THE UNITED STATES, BY SOURCE AND TREATMENT PROCESS 1/

(Metric tons)

Source and treatment process	1996 Gross weight	1996 Recoverable copper	1997 Gross weight	1997 Recoverable copper
Mined copper ore:				
Concentrated	274,000,000 r/	1,290,000	284,000,000 2/	1,310,000
Leached	NA	574,000	NA	586,000
Total	NA	1,860,000	NA	1,900,000
Copper precipitates shipped; leached from tailings, dump, and in-place material	25,100	18,900	20,800	15,600
Other copper-bearing ores 3/	7,480,000	40,400 r/	7,700,000	28,200
Grand total	XX	1,920,000	XX	1,940,000

r/ Revised. NA Not available. XX Not applicable.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ In 1997, 22.4 metric tons of gold and 393 metric tons of silver were recovered from concentrated ore. The average value of gold and silver per metric ton of ore concentrated was $1.06.
3/ Includes gold ore, gold-silver ore, lead ore, lead-copper ore, lead-zinc ore, molybdenum ore, silver ore, tungsten ore, zinc ore, fluorspar, flux ores, clean up, ore shipped directly to smelters, and tailings.

TABLE 4
CONSUMPTION OF COPPER AND BRASS MATERIALS IN THE UNITED STATES, BY ITEM 1/

(Metric tons)

Item	Brass mills	Wire rod mills	Foundries, chemical plants, miscellaneous users	Smelters, refiners, ingot makers	Total
1996:					
Copper scrap	909,000 r/ 2/	(3/)	61,300	655,000 r/	1,630,000
Refined copper 4/	588,000	1,980,000	45,500 r/ 5/	(6/)	2,610,000 r/
Hardeners and master alloys	893	--	2,200 r/	--	3,100 r/
Brass ingots	--	--	120,000 r/	--	120,000 r/
Slab zinc	63,600	--	(7/)	(7/)	86,400
Miscellaneous	--	--	--	(8/)	(8/)
1997:					
Copper scrap	1,010,000	(3/)	62,700	682,000	1,750,000
Refined copper 3/	597,000	2,140,000	47,500 5/	(6/)	2,790,000
Hardeners and master alloys	652	--	2,240	--	2,890
Brass ingots	--	--	125,000	--	125,000
Slab zinc	54,400	--	(7/)	(7/)	76,800
Miscellaneous	--	--	--	--	--

r/ Revised.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes consumption of copper scrap at wire rod mills to avoid disclosing company proprietary data.
3/ Withheld to avoid disclosing company proprietary data; included in "Brass Mills."
4/ Detailed information on consumption of refined copper can be found in table 5.
5/ Includes consumption of refined copper at ingot makers to avoid disclosing company proprietary data.
6/ Withheld to avoid disclosing company proprietary data; included in "Foundries, chemicals plants, miscellaneous users."
7/ Withheld to avoid disclosing company proprietary data; included in "Total."
8/ Revised to zero.

TABLE 5
CONSUMPTION OF REFINED COPPER SHAPES IN THE UNITED STATES, BY CLASS OF CONSUMER 1/

(Metric tons)

Class of consumer	Cathodes	Ingots and ingot bars	Cakes and slabs	Wirebar, billets, other	Total
1996:					
Wire rod mills	1,970,000 r/	--	--	10,800 r/	1,980,000
Brass mills	357,000	23,700	80,800	126,000	588,000
Chemical plants	--	--	--	1,110	1,110
Ingot-makers	W	--	W	3,640	3,640
Foundries	1,750	3,120 r/	W	10,900 r/	15,800 r/
Miscellaneous 2/	W	W	W	28,600	28,600
Total	2,320,000 r/	26,800 r/	80,800	181,000 r/	2,610,000 r/
1997:					
Wire rod mills	2,130,000	--	--	12,800	2,140,000
Brass mills	356,000	26,300	81,100	134,000	597,000
Chemical plants	--	--	--	1,010	1,010
Ingot-makers	W	--	W	4,190	4,190
Foundries	1,410	3,140	W	12,100	16,600
Miscellaneous 2/	W	W	W	29,900	29,900
Total	2,490,000	29,500	81,100	194,000	2,790,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Wirebar, billets, and other."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes iron and steel plants, primary smelters producing alloys other than copper, consumers of copper powder and copper shot, and other manufacturers.

TABLE 6
COPPER RECOVERED FROM SCRAP PROCESSED IN THE UNITED STATES,
BY KIND OF SCRAP AND FORM OF RECOVERY 1/

(Metric tons)

	1996	1997
Kind of scrap:		
New scrap:		
Copper-base	853,000 r/	909,000
Aluminum-base	37,800 r/	46,800
Nickel-base	91	91
Zinc-base	--	--
Total	891,000 r/	956,000
Old scrap:		
Copper-base	394,000	465,000
Aluminum-base	33,400 r/	30,300
Nickel-base	47	28
Zinc-base	17	19
Total	428,000	496,000
Grand total	1,320,000 r/	1,450,000
Form of recovery:		
As unalloyed copper:		
At electrolytic plants	193,000	233,000
At other plants	163,000 r/	161,000
Total	355,000 r/	394,000
In brass and bronze	892,000 r/	979,000
In alloy iron and steel	739	743
In aluminum alloys	70,700 r/	77,500
In other alloys	110	113
In chemical compounds	305	252
Total	964,000 r/	1,060,000
Grand total	1,320,000 r/	1,450,000

r/ Revised.
1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 7
COPPER RECOVERED AS REFINED COPPER AND IN ALLOYS AND OTHER FORMS
FROM COPPER-BASE SCRAP PROCESSED IN THE UNITED STATES, BY TYPE OF OPERATION 1/

(Metric tons)

	From new scrap		From old scrap		Total	
Type of operation	1996	1997	1996	1997	1996	1997
Ingot makers	36,200	35,200	90,200	96,500	126,000	132,000
Refineries 2/	123,000 r/	91,400	222,000	292,000	345,000 r/	383,000
Brass and wire-rod mills	677,000 r/	771,000	46,700	32,800	724,000 r/	804,000
Foundries and manufacturers	17,100	11,200	35,900	43,900	53,000	55,100
Chemical plants	305	252	--	--	305	252
Total	854,000 r/	909,000	394,000	465,000	1,250,000 r/	1,370,000

r/ Revised.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Electrolytically refined and fire-refined scrap based on source of material at smelter level.

TABLE 8
PRODUCTION OF SECONDARY COPPER AND COPPER-ALLOY PRODUCTS
IN THE UNITED STATES, BY ITEM PRODUCED FROM SCRAP 1/

(Metric tons)

Item produced from scrap	1996	1997
Unalloyed copper products:		
Electrolytically refined copper	193,000	233,000
Fire-refined copper	152,000 r/	151,000
Copper powder	10,100	9,880
Copper castings	706	739
Total	355,000 r/	394,000
Alloyed copper products:		
Brass and bronze ingots:		
Tin bronzes	12,500	14,300
Leaded red brass and semi-red brass	92,000	88,200
High leaded tin bronze	12,000	14,100
Yellow brass	6,810	7,380
Manganese bronze	7,400	7,510
Aluminum bronze	7,910	7,430
Nickel silver	1,860	2,280
Silicon bronze and brass	5,630	6,240
Copper-base hardeners and master alloys	13,700	13,400
Miscellaneous	11	600
Total	160,000	162,000
Brass mill and wire rod mill products	888,000	953,000
Brass and bronze castings	44,000	45,300
Brass powder	634	740
Copper in chemical products	305	252
Grand total	1,450,000 r/	1,550,000

r/ Revised.
1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 9
COMPOSITION OF SECONDARY COPPER-ALLOY PRODUCTION IN THE UNITED STATES 1/

(Metric tons)

	Copper	Tin	Lead	Zinc	Nickel	Aluminum	Total
Brass and bronze ingot production: 2/							
1996	129,000 r/	4,870 r/	8,270 r/	17,300 r/	282 r/	28 r/	160,000
1997	130,000	5,020	8,720	17,300	269	22	162,000
Secondary metal content of brass mill products:							
1996	717,000	886	7,270	160,000	W	W	888,000
1997	769,000	1,050	7,810	174,000	W	W	953,000
Secondary metal content of brass and bronze castings:							
1996	39,000	1,050	1,460	2,330	85	120	44,000
1997	40,700	693	1,010	2,670	78	151	45,300

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes approximately 96% from scrap and 4% from other than scrap.

TABLE 10
CONSUMPTION AND YEAR ENDING STOCKS OF COPPER-BASE SCRAP 1/

(Metric tons, gross weight)

Scrap type and processor	1996 Consumption	1996 Stocks	1997 Consumption	1997 Stocks
No. 1 wire and heavy:				
Smelters, refiners and ingot makers	142,000 r/	6,440 r/	149,000	8,320
Brass and wire-rod mills	363,000 r/	NA	413,000	NA
Foundries and miscellaneous manufacturers	28,500	NA	35,800	NA
No. 2 mixed heavy and light:				
Smelters, refiners and ingot makers	216,000 r/	6,510 r/	230,000	6,310
Brass and wire-rod mills	34,600	NA	34,900	NA
Foundries and miscellaneous manufacturers	3,880	NA	2,770	NA
Total unalloyed scrap:				
Smelters, refiners and ingot makers	358,000 r/	12,900 r/	379,000	14,600
Brass and wire-rod mills	397,000 r/	14,500 r/	448,000	13,800
Foundries and miscellaneous manufacturers	32,400	2,480 r/	38,600	2,990
Red brass: 2/				
Smelters, refiners and ingot makers	58,600	2,250	58,300	2,280
Brass mills	7,390	NA	8,780	NA
Foundries and miscellaneous manufacturers	15,100	NA	10,100	NA
Leaded yellow brass:				
Smelters, refiners and ingot makers	27,400	1,500	28,000	1,400
Brass mills	371,000	NA	404,000	NA
Foundries and miscellaneous manufacturers	1,930	NA	1,930	NA
Yellow and low brass: All plants	59,600	725	53,900	852
Cartridge cases and brass: All plants	46,100	NA	66,800	NA
Auto radiators:				
Smelters, refiners and ingot makers	65,700	1,670	72,200	1,390
Foundries and miscellaneous manufacturers	4,700	NA	4,470	NA
Bronzes:				
Smelters, refiners and ingot makers	12,500	793	12,100	775
Brass mills and miscellaneous manufacturers	13,400	NA	14,900	NA
Nickel-copper alloys: All plants	23,300	360	17,800	424
Low grade and residues:				
Smelters, refiners and miscellaneous manufacturers	83,100	4,080	87,100	14,000
Other alloy scrap: 3/				
Smelters, refiners and ingot makers	42,000	2,410	38,400	2,050
Brass mills and miscellaneous manufacturers	6,180	NA	6,570	NA
Total alloyed scrap:				
Smelters, refiners and ingot makers	297,000	13,800	303,000	23,200
Brass mills	512,000	25,100	558,000	29,100
Foundries and miscellaneous manufacturers	28,900	3,570	24,100	2,920
Total scrap:				
Smelters, refiners and ingot makers	655,000 r/	26,700 r/	682,000	37,900
Brass and wire-rod mills	909,000 r/	39,600 r/	1,010,000	42,900
Foundries and miscellaneous manufacturers	61,300	6,050	62,700	5,910

r/ Revised. NA Not available.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes composition turnings, silicon bronze, railroad car boxes, cocks and faucets, gilding metal, and commercial bronze.

3/ Includes refinery brass, beryllium copper, and aluminum bronze.

TABLE 11
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP 1/ 2/

(Metric tons, gross weight)

Type of operation	From new scrap		From old scrap		Total	
	1996	1997	1996	1997	1996	1997
Ingot makers	47,700	46,900	126,000	141,000	174,000	188,000
Smelters and refineries	122,000 r/	122,000	359,000	373,000	481,000 r/	495,000
Brass and wire-rod mills	852,000 r/	972,000	57,700	33,800	909,000 r/	1,010,000
Foundries and miscellaneous manufacturers	21,000	13,600	40,200	49,100	61,300	62,700
Total	1,040,000	1,150,000	583,000	597,000	1,630,000	1,750,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Consumption at brass and wire-rod mills assumed equal to receipts.

TABLE 12
FOUNDRIES AND MISCELLANEOUS MANUFACTURERS CONSUMPTION
OF BRASS INGOT AND REFINED COPPER AND COPPER SCRAP
IN THE UNITED STATES 1/

(Metric tons)

Ingot type	1996	1997
Tin bronzes	33,900	31,200
Leaded red brass and semired brass	69,700 r/	73,800
Yellow, leaded, low brass 2/	8,350 r/	7,930
Manganese bronze	3,660 r/	5,780
Nickel silver 3/	960	2,040
Aluminum bronze	3,810 r/	4,110
Hardeners and master alloys 4/	2,200 r/	2,240
Total brass ingot	123,000	127,000
Refined copper consumed	45,500 r/	47,500
Copper scrap consumed	61,300	62,700

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes silicon bronze and brass.

3/ Includes copper nickel and nickel bronze and brass.

4/ Includes special alloys.

TABLE 13
AVERAGE PRICES FOR COPPER SCRAP AND ALLOY-INGOT, BY TYPE

(Cents per pound)

Year	Brass mills	Refiners	Dealers' buying (New York)		Alloy-ingot (New York)	
	No. 1 scrap	No. 2 scrap	No. 2 scrap	Red brass turnings and borings	No. 115 brass (85-5-5-5)	Yellow brass (405)
1996	101.53	84.42	75.27	51.85	140.25	136.50
1997	99.58	81.98	69.15	51.25	138.50 1/	135.25 1/

1/ List price quotes effective July 1996.

Source: American Metal Market.

TABLE 18
U.S. EXPORTS OF COPPER SCRAP, BY COUNTRY 1/

	Unalloyed copper scrap				Copper-alloy scrap			
	1996		1997		1996		1997	
Country	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Belgium	9,380	$20,244	3,850	$22,553	1,440	$3,708	740	$1,636
Canada	104,000	170,000	116,000	174,000	41,900	53,900	44,300	57,300
China	12,600	18,900	20,000	30,000	24,900	27,400	21,100	18,000
Germany	7,190	10,700	13,700	37,700	5,290	5,660	2,810	4,300
Hong Kong	28,600	41,200	27,200	42,800	43,200	62,900	32,500	41,300
India	3,960	3,740	3,510	3,790	29,800	31,600	24,100	25,500
Japan	19,300	61,000	15,500	45,900	18,700	33,700	16,100	28,700
Korea, Republic of	5,140	11,600	2,490	3,810	11,200	19,400	11,400	17,700
Mexico	2,470	4,010	859	1,590	4,030	6,000	7,940	15,700
Taiwan	1,340	2,200	677	1,110	4,970	6,460	4,070	5,690
Thailand	37	46	40	56	2,460	4,120 r/	1,710	2,460
United Arab Emirates	(2/)	(2/)	–	–	119 r/	211 r/	914	1,040
Other	3,620 r/	6,820 r/	1,410	1,740	7,310 r/	11,200 r/	6,700	7,890
Total	197,000	350,000	205,000	365,000	195,000	266,000	174,000	227,000

r/ Revised.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Revised to zero.

Source: Bureau of the Census.

TABLE 19
U.S. IMPORTS FOR CONSUMPTION OF COPPER SCRAP, BY COUNTRY 1/

	Unalloyed copper scrap		Copper-alloy scrap		
Country or Territory	Quantity (metric tons)	Value 2/ (thousands)	Gross weight (metric tons)	Copper content e/ 3/ (metric tons)	Value 2/ (thousands)
1996	90,300	$170,000	122,000	87,700	$171,000
1997:					
Argentina	–	–	185	133	345
Austria	–	–	28	20	678
Belgium	175	118	1,190	853	1,400
Canada	54,600	99,700	56,500	40,700	90,800
Chile	1,380	3,000	393	283	814
Colombia	1,650	2,880	1,820	1,310	3,420
Costa Rica	1,120	1,830	560	403	590
Dominican Republic	1,230	2,300	982	707	1,630
Germany	–	–	80	58	158
Japan	–	–	666	480	463
Malaysia	–	–	1,130	812	2,150
Mexico	23,800	42,500	38,700	27,800	59,900
Netherlands	–	–	317	228	409
Panama	1,200	2,120	1,170	842	1,460
Peru			1,070	768	982
Russia	925	1,990	778	560	913
Salvador	–	–	701	505	922
Spain	–	–	449	323	975
Taiwan	75	374	1,180	847	2,980
Ukraine	–	–	335	241	517
United Kingdom	–	–	1,870	1,340	3,610
Venezuela	1,200	1,850	2,330	1,680	2,230
Other	4,020	6,960	7,920	5,700	7,900
Total	91,400	166,000	120,000	86,700	185,000

e/ Estimated.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ C. i. f. value at U.S. Port.
3/ Under the Harmonized Tariff System that was implemented January 1989, copper content is no longer available. Content is estimated to be 72% of gross weight.

Source: Bureau of the Census.

Table 16.--U.S. copper scrap and copper alloy consumption and trade
(Metric tons)

	1970	1971	1972	1973	1974	1975	1976
Scrap consumption:							
By plant type:							
Brass mill	541,647	593,426	677,453	704,623	644,908	470,252	600,968
Secondary smelters/refiners	975,271	852,352	873,448	912,585	895,536	611,539	709,941
Foundries and miscellaneous manufacturers	70,344	59,831	65,044	72,994	72,104	54,520	62,516
Total, gross weight	1,587,262	1,505,609	1,615,945	1,690,202	1,612,548	1,136,311	1,373,425
By source:1/							
Old scrap	710,603	601,412	613,159	625,009	620,300	441,156	518,504
New scrap	876,658	904,197	1,002,786	1,065,194	992,248	695,155	854,921
By type of scrap:							
Unalloyed copper:							
No. 1 wire	276,529	270,116	300,705	382,442	373,164	259,407	302,214
No. 2 wire, mixed	314,158	272,039	301,617	314,218	311,240	220,005	244,891
Total unalloyed	590,687	542,155	602,322	696,660	684,404	479,412	547,105
Red brass	25,467	75,946	79,386	76,831	74,204	48,959	57,264
Cartridge brass	105,960	130,586	102,225	80,788	70,261	50,859	70,963
Yellow brass	291,325	278,740	366,886	367,750	325,036	231,123	293,328
Automobile radiators	51,449	58,872	66,714	62,364	62,791	48,372	61,762
Bronze	31,318	28,400	29,168	31,366	29,173	21,876	22,441
Nickle silver/cupronickel	20,819	25,547	29,575	29,842	36,415	38,127	33,528
Low brass	44,813	49,252	38,538	26,688	28,451	28,410	45,628
Aluminum bronze	1,345	1,068	1,253	1,781	1,358	909	1,244
Low-grade scrap and residue, etc.	346,419	305,440	291,718	307,581	291,290	183,123	234,559
Others	77,660	9,603	8,159	8,551	9,165	5,141	5,603
Total, alloyed	996,575	963,454	1,013,623	993,542	928,144	656,899	826,320
At brass mills, by type of scrap:							
No. 1 wire	106,655	140,635	156,616	206,913	186,236	124,811	144,469
No. 2 wire, mixed	31,964	35,984	51,602	54,681	54,134	39,064	65,116
Cartridge brass	105,635	130,453	102,040	80,657	70,171	50,791	70,786
Yellow brass	232,800	214,973	302,408	308,543	271,304	190,472	244,100
Bronze	5,386	4,418	3,501	4,982	4,825	3,450	3,827
Nickel silver/cupronickel	17,131	21,546	26,307	25,590	32,595	35,592	30,655
Mixed alloy scrap	1,216	--	--	--	--	--	--
Low brass	40,415	45,022	34,563	22,965	25,282	25,716	41,693
Aluminum bronze	544	396	415	292	361	357	322
Total, gross weight	541,647	593,426	677,453	704,623	644,908	470,252	600,968

U.S. copper scrap and copper alloy consumption and trade. Source: U.S. Geological Survey

	1970	1971	1972	1973	1974	1975	1976
Copper recovered from scrap:2/							
Refined from scrap	464,124	363,475	383,960	421,953	450,787	312,513	340,335
Unalloyed powder and castings	10,644	25,794	21,923	17,690	14,878	10,002	14,128
Total unalloyed products	474,768	389,269	405,883	439,643	465,665	322,515	354,463
Brass and bronze	630,936	669,334	739,529	710,688	714,062	518,902	635,795
In aluminum alloys	23,148	24,033	29,344	34,093	34,739	35,909	42,653
From other alloys	2,954	6,095	5,468	6,080	5,081	4,426	6,064
Total copper from scrap3/	1,131,806	1,088,731	1,180,223	1,190,503	1,219,547	881,752	1,038,975
Brass mill materials consumption:							
Copper-base scrap	541,647	593,426	677,453	704,623	644,908	470,252	600,968
Refined copper	599,271	594,916	605,290	648,127	607,957	398,227	530,481
Alloy-ingot	5,628	11,933	15,142	13,130	21,684	5,121	7,548
Slab zinc	102,971	123,724	163,095	168,626	154,828	97,016	142,789
Total	1,249,517	1,323,999	1,460,980	1,534,506	1,429,377	970,616	1,281,786
U.S. trade, by scrap type:2/							
Alloyed scrap:							
Imports (copper content)	2,438	7,867	9,451	11,326	14,859	8,084	12,413
Exports:							
Gross weight	100,121	69,737	61,258	100,112	107,227	90,004	69,587
Copper content	65,078	45,329	39,818	65,073	69,698	58,503	45,232
Unalloyed scrap (copper content):							
Imports	1,207	4,645	7,563	13,353	22,884	10,268	14,241
Exports	15,018	16,724	15,821	38,361	37,505	40,825	33,995

U.S. copper scrap and copper alloy consumption and trade. Source: U.S. Geological Survey

	1977	1978	1979	1980	1981	1982	1983
Scrap consumption:							
By plant type:							
Brass mill	615,205	637,942	703,138	608,205	633,879	508,478	624,466
Secondary smelters/refiners	745,980	918,238	1,281,257	1,168,398	1,115,275	946,480	693,678
Foundries and miscellaneous manufacturers	67,238	86,799	88,831	74,302	76,413	59,889	63,472
Total, gross weight	1,428,423	1,642,979	2,073,226	1,850,905	1,825,567	1,514,847	1,381,616
By source:1/							
Old scrap	555,140	664,289	830,335	791,080	776,984	659,574	574,376
New scrap	873,283	978,690	1,242,891	1,059,825	1,048,583	855,273	807,240
By type of scrap:							
Unalloyed copper:							
No. 1 wire	304,928	331,910	392,112	380,386	346,295	279,877	271,990
No. 2 wire, mixed	262,413	326,112	447,267	466,951	466,174	417,004	324,665
Total unalloyed	567,341	658,022	839,379	847,337	812,469	696,881	596,655
Red brass	66,001	74,255	80,504	68,171	69,562	55,671	52,812
Cartridge brass	74,601	82,852	80,520	61,354	67,948	54,057	66,306
Yellow brass	294,100	332,779	354,015	299,661	294,156	244,478	328,945
Automobile radiators	73,051	83,453	94,123	65,546	65,058	58,942	64,814
Bronze	24,413	23,299	24,574	22,461	21,708	18,195	20,949
Nickle silver/cupronickel	28,247	18,894	28,449	17,265	22,756	17,564	22,912
Low brass	65,469	53,057	54,377	55,533	61,616	43,849	8,474
Aluminum bronze	1,043	941	1,605	1,551	1,705	1,396	2,137
Low-grade scrap and residue, etc.	226,705	305,630	506,757	404,398	400,981	318,221	205,700
Others	7,452	9,797	8,923	7,628	7,608	5,593	11,912
Total, alloyed	861,082	984,957	1,233,847	1,003,568	1,013,098	817,966	784,961
At brass mills, by type of scrap:							
No. 1 wire	148,425	168,534	194,951	185,338	183,583	160,194	188,357
No. 2 wire, mixed	55,686	39,579	50,647	44,280	60,304	36,670	52,535
Cartridge brass	74,488	82,756	80,458	61,205	67,693	54,006	66,306
Yellow brass	245,044	277,189	295,843	247,867	241,163	196,985	279,226
Bronze	4,728	5,234	5,418	4,414	3,903	4,024	3,955
Nickel silver/cupronickel	25,362	16,119	24,857	13,934	19,746	15,020	19,963
Mixed alloy scrap	--	--	--	--	--	--	--
Low brass	61,151	48,288	50,693	50,932	57,305	41,522	14,095
Aluminum bronze	320	243	271	235	182	57	29
Total, gross weight	615,205	637,942	703,138	608,205	633,879	508,478	624,466

	1977	1978	1979	1980	1981	1982	1983
Copper recovered from scrap:2/							
Refined from scrap	349,646	420,103	498,459	515,083	482,837	467,549	401,668
Unalloyed powder and castings	15,075	17,017	17,812	19,473	20,966	14,016	17,186
Total unalloyed products	364,721	437,120	516,271	534,556	503,803	481,565	418,854
Brass and bronze	670,712	755,978	976,402	850,188	850,546	660,152	625,349
In aluminum alloys	44,218	48,153	53,608	47,306	47,728	41,930	36,704
From other alloys	5,774	5,984	6,244	5,377	5,320	3,819	2,672
Total copper from scrap3/	1,085,425	1,247,235	1,552,525	1,437,427	1,407,397	1,187,466	1,083,579
Brass mill materials consumption:							
Copper-base scrap	615,205	637,942	703,138	608,205	633,879	508,478	624,466
Refined copper	570,274	619,206	610,177	511,627	536,210	393,205	500,263
Alloy-ingot	6,606	6,776	4,050	6,087	17,824	12,727	14,759
Slab zinc	119,709	128,006	127,628	90,413	104,330	74,483	99,664
Total	1,311,794	1,391,930	1,444,993	1,216,332	1,292,243	988,893	1,239,152
U.S. trade, by scrap type:2/							
Alloyed scrap:							
Imports (copper content)	14,081	13,199	14,983	13,704	17,539	18,844	31,832
Exports:							
Gross weight	74,410	106,717	116,992	129,767	96,149	91,592	81,048
Copper content	48,367	69,366	76,045	84,349	62,497	59,535	52,681
Unalloyed scrap (copper content):							
Imports	12,097	15,436	14,652	16,053	17,639	16,459	23,086
Exports	34,375	49,076	54,080	61,225	50,078	54,419	47,986

U.S. copper scrap and copper alloy consumption and trade. Source: U.S. Geological Survey

	1984	1985	1986	1987	1988	1989	1990
Scrap consumption:							
By plant type:							
Brass mill	675,472	607,136	635,896	687,549	757,047	725,586	754,386
Secondary smelters/refiners	689,375	726,945	800,019	823,032	797,682	828,905	777,833
Foundries and miscellaneous manufacturers	68,610	66,662	63,778	71,670	64,507	66,097	75,654
Total, gross weight	1,433,457	1,400,743	1,499,693	1,582,251	1,619,236	1,620,588	1,607,873
By source:1/							
Old scrap	572,311	570,923	612,896	675,088	644,314	673,258	696,125
New scrap	861,146	840,856	882,113	903,548	974,916	943,501	856,892
By type of scrap:							
Unalloyed copper:							
No. 1 wire	270,228	350,484	390,951	410,636	416,655	418,893	424,128
No. 2 wire, mixed	367,436	259,313	324,975	383,862	409,332	392,755	342,658
Total unalloyed	637,664	609,797	715,926	794,498	825,987	811,648	766,786
Red brass	58,988	89,587	75,252	56,366	53,638	68,448	74,954
Cartridge brass	70,781	66,944	71,549	78,461	139,074	126,224	97,726
Yellow brass	369,673	292,777	293,207	323,969	332,212	320,107	366,052
Automobile radiators	75,440	53,539	55,927	62,260	104,364	96,395	94,947
Bronze	24,593	19,818	20,151	21,050	21,296	21,092	18,608
Nickle silver/cupronickel	21,811	15,905	13,582	9,617	14,968	23,619	21,303
Low brass	8,301	7,035	6,357	5,725	6,737	6,060	5,604
Aluminum bronze	973	994	970	965	1,005	2,696	2,246
Low-grade scrap and residue, etc.	150,535	111,241	115,888	209,216	101,223	102,448	136,395
Others	14,698	133,106	130,884	20,124	18,732	41,806	23,252
Total, alloyed	795,793	790,946	783,767	787,753	793,249	808,895	841,087
At brass mills, by type of scrap:							
No. 1 wire	190,299	193,265	224,114	246,300	271,233	265,038	256,127
No. 2 wire, mixed	68,543	65,311	52,802	56,247	57,667	46,316	64,298
Cartridge brass	70,547	66,984	66,937	78,140	139,349	125,669	97,726
Yellow brass	307,493	265,820	256,875	279,721	256,226	247,535	220,047
Bronze	4,880	3,517	4,094	4,304	4,568	4,613	5,244
Nickel silver/cupronickel	19,245	13,565	10,561	6,177	12,274	19,199	21,303
Mixed alloy scrap	--	--	--	--	--	--	89,641
Low brass	14,447	12,524	12,238	12,542	15,711	17,162	5,507
Aluminum bronze	18	37	7	--	13	9	238
Total, gross weight	675,472	621,023	627,628	683,431	757,041	725,541	754,386

U.S. copper scrap and copper alloy consumption and trade. Source: U.S. Geological Survey

	1984	1985	1986	1987	1988	1989	1990
Copper recovered from scrap:2/							
Refined from scrap	306,537	371,787	292,686	311,312	347,442	376,595	328,196
Unalloyed powder and castings	31,652	15,882	121,760	112,445	109,036	112,687	121,705
Total unalloyed products	338,189	387,669	414,446	423,757	456,478	489,282	449,901
Brass and bronze	735,154	716,833	662,242	736,725	800,221	774,701	800,332
In aluminum alloys	43,511	29,423	45,171	47,932	45,632	41,719	55,436
From other alloys	3,060	5,159	4,669	5,645	4,560	2,753	3,576
Total copper from scrap3/	1,119,914	1,139,084	1,126,528	1,214,059	1,306,891	1,308,455	1,309,245
Brass mill materials consumption:							
Copper-base scrap	675,472	607,136	635,896	687,549	757,041	725,586	754,386
Refined copper	576,160	513,985	564,875	488,629	486,843	461,022	445,221
Alloy-ingot	16,553	13,314	15,330	28,975	3,104	7,331	906
Slab zinc	116,392	68,437	64,883	76,454	81,678	70,584	73,728
Total	1,384,577	1,202,872	1,280,984	1,281,607	1,328,666	1,264,523	1,274,241
U.S. trade, by scrap type:2/							
Alloyed scrap:							
Imports (copper content)	32,016	23,517	28,856	32,869	36,122	e/57,110	e/71,071
Exports:							
Gross weight	108,331	140,245	152,102	185,279	199,953	212,522	184,766
Copper content	70,415	91,161	98,867	120,430	129,969	138,139	120,098
Unalloyed scrap (copper content):							
Imports	23,005	23,014	27,216	33,121	37,152	31,577	35,904
Exports	80,810	134,300	136,422	108,535	119,773	154,935	139,624

e/Estimated.
1/Gross weight includes copper-base scrap only.
2/Data revisions made since latest Bureau publications.
3/Data may not add to totals shown because of independent rounding.

U.S. copper scrap and copper alloy consumption and trade. Source: U.S. Geological Survey

Institute of Scrap Recycling Industries, Inc.

Superfund Guidance

Volume Seven

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Arranging for Recycling: Transactions Involving Lead And Whole Batteries

The following document provides historical statistics and documentation illustrating the use of lead scrap and whole batteries in the manufacture of lead-bearing materials. This document has been prepared to assist members in documenting the requirements listed below.

This document is provided for informational purposes only and does not constitute legal advice. Accordingly, members with questions regarding any aspect of these rules should contact their legal counsel.

Executive Summary:

On Nov. 29, 1999, President Clinton signed into law the Superfund Recycling Equity Act. This law clarifies Superfund to state that recycling is not disposal, and shipping for recycling is not arranging for disposal. As a result, recyclers may no longer be held responsible for cleaning up a contaminated site when the site's owner or operator caused the contamination. This necessary clarification removes an impediment to reaching America's recycling goals while saving many recycling businesses.

The new law builds a test to determine what are recycling transactions that should be encouraged under the legislation and what transactions are really treatment or disposal arrangements cloaked in the mantle of recycling.

For past and future transactions, a recycler must be able to demonstrate all of the following:

1) Recyclable material met a commercial specification. {127(c)(1)}

2) A market existed for the recyclable material involved in the transaction. {127(c)(2)}

3) A substantial portion of the recyclable material was made available for use as a feedstock for the manufacture of a new saleable product. {127(c)(3)}

4) The recyclable material could have been a replacement or substitute for a virgin material, or the product to be made from the recyclable material could have been a replacement or substitute for a product made, in whole or in part, from a virgin raw material. {127(c)(4)}

General Information

> "Lead in metallic form is readily recoverable, so in most countries the collection of scrap for recycling is an important business, which helps to ensure that resources are not wasted. It also saves energy, because recycling uses much less energy than primary production."
>
> —Lead Development Association

The use of lead, one of the oldest metals known to and used by man, dates to about 5000 BC. It was used by the ancient Egyptian, Sumerian, Chinese, and Greek cultures. The Romans used lead water pipes and barrel hoops and, in the Middle Ages, lead was used extensively as a construction material. Not too many years later it became a common material for firearms ammunition, an application which currently accounts for some 400,000 tons of consumption in the U.S. annually. Present when the earth was formed, lead is a naturally occurring element. It is usually associated with other minerals, notably zinc, silver, and copper.

Because lead is easily re-melted and refined, secondary or recycled lead is now, and has been for years, a significant factor in the lead market. Lead has the highest recycling rate of all industrial metals in the world. In the U.S., about 80% of all lead is used in automotive type batteries, and more than 95% of these batteries are recycled.

Secondary lead is produced from old scrap, mainly lead-acid batteries and from new or process scrap, which includes smelter/refinery drosses and residues as well as scrap recovered from lead fabricating industries.

Of the total scrap supply consumed by secondary lead consumers, the greater portion consists of so-called "old" scrap, as opposed to "new" scrap. According to U.S. Bureau of Mines statistics, on a ten-year basis from 1959 to 1969, the ratio of old scrap vs. new scrap collected by recyclers was 80% old and 20% new scrap. This can be explained by the fact that much of the lead in use continues to return to the scrap pool.[1]

About 76% of the 1.45 million tons of refined lead produced in the United States in 1998 was recovered from recycled scrap, again primarily spent lead-acid storage batteries. The recycled batteries consisted of starting, lighting, and igntion-type (SLI) used in automotive applications, and the industrial-type used in such applications as airport ground-support equipment, bicycles, floor sweepers and scrubbers, golf carts and other human and materials transport vehicles, industrial forklifts, lawn equipment, load-leveling equipment for commercial electrical power systems, mining vehicles, and uninterruptible power-supply equipment.[2]

The U.S. lead industry relies heavily on SLI batteries as a source of scrap, but there are other significant sources as well. In fact, about 9% of the recycled lead in 1987 was recovered from other lead-based sources. These other sources include cable coverings, pipe, sheet, solder, and purchased materials such as smelter drosses, building construction materials, flue dust, slags, and sludges. Presently an estimated 75% of the total scrap lead recovered comes from spent battery plates. The plates and other goods serve as feedstocks for secondary smelters and refiners, who usually produce soft or antimonial lead from the scrap. Few secondary lead materials are processed without refining due to ever changing customer specifications.[3]

In addition to hard and soft lead, another popular alloy of lead contains tin. This comes in

varying percentages of tin content which when mixed with lead produces certain solders, babbits, etc. This is also prevalent in "type" metal, the letters that type setters in printing plants used for setting up their presses. Pure tin scrap is generally very rare and is called block tin in the scrap trade.

The value of tin/lead alloy is generally based upon tin content—the higher the tin content the more that is paid for such material. Today, babbitt is a very small portion of the volume of lead handled by most scrap processors.

Solders will run from a minimum of 15% tin (body solder) to a high of 50%-60% tin. High-speed babbits range from 50% to 90% tin whereas low-speed babbitt probably has no more value than scrap lead itself.[4]

Commercial Specifications {127(c)(1)}

Under Section 127 (c)(1) of the new law, a recycler must be able to demonstrate that the recyclable material met a commercial specification at the time of the transaction. The specification can include those published by trade associations such as ISRI, or other historically or widely utilized specifications.

ISRI's Scrap Specifications Circular (1998) contains over ten different guidelines for lead scrap. These specifications can be viewed by members at www.isri.org.

Often, recyclers will use one of the following widely recognized broad guidelines to describe their recyclable commodity.
Mixed Common Babbit High Tin Base Babbitt
Lead Dross Pig Lead
Mixed Hard/Soft Lead Scrap Lead Battery Plates
Cable Lead Tern Metal
Hard Lead Lead Solder
Soft Lead Scrap Ballast
Whole Batteries

Scrap lead solids can usually be classified as "hard" (antimonial) lead or as "soft" (relatively pure) lead.

Aside from published specifications or guidelines, each consumer may develop his or her own set of specifications based upon the individual facility's requirements. This may be necessary because the consumer has specific equipment, processes or products unique to the facility and require a unique mix of raw material inputs.

The specification, whether broad or specific, will often be based upon the lead content or physical nature of the material. Most of the terminology used in the scrap business defines origin, use, composition, or grade of the scrap.

Specific terminology aside, at the time of the transaction, the consumer and the recycler agree to the sale of a specific material. The agreement may be memorialized in a purchase order, sales agreement, invoice, or in another fashion. By entering into the deal and subsequently accepting the material shipped by the recycler, the consumer confirms that the recyclable material met the desired specification. Therefore, one can reference the terms of the agreement as confirmation the recyclable material met (meets) a commercial specification.

Established Markets {127(c)(2)}

To be afforded liability relief, a recycler must be able to demonstrate under Section 127 (c)(2) that a market existed for the recyclable material. Evidence of a market can include, but is not limited to, a third party published price (including a negative price), a market with more than one buyer or seller for which there is a documentable price, and a history of trade in the recyclable material.

According to the U.S. Geological Survey (USGS), non-specification lead metal has been traded on the LME (London Metal Exchange) since the turn of the century, but it was not until 1920 that the metal received official recognition. Today, the LME is generally recognized as the principal lead-price reference, though a domestic producer price is also published. Refined lead prices are often quoted in terms of a premium over the cash LME quotation.

The following chart illustrates scrap lead's share of the market (in short tons):

The U.S. Lead Market (in tons)

	Primary Production	Lead Recovered (Old and New Scrap)	Apparent Lead Consumption*	Scrap Market Share**	Scrap Exports
1986	408,000	689,000	1,321,000	52%	70,000
1987	412,000	783,000	1,379,000	57%	58,000
1988	432,000	812,000	1,381,000	59%	90,000
1989	437,000	983,000	1,507,000	65%	59,000
1990	445,000	1,017,000	1,462,000	70%	79,000
1991	381,000	974,000	1,391,000	70%	96,000
1992	336,000	1,010,000	1,455,000	69%	66,000
1993	369,000	984,000	1,512,000	65%	57,000
1994	387,000	1,006,000	1,586,000	63%	91,000
1995	412,000	958,000	1,581,000	61%	115,000

All figures are rounded. Sources: U.S. Bureau of Mines, U.S Department of Commerce.

*Defined as primary production + recovered lead + net trade + stock changes.

**Calculated by dividing recovered lead by apparent lead consumption.

The primary motivation for recycling lead, as in other recyclables, is economics. "As lead prices rise, recycling rates ratchet up," notes Bob Garino, Director of Commodities for the Institute of Scrap Recycling Industries. "It is a function of the absolute amount of scrap, time and demand," he observes. The secondary lead industry thus is largely influenced by the relative price of lead and the relative supply/demand fundamentals that determine the overall consumption of lead in general.

In regard to scrap battery prices, a good rule of thumb is that the average drained battery will produce approximately 50% of its gross drained weight into metallic lead. Once its contents are smelted, for batteries, the recovery percentage generally drops to 45%. The average difference in price between a wet or a dry battery ranges from ½ cent to ¾ cent per pound.[5]

Smelters often will quote a flat price per pound for batteries. Historically, however, the method of pricing batteries is based upon "metal content" (lead and antimony), which can be determined by chemical analysis of samples taken from lead. The smelter takes the price of virgin (producer) lead and multiplies that price by the percentage of lead contained, as

determined by chemical analysis. From this price he will deduct a "smelting charge" which will vary based upon market conditions. For example, if the published price of virgin lead is 20 cents per pound, and a smelter receives a load of material which contains 72% metal content, the facility will multiply 20 cents by 72%, which equals 14.4 cents per pound. If the facility smelting charge is $100.00 per ton (5 cents per pound), he or she will then deduct 5 cents per pound from 14.4 cents and pay the shipper 9.4 cents per pound for the battery plates delivered to the plant.[5]

> "At the end of 1998, the market price for whole scrap batteries averaged about 6 cents per pound, translating to a lead price of 12 cents per pound, assuming the average amount of lead in such batteries to be about 50%." (USGS)

In addition to the variation in the prices of virgin lead, tin and antimony having a direct effect upon lead scrap, supply and demand also have a very strong and direct effect on the price of scrap material.

Secondary lead production is extremely price elastic, particularly in the U.S., and responds quickly to relatively short-term movements in the lead price. This is due partly to the existence of excess capacity, and partly to the flexible nature of the U.S. labor market. In addition, secondary lead smelters tend to have a higher ratio of variable to fixed costs than do primary smelters, which allows foundries greater flexibility in varying levels of output.[6]

The following chart is a sample of historic prices for scrap lead:

U.S. PRICES OF SMELTERS' SCRAP LEAD

Buying prices heavy soft lead. In dollars per hundred weight. Compiled by American Metal Market.

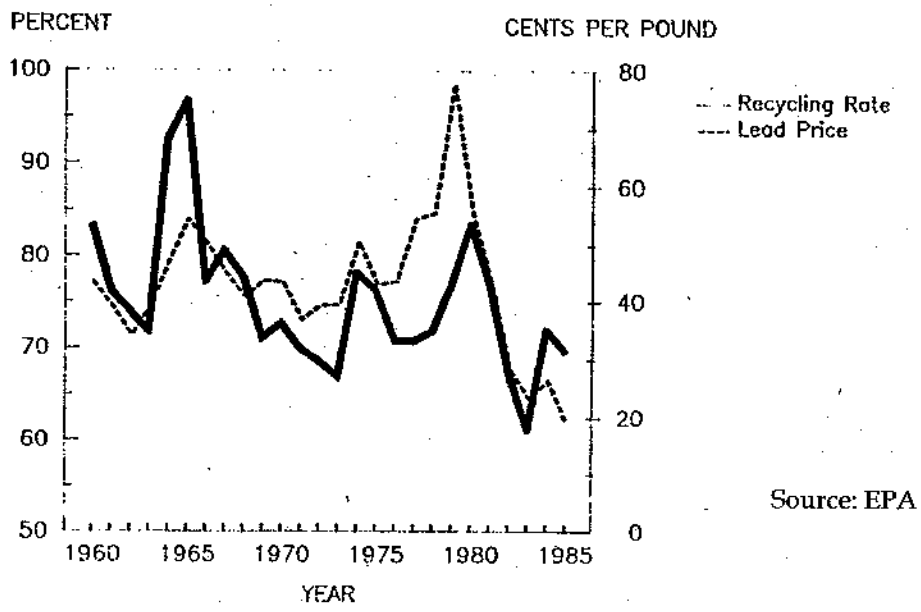
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Jan	24.00	18.27	15.00	15.00	12.50	19.75	20.50	25.50	20.25
Feb	24.00	17.00	15.00	15.00	12.50	19.75	20.50	24.66	20.25
Mar	21.00	17.00	15.00	15.00	12.50	19.75	20.50	23.50	20.25
Apr	21.00	17.00	15.95	14.14	12.50	19.75	20.50	23.50	20.25
May	21.00	16.45	16.00	14.00	12.50	20.05	20.50	23.50	20.25
Jun	22.52	14.20	16.00	14.00	12.50	20.50	23.90	23.50	19.60
Jul	26.43	13.00	16.00	13.69	15.70	20.50	25.50	23.50	19.50
Aug	27.00	13.14	16.00	13.45	16.50	20.50	20.50	23.50	19.50
Sep	27.00	18.86	18.90	14.15	16.50	20.50	20.50	23.50	19.50
Oct	24.91	15.00	20.00	12.88	18.17	20.50	25.50	23.50	19.50
Nov	21.00	15.00	16.39	12.50	18.25	20.50	20.50	21.33	17.71
Dec	19.78	15.00	15.00	12.50	19.25	20.50	20.50	20.25	17.50
Avg	**23.30**	**15.83**	**16.27**	**13.86**	**14.95**	**20.28**	**23.28**	**23.31**	**19.51**

In 1998, recycled lead was produced by 20 companies operating 29 lead recovery plants. Secondary lead, derived principally from scrapped lead-acid batteries, accounted for 76% of refined lead production in the United States. Of the total lead recycled in 1998, about 98% was produced by 9 companies operating 17 plants in Alabama, California, Florida, Georgia, Indiana, Louisiana, Minnesota, Missouri, New York, Pennsylvania, Tennessee, and Texas. [7]

Established Markets {127(c)(2)}

There is a strong correlation between the recycling rates for batteries and the lead price paid to secondary smelters. The following chart illustrates this market behavior:

BATTERY RECYCLING RATES AND LEAD PRICES



Source: EPA

Battery recycling studies conducted by the Environmental Protection Agency and the federal Office of Technology Assessment show recycling rates in the 70% range in the 1970s, peaking at 87.3 percent in 1980, falling to a low of 58.5% in 1985 and rebounding to 80% by 1987. These studies suggest a trend of stability in the 1970s, a peak in 1979-80, a sharp drop bottoming out in 1983-85, then an increase to 20-year highs. Putnam, Hayes & Bartlett's June 1986 study conducted for EPA concluded that lead prices and battery recycling rates are highly correlated. Lead prices were stable in the 1970's, peaked at $0.53 per pound in 1979 and hit bottom in 1985 at $0.19 per pound. The lead price then recovered to $0.40 per pound in 1987. When these prices are adjusted for inflation and time-lagged, they explain 80% of the variance in the recycling rates.[8]

Worldwide production of secondary lead is forecast to increase modestly through 2000, despite the continuation of low lead prices. The pool of potential lead scrap feed for the secondary smelters worldwide will continue to expand during this period, likely easing some of the operating difficulties experienced by the smelters in 1998 that were associated with low lead prices and the high cost and shortage of available lead scrap.[9]

Feedstock in Manufacturing {127(c)(3)(4)}

In addition to the two criteria reviewed above, the new law requires a recycler to demonstrate the following to be afforded relief from Superfund liability: 1) that a substantial portion of the recyclable material was made available for use as a feedstock for the manufacture of a new saleable product; and 2) the recyclable material could have been a replacement or substitute for a virgin material, or the product to be made from the recyclable material could have been a replacement or substitute for a product made, in whole or in part, from a virgin raw material.

According to the legislative history of the law, it is not necessary that the person who arranged for recycling document that a substantial portion of the recyclable material was actually used to make a new product. Instead the person need only be prepared to demonstrate that it is common practice for recyclable materials that he or she handles to be made available for use in the manufacture of a saleable product. For example, if recyclable lead is sold to a secondary lead smelter it is assumed that recycling will occur. Likewise, it is the intent of the second requirement that the person be able to demonstrate the general use for which the feedstock material was utilized. The law does not intend that the person show that a specific unit was incorporated into a new product.

Accordingly, the documentation and charts on the following pagesillustrate the common practice of using lead and lead scrap in the manufacture of new products as well as the capacity of scrap to compete with virgin raw materials and products.

Secondary lead consumers consist of smelters, remelters, refiners and manufacturers who convert scrap and residues into fabricated products, caulking lead, pig lead and alloys. Antimonial lead alloys are a major product of these facilities. Secondary lead smelters and refiners are capable of producing products and alloys to the customers' most exacting specifications, equal to primary specifications except in those situations requiring silver or bismuth removal, for which most secondary smelters are not equipped.

The ultimate products of the secondary lead industry with a few specific exceptions have substantially the same uses as production from primary sources. The most important consumer of secondary lead is the battery manufacturing industry and their requirements are usually for specification antimonial lead alloys and specification secondary soft lead. Secondary lead and lead alloys are also used in tetraethyl lead, ammunition, plumbers (caulking) lead, electric cable covering, and die-castings.

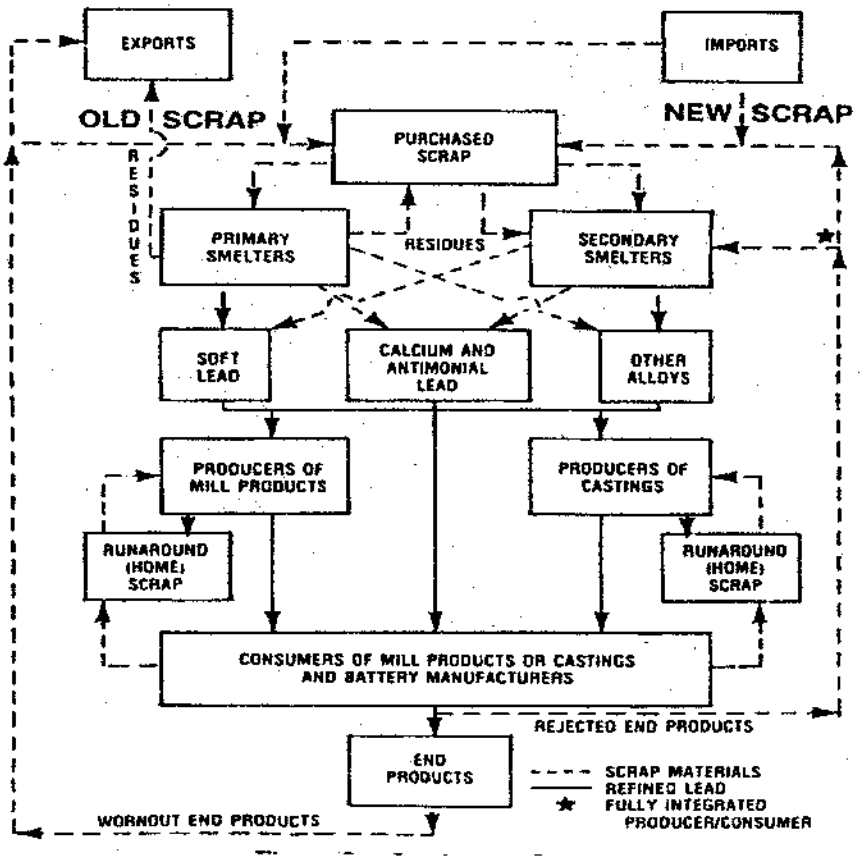
Equipment and facilities in the secondary smelting and refining industry range from small remelting pots to complex furnace operations. These operations involve furnaces of various types, such as sweat, blast, large kettle, and reverberatory furnaces. Many secondary lead plants are equipped with laboratories, including chemical analysis facilities and spectrographic units.[10]

Lead recycling in the U.S. is an extremely important component of overall lead consumption. During the 1980s, secondary lead as a percentage of total production has ranged from 49% to 60%, averaging 55.4%. Compared to some commodities, this is a very significant

Feedstock, Cont.

contribution to consumption.[11] In fact ,1998 figures show that 76% of refined lead produced in the United States was recovered from recycled scrap.

The following flow chart depicts the flow of lead scrap:

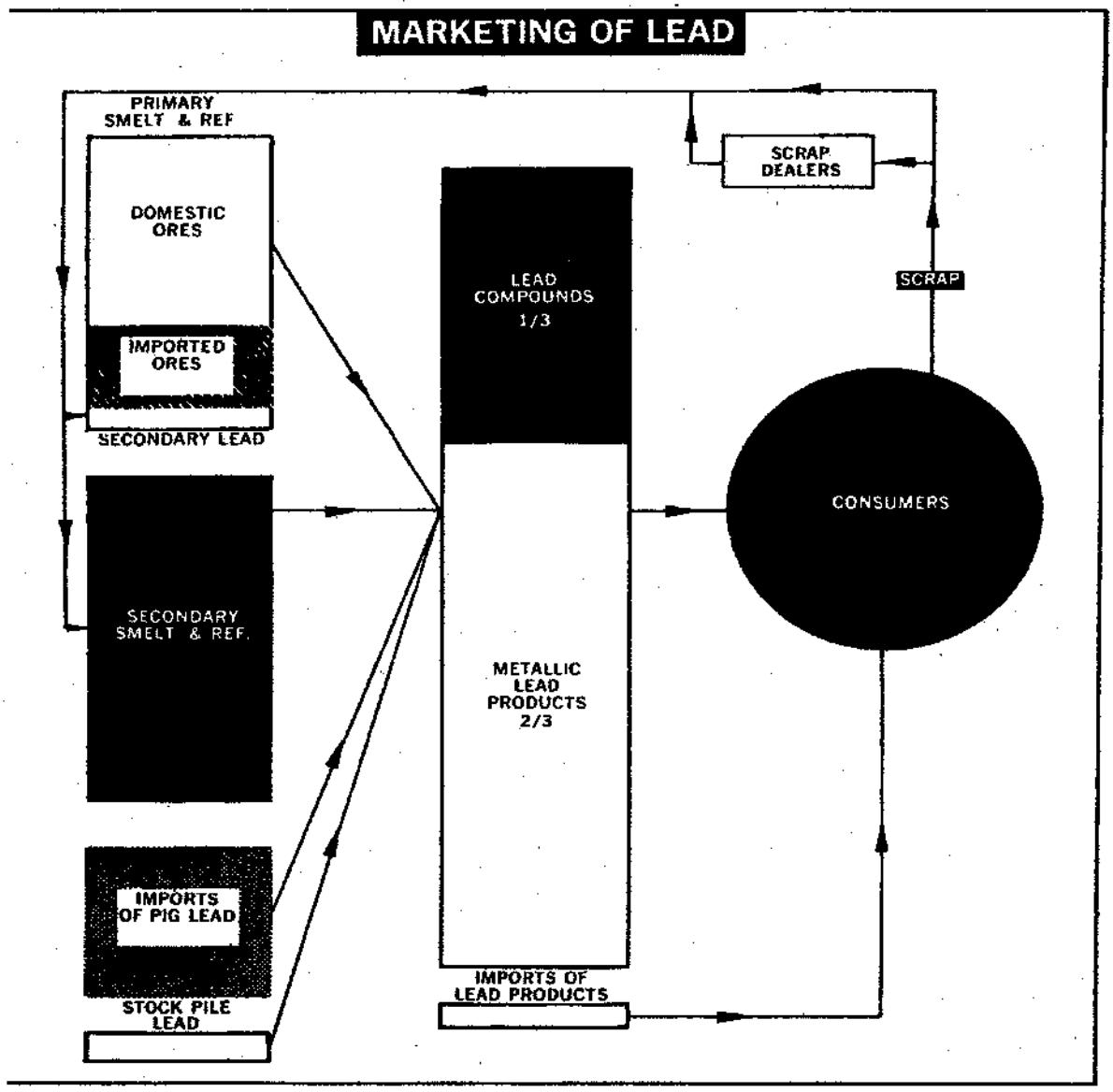


Source: "Lead," Gerald Smith, 1998

A characteristic of the secondary lead market is for recycled lead to go back into the products from which it came, and in roughly the same proportion. Thus, in the U.S., the vast majority of secondary lead generally goes back into batteries.

Feedstock, Cont.

The following chart demonstrates this general trend:



Source: AMM

Lead used to produce tetraethyl lead is a noteworthy exception to this "rule," because lead cannot be recovered from consumed gasoline. This gasoline additive is the second largest market for secondary lead. Other markets, in order of importance include chemicals, alloys, ammunition, pipe and sheet, and cable sheathing.[12]

Feedstock, Cont.

The USGS has tracked the consumption of scrap by consuming facilities for many years. Below is an example of the various types of scrap consumed by the relevant industries.

STOCKS AND CONSUMPTION OF NEW AND OLD LEAD SCRAP IN THE UNITED STATES, BY TYPE OF SCRAP 1/

(Metric tons, gross weight)

Type of scrap	Stocks, Jan. 1	Receipts	Consumption			Stocks, Dec. 31
			New scrap	Old scrap	Total	
1994:						
Smelters, refiners, others:						
Soft lead 2/	894	19,000 r/	–	19,400 r/	19,400 r/	551
Hard lead	W	9,750	–	9,590 r/	9,590 r/	W
Cable lead	W	2,260 r/	–	2,390	2,390	W
Battery-lead	31,300	1,020,000 r/	–	1,020,000 r/	1,020,000 r/	31,900 r/
Mixed common babbitt	61	W	–	W	W	W
Solder and tinny lead	W	W	–	W	W	W
Type metals	W	1,230	–	1,270	1,270	94
Drosses and residues	1,420	66,300	66,100 r/	–	66,100 r/	1,550
Other	15	W	–	W	W	W
Total	36,100	1,120,000 r/	66,100 r/	1,060,000 r/	1,120,000 r/	36,500 r/
1995:						
Smelters, refiners, others:						
Soft lead 2/	551	22,300	–	21,000	21,000	1,830
Hard lead	W	W	–	W	W	W
Cable lead	W	W	–	W	W	W
Battery-lead	31,900 r/	1,050,000	–	1,060,000	1,060,000	22,800
Mixed common babbitt	W	W	–	W	W	W
Solder and tinny lead	W	W	–	W	W	W
Type metals	94	1,090	–	1,040	1,040	W
Drosses and residues	1,550	55,000	55,600	–	55,600	961
Other	W	W	–	W	W	W
Total	36,500 r/	1,160,000	55,600	1,110,000	1,170,000	27,400

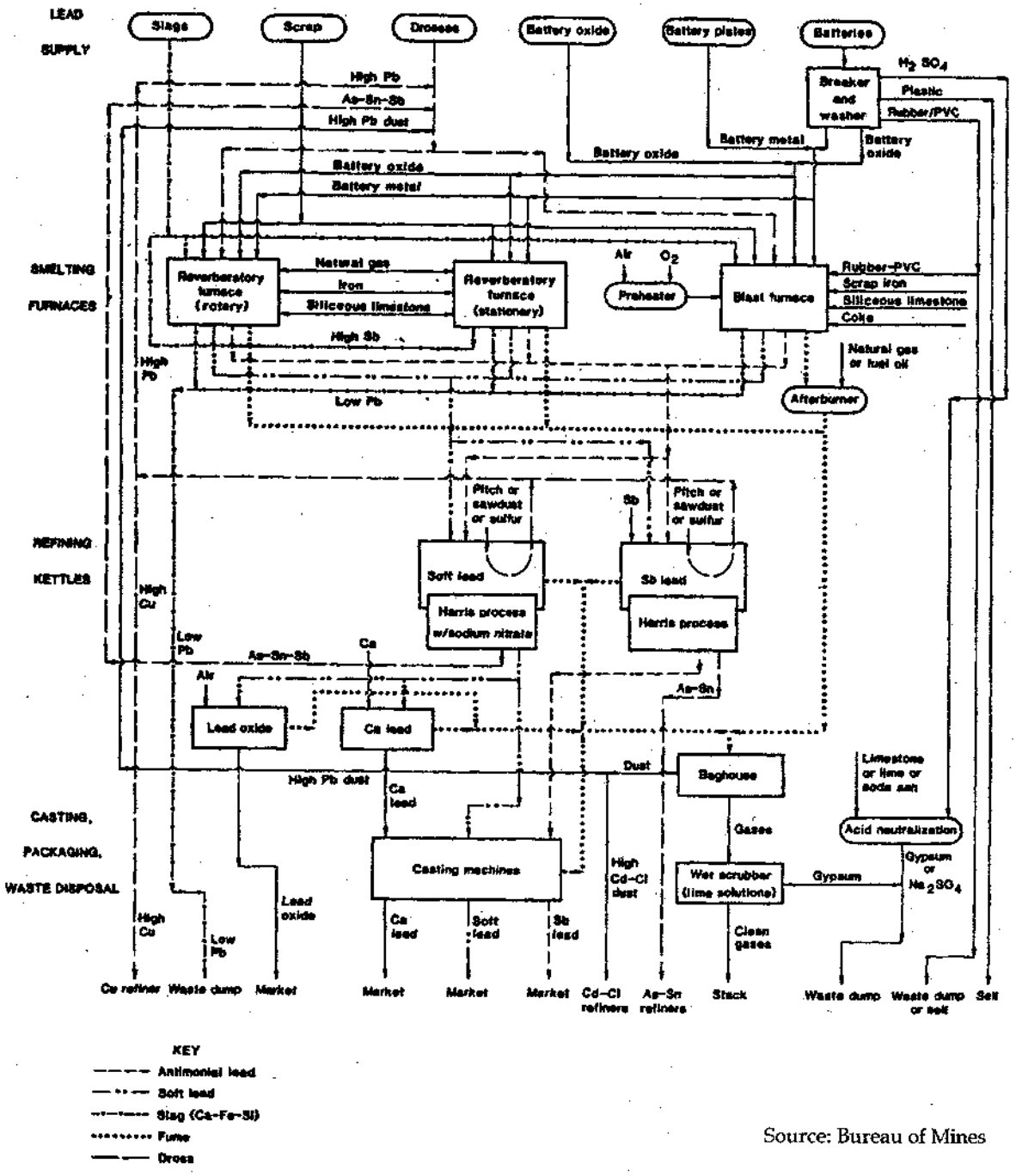
r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes remelt lead from cable sheathing plus other soft lead scrap processing.

Source: USGS

* These tables are a snapshot in time, most of these consumers have consumed scrap for decades. See appendix 1 for consumption figures dating back to the 50's.

The smelting and refining technologies employed in the secondary lead industry are significantly different from those used in the primary lead industry. The reasons are the high lead content of the scrap sent as a raw material feedstock, the absence of complex impurities, the preparation of scrap lead feedstock, and the types of products produced.[13] A generalized process flow diagram presenting the most commonly used methods of smelting, refining, and product output is presented in the diagram on the following page.

Secondary Lead Processing



Source: Bureau of Mines

Feedstock, Cont.

There are four major processes used to pre-treat scrap for lead recovery: battery breaking, crushing, rotary/tube sweating, and reverberatory sweating.

"Lead-acid batteries are the environmental success story of our time. Roughly 96% of all battery lead is recycled."
— Battery Council International

Of these techniques, battery breaking is the most important to the industry. It is used to recover lead from spent batteries by draining the fluids left in the battery case, crushing the case after it has been drained, and separating the lead from foreign materials.

Crushing is used on drosses, residues and slags, which are often received in pieces larger than desired for further processing. Jaw crushers are typically used.

Rotary/tube sweating is used primarily in handling lead cable sheathing, lead type from printing operations, and aircraft tooling dies. In this method, a furnace is charged with raw scrap. As the lead melts it is drained off, leaving the residual matter to be removed from the furnace.

Reverberatory sweating is used to sweat scrap with high lead content, such as battery plates. Consequently, it is often used in conjunction with battery breaking. See page 15 for a diagram depicting the battery recycling process.

The battery is broken apart in a hammer mill, a machine that hammers the battery into pieces. The broken battery pieces go into a vat, where the lead and heavy materials fall to the bottom, the plastic floats. At this point, the polypropylene pieces are scooped away, and the liquids are drawn off, leaving the lead and heavy metals.

The polypropylene pieces are washed, blown dry and sent to a plastic recycler, where the pieces are melted together into an almost-liquid state. The molten plastic is put through an extruder that produces small plastic pellets of a uniform size. Those pellets are sold to the manufacturer of battery cases, and the process begins again.

To conduct its 1998 study on lead-acid battery recycling, EPA visited some sites in order to better understand the dynamics of this industry. GNB Technologies' Vernon recycling plant is a secondary lead smelting facility. Incoming raw materials to its facility in Los Angeles, Calif., consist primarily of spent lead acid batteries. However, the facility also receives industrial and other specialty lead batteries, as well as smaller amounts of lead scrap. GNB processes these materials to produce metallic lead and lead alloy products. Most of the batteries received at the Los Angeles facility are collected from generators located on the west coast of the United States. GNB can process approximately 10 million batteries per year, and processed about 110,000 tons of batteries in 1997.

The lead grids, lead oxide and other lead parts are cleaned and then melted together in smelting furnaces. The molten lead is poured into ingot molds. After a few minutes, the impurities, otherwise known as dross, float to the top of the still-molten lead in the ingot molded. The dross is scraped away and the ingots are left to cool. After the ingots have cooled, they are removed from the molds and sent to battery manufacturers, where they are re-melted and used in the production of new lead plates and other

parts for new batteries.

The growth of state-imposed lead-acid battery take back programs has increased the percentage of spent batteries that are recycled. Also, automobile dismantlers generally remove the batteries prior to selling scrap vehicles to a shredder. Automobile shredding facilities prefer to receive cars after the batteries have been removed. Dismantlers generally sell spent lead-acid batteries on the open market, either to a scrap processor or to a secondary smelter.[14]

Because of the prevalence of take-back programs, shipments of new batteries to battery retailers typically result in equally large shipments of spent batteries from retailers to manufacturers. According to BCI, the return at individual retailers can range from 50% to 150% of new batteries sold (i.e., at times more spent batteries are collected than new batteries sold).

Recycling For a Better Environment

Transportation
The same transportation network used to distribute new batteries safely trucks spent batteries from point of exchange to recycling plants.

Spent Batteries
At the recycling facility, spent or "junk" batteries are broken apart and separated into components to begin the recycling process.

Plastic
Plastic pellets recycled from old battery cases and covers are used to manufacture new battery cases and covers.

Crush the cases and covers

Plastic pellets

New Covers and Cases
Battery covers and cases are manufactured for new batteries from recycled plastic pellets.

New cases and lids

Lead
Lead ingots recycled from battery grids and lead oxide are used to manufacture new battery grids and components.

Melt grids

Lead ingots

New Grids and Lead Oxide
Battery grids are manufactured from recycled lead for use in new batteries. Recovered lead oxide is also used in new battery manufacturing.

New grids

Lead oxide

Sodium Sulfate
Sodium sulfate crystals separated from old battery acid are recycled and sold for use in textile, glass and detergent manufacturing.

Neutralize battery acid

Sodium sulfate crystals

Glass, textiles, detergents

New Battery
New batteries are 99% recyclable and comprised of previously recycled materials.

New batteries

Source: Battery Council International

Resources

SOURCES

1. Secondary Metal Institute. A Study of the Secondary Lead Market in the United States. June 1969

2. EPRI, 1998; Powers and MacArthur, 1999, (p.42-44)

3. Recycling Today, October 1987

4. "Lead Scrap" Institute of Scrap Iron and Steel, Inc., Metals Committee, December 1976

5. ISIS Metal Committee. "Lead Scrap." 1976

6. Andrew Golding. The Lead Market to 1995: The Influence of Secondary Production. October 1985

7. "Lead," Gerald R. Smith, Mineral Commodities Summaries (U.S. Geological Survey), 1998

8. Steve Apotheker, "Does battery recycling need a jump?" Resource Recycling. February 1990

9. SG Global Research, 1998. Metals Quarterly Review- Lead

10. Secondary Metal Institute. A study of the Secondary Lead Market in the United States. June 1969

11. Recycling Today. "Secondary Lead Gets Mixed Reviews." October 1987.

12. Recycling Today. "Secondary Lead Gets Mixed Reviews." October 1987.

13. R. Craig Smith and Michael R. Daley. Domestic Secondary Lead Industry: Production and Regulatory Compliance Costs. Bureau of Mines Information Circular, 1987

14. A Study of the Lead-Acid Battery Industry and Spent Lead-Acid Battery Exports, U.S. EPA, August 14, 1998

Other Sources

"A Study of the Secondary Lead Market in the United States." Secondary Metal Institute (NASMI). The National Association of Secondary Metal Industries, 1969.

A.J. Golding. The Lead Market to 1990: The Role of Secondary Supply. CGF, London. September 1986.

Resources

Secondary Lead Production Costs in North America. Commodities Research Unit Limited. June 1984.

David Stonfer. The Storage Battery Market: Profiles and Trade Opportunities. Department of Commerce. April 1985.

The Impacts of Lead Industry Economics on Battery Recycling. Office of Policy Analysis Environmental Protection Agency, Putnam, Hayes & Bartlett, Inc. June 4, 1987.

International Lead and Zinc Study Group. Secondary Lead and Zinc, Special Meeting of the Recycling Sub-Committee, 9th and 11th, 1987, Final Report.

U.S. Geological Survey Mineral Industry Survey
U.S. Geological Survey Mineral Yearbook
U.S. EPA Profile of the Nonferrous Metals Industry (Sector Notebooks) 1995

Institute of Scrap Recycling Industries (www.isri.org)
Lead Development Association (www.lead.org)
American Bureau of Metal Statistics, Inc. (www.abms.com)
Lead Industries Association, Inc. (www.leadinfo.com)
International Lead Zinc Research Organization, Inc. (www.ilzro.org)

RECOVERY OF SECONDARY LEAD, TIN, AND LEAD-TIN ALLOY PRODUCTS IN U.S.

As reported by U.S. Bureau of Mines, gross weights, in metric tons.

	1982	1983	1984	1985	1986r	1987p
Refined pig lead	231,081	177,813	247,929	260,337	269,526	334,844
Remelt lead	9,394	11,789	15,502	13,361	20,020	14,065
	240,475	189,602	263,431	273,698	289,546	348,909
Refined pig tin	1,054	1,171	1,097	†	1,140	1,159
Remelt tin	13	10	10	†	†	†
	1,067	1,181	1,107	1,302	1,140	1,159
Lead and tin alloys						
Antimonial lead	299,353	284,384	341,674	310,734	303,405	332,058
Common babbitt	5,114	3,735	...	...	...	...
Genuine babbitt	52	36	1,766**	1,417	1,268**	1,340**
Solder	22,498	21,208	21,938	25,383	27,931	27,088
Type metals	6,740	5,567	2,787	2,318	1,778	1,119
Cable lead	996	855	...	...	...	...
Miscellaneous-in-lead alloys	759	1,012	5,150	3,252	2,815*	2,278
	335,512	317,297	373,315	343,104	337,197	363,883
Tin content of chemical products	282	182	301	186	w	w
Grand totals	577,336	508,262	638,154	618,290	627,883	713,951

r—Revised. p—Preliminary.
†No longer broken out. *Includes cable lead. **Includes common babbitt. w—Withheld to avoid disclosing company proprietary data.
Note: 1988 data was not available at date of publication.

SECONDARY LEAD RECOVERED IN THE UNITED STATES

Reported by the U.S. Bureau of Mines in tons of 2,000 pounds in 1977, metric tons thereon.

	1981	1982	1983	1984	1985	1986r	1987r	1988p
As Refined Metal:								
At primary plants	1,745	657	648	N/A	N/A	N/A	N/A	N/A
At other plants	280,409	239,819	188,954	N/A	N/A	N/A	N/A	N/A
Total	282,154	240,476	189,602	263,431	273,698	289,546	348,909	N/A
In Antimonial Lead								
At primary plants	46	34	...	...	...	...	...	...
At other plants	304,330	284,333	271,638	327,803	299,307	291,943	319,474	N/A
Total	304,376	284,367	271,638	327,803	299,307	291,943	319,474	N/A
In Other Alloys	54,575	46,433	42,261	42,140	42,690	43,280	41,834	N/A
Grand Total	641,105	571,276	503,501	633,374	615,695	624,769	710,217	N/A
From new scrap	63,074	50,004	51,523	47,625	45,963	49,498	52,551	N/A
From old scrap	578,031	521,272	451,978	585,749	569,732	575,271	657,666	635,000e

r—Revised. p—Preliminary. e—Estimated. N/A—Not available.

U. S. SECONDARY LEAD PRODUCTION

(Bureau of Mines, in short tons)

	Pig Lead	Lead in Alloys	Total
1951 ...	168,916	349,194	518,110
1952 ...	140,102	331,192	471,294
1953 ...	126,574	360,163	486,737
1954 ...	120,007	360,918	480,925
1955 ...	128,320	373,731	502,051
1956 ...	133,392	373,363	506,755
1957 ...	126,571	362,658	489,229
1958 ...	116,057	285,730	401,787
1959 ...	125,379	326,008	451,387
1960 ...	148,219	321,684	469,903
1961 ...	140,669	312,123	452,792
1962 ...	118,468	325,734	444,202
1963 ...	134,529	358,942	493,471
1964 ...	149,207	392,375	541,582
1965 ...	181,914	393,905	575,819
1966 ...	156,217	416,615	572,834
1967 ...	150,344	420,165	570,509
1968 Est.			554,000

U.S. SECONDARY LEAD PRODUCTION

U.S. Bureau of Mines, in tons of 2,000 pounds through 1977, metric tons from Jan. 1978.

	Pig Lead	Lead in Alloys	Total
1968	138,866	412,013	550,879
1969	154,310	449,595	603,905
1970	159,167	438,223	597,390
1971	150,134	446,663	596,797
1972	173,357	443,240	616,597
1973	186,124	468,162	654,286
1974	238,216	460,482	698,698
1975	271,297	387,159	658,456
1976	311,010	415,569	726,569
1977	334,164	500,938	835,102
1978	282,584	486,652	769,236
1979	352,221	449,147	801,368
1980	315,178	360,400	675,578
1981	282,154	358,951	641,105
1982	240,476	330,800	571,276
1983	189,602	313,899	503,501
1984	268,431	369,943	638,374
1985r.....	289,646	325,223	615,695
1986r.....	260,474	334,412	624,769
1987r.....	348,909	361,308	710,217
1988p	N/A	N/A	635,000

r—Revised. p—Preliminary. N/A—Not available.

CONSUMPTION OF SCRAP LEAD IN THE U. S.

Consumption of purchased lead scrap by smelters, refiners, foundries and manufacturers, according to grade and condition, as reported by the U. S. Bureau of Mines, gross weight, in short tons.

	Remelters, Smelters, Refiners		Foundries and Manufacturers		Total Scrap Used
	New	Old	New	Old	
Soft lead	....	57,498	....	189	57,687
Hard lead	....	18,520	....	150	18,670
Cable lead	....	34,413	....	58	34,471
Battery plates	....	453,640	....	....	453,640
Mixed babbitt	....	3,535	....	9,490	13,025
Solder and tinny lead	....	12,802	....	....	12,802
Type metals	....	34,898	....	....	34,898
Dross and residues	101,131	.....	....	....	101,131
Total, 1967	101,131	615,306	....	9,887	726,324
" 1966	112,027	616,348	6	12,653	741,034
" 1965	101,694	633,859	....	12,777	748,335
" 1964	91,341	599,536	1	14,285	705,163
" 1963	84,507	541,675	133	14,600	640,915
" 1962	64,795	503,965	108	10,062	578,930
" 1961	82,099	495,485	182	9,508	587,274

TABLE 4
SECONDARY LEAD RECOVERY IN THE U.S.
(In Short Tons)

As Refined Lead:	1975	1976	1977	1978	1979(E)
Primary Plants	---	29	95	1,371	3,155
Secondary Smelters	271,297	310,981	334,069	310,124	385,102
Sub Total	271,297	311,010	334,164	311,495	388,257
In Antimonial Lead:					
Primary Plants	3,337	1,371	3,364	1,523	2,000
Secondary Smelters	311,783	340,596	419,247	450,325	415,588
Sub Total	315,120	341,967	422,611	451,848	417,588
In Other Alloys:	72,099	73,592	78,326	84,593	77,511
GRAND TOTAL	658,456	726,569	835,101	847,936	883,356

Source: U.S. Bur. of Mines
(E) Estimated by LIA

RECOVERY OF SECONDARY LEAD, TIN AND LEAD-TIN ALLOY PRODUCTS IN U.S.

As reported by U.S. Bureau of Mines, gross weights, in short tons.

	1973	1974	1975	1976	1977r	1978p
Refined pig lead	149,215	189,002	211,594	220,953	257,969	203,064
Remelt lead	36,909	49,214	59,703	90,057	76,195	56,996
	186,124	238,216	271,297	311,010	334,164	260,060
Refined pig tin	1,806	1,990	1,862	1,596	1,814	21
Remelt tin	307	239	252	24	29	16
	2,113	2,229	2,114	1,620	1,843	37
Lead and tin alloys						
Antimonial lead	396,750	391,720	330,758	359,481	450,285	326,206
Common babbitt	15,059	14,226	12,105	12,996	12,624	5,905
Genuine babbitt	206	160	187	103	381	13
Solder	36,076	33,432	26,431	30,017	31,842	26,057
Cable lead	20,600	12,656	10,036	9,043	7,939	4,028
Type metals	26,689	24,330	18,799	16,944	18,539	8,418
Miscellaneous-in-lead alloys	746	747	966	388	891	293
	486,126	477,271	399,282	428,972	522,601	370,920
Tin content of chemical products	955	661	738	467	402	N/A
Grand totals	675,318	718,377	673,431	742,069	523,003	631,017

p—Preliminary estimates by the U.S. Bureau of Mines. r—Revised. N/A—Not available at date of publication. 1978 figures represent 11 months only.

SECONDARY LEAD RECOVERED IN THE UNITED STATES

Reported by the U.S. Bureau of Mines in short tons.

	1971	1972	1973	1974	1975	1976	1977r	1978p
As Refined Metal:								
At primary plants	1,223	1,189	...	...	...	29	95	37
At other plants	148,911	172,168	186,124	238,216	271,297	311,010	334,069	260,060
Total	150,134	173,357	186,124	238,216	271,297	311,039	334,164	260,097
In Antimonial Lead								
At primary plants	2,379	5,816	1,065	1,549	3,337	1,371	3,364	N/A
At other plants	340,333	340,066	374,713	369,954	311,783	340,596	419,248	326,206
Total	342,712	345,882	375,778	371,503	315,120	341,967	422,612	326,206
In Other Alloys	103,951	97,358	92,384	88,979	72,039	73,592	78,326	N/A
Grand Total	596,797	616,597	654,286	698,698	658,456	726,569	835,102	700,000
From new scrap	107,016	118,885	115,696	97,753	94,214	104,355	132,672	N/A
From old scrap	489,781	497,712	538,590	600,945	564,242	622,234	702,430	653,000

p—Preliminary estimates based on U.S. Bureau of Mines data. N/A—Not available at date of publication. r—Revised.

U.S. SECONDARY LEAD PRODUCTION

U.S. Bureau of Mines, in short tons.

	Pig Lead	Lead in Alloys	Total
1960	148,219	321,684	469,903
1961	140,669	312,123	452,792
1962	118,468	325,734	444,202
1963	134,529	358,942	493,471
1964	149,207	392,375	541,582
1965	181,914	393,905	575,819
1966	156,217	416,615	572,834
1967	150,344	403,428	553,772
1968	138,866	412,013	550,879
1969	154,310	449,595	603,905
1970	159,167	438,223	597,390
1971	150,134	446,663	596,797
1972	173,357	443,240	616,597
1973	186,124	468,162	654,286
1974	238,216	460,482	698,698
1975	211,594	373,879	585,473
1976	220,953	401,819	622,772
1977	N/A	N/A	732,406
1978p	N/A	N/A	751,654

p—Preliminary. N/A—Breakdown not available at date of publication.

U.S. RECOVERY OF SECONDARY LEAD

In tonnes. Compiled by the U.S. Geological Survey.

	1988	1989	1990	1991	1992	1993	1994	1995
From new scrap	45,274	49,612	48,104	54,970	55,277	55,000	54,200	57,900
From old scrap	691,127	841,729	874,093	829,654	861,320	838,000	877,000	963,000
Total	736,401	891,341	922,000	885,000	916,000	893,000	931,000	1,020,000

	1996	1997
Kind of scrap		
New scrap		
Lead-base	37,500	54,000
Copper-base	8,850	9,650
Total	46,400	63,700
Old scrap		
Battery lead	961,000	991,000
All other lead-base	56,400	43,100
Copper-base	7,850	7,840
Total	1,030,000	1,040,000
Grand total	1,070,000	1,110,000
Form of recovery		
As soft lead	625,000	663,000
In antimonial lead	420,000	411,000
In other lead alloys	9,230	14,200
In copper-base alloys	16,700	17,500

r-Revised. NOTE: 1998 figures not available at time of publication.

Institute of Scrap Recycling Industries, Inc.

Superfund Guidance

Volume Five

March 1, 2000

Model Consuming Facility Compliance Checklist

The Superfund Recycling Equity Act *(Pub. Law 106-113)*, requires a scrap processor to exercise reasonable care to determine that the facility where the recyclable material is handled, processed, reclaimed, or otherwise managed by another person (referred to as a 'consuming facility') is in compliance with substantive (not procedural or administrative) provisions of any Federal, State, or local environmental law or regulation, or compliance order or decree issued pursuant thereto, applicable to the handling, processing, reclamation, storage, or other management activities associated with recyclable material. *(This provision only applies to transactions occurring after 2/27/00)*

ISRI has developed a model checklist in order to help members with this endeavor as well as to provide consumers with a simple method to respond to such inquiries. The model is only a suggested tool and as such, a recycler is not precluded from using other methods to demonstrate that it took reasonable care to evaluate the consumer compliance record as it applies to the recyclable material. The model also can be downloaded at www.isri.org. Recyclers can customize the checklist to reflect their own situation. Likewise, a consumer can modify the checklist to reflect the information it believes is germane to the request. For example, if a consumer does not have to report under TRI, it may decide not to list TRI in its checklist.

'Substantive provisions' will vary due to conditions including, but not limited to the type of consumer, the type of material handled by the consumer, and the specific operations at the consuming facility. For example, since scrap metal is excluded from the definition of solid waste when recycled, if a consumer only purchases scrap metal, it may choose not to report information on RCRA compliance as one could argue that RCRA does not regulate scrap metal recycling. A requirement to obtain a permit applicable to the handling, processing, reclamation, or other management activity associated with the recyclable materials would be deemed to be a substantive provision. Conversely, certain record-keeping errors, missed deadlines or similar infractions that do not result in any environmental harm may be viewed by a court as 'procedural or administrative'.

According to the legislative history of the bill, the recycler must only determine the status of the consuming facility's compliance with laws, regulations, or orders, which directly apply to the handling, processing, reclamation, storage, or other management activity associated with the recyclable materials sent by the recycler. Thus, for example, a person who arranges for the recycling of scrap metal at a consuming facility would not be responsible for determining the consuming facility's compliance with regulations governing the consuming facilities production of its product, just the consuming facility's compliance with management of the scrap metal as an in-feed material.

This checklist does not substitute the requirement to make inquiries to the regulatory authorities. However, it can be used as a tool to confirm or clarify information gathered from inquiries made to the relevant regulatory agencies.

Institute of Scrap Recycling Industries, Inc.

Superfund Recycling Equity Act

Consuming Facility Compliance Checklist

Under the new law *(Pub. Law 106-113)*, a scrap processor is required to exercise reasonable care to determine that the facility where the recyclable material was handled, processed, reclaimed, or otherwise managed by another person (referred to as a 'consuming facility') was in compliance with substantive (not procedural or administrative) provisions of any Federal, State, or local environmental law or regulation, or compliance order or decree issued pursuant thereto, applicable to the handling, processing, reclamation, storage, or other management activities associated with recyclable material.

To satisfy the requirements of this law, [*recycler*] is seeking the following information as it relates to scrap [*paper, plastic, glass, textiles, rubber, metal, whole batteries*[1]] delivered to your facility for recycling:

I. Facility Information

A. Company Name: _____

B. Physical Location _____

C. Primary SIC or NAICS[2]: _____

D Contact Person: _____

E: Telephone #: _____

II. Compliance Information

Is your facility in compliance with substantive provisions of federal, state and/or local environmental laws and regulations that are **applicable** to the handling, processing, reclamation, storage, etc. of the recyclable material described above? Please use the following checklist to record your response. Substantive provisions relevant to this request may include, but are not limited to the following environmental, legal or regulatory requirements based on SIC code, material handled, and specific activities at the facility:

Statute[3]	*Specific Provision*	*Is your Facility in compliance with this regulatory requirement?*			*If no, is your facility subject to a notice of violation, compliance order or decree and meeting the conditions prescribed in the action?*		*If no, please explain: (if additional space is needed, attach explanation)*
		Yes	No	NA	Yes	No	
CWA	Industrial NPDES or Pretreatment Permit						
RCRA	Hazardous Waste Regulations						
	Solid Waste Regulations						
	Used Oil Standards						
	Battery Reclamation Rules						
	Corrective Cleanup Action						
CAA	Air Permit						
EPCRA	Community Right to Know (Inventory Reporting 311/312)						
	TRI Reporting						
Others requirements, including state or local requirements not listed:							

III. Acknowledgement:

I acknowledge that the information submitted was properly gathered and evaluated and to the best of my knowledge and belief, is true, accurate, and complete.

_____ _____

Signature[4] Date

Instructions

[1] Circle or denote the relevant recyclable material sent to this consuming facility.

[2] **Common Standard Industrial Classifications**

SIC CODE	NAICS	DESCRIPTION
2611	32211	Pulp Mills
2621	322121	Paper Mills
2631	32213	Paperboard Mills
2653	322211	Corrugated and solid fiber boxes
30	326___	Rubber and Plastic Industry
32	32721_	Glass Manufacturing
3312	331111	Iron and Steel Mills
3331	331411	Primary Smelting and Refining of Copper
3341	331___	Secondary Smelting and Refining of Nonferrous Metals
3351	331421	Rolling, Drawing, and Extruding Copper
3362	331522	Brass, Bronze, Copper, Copper Base Alloy Foundries (Castings): Establishments primarily engaged in manufacturing castings and die castings of copper and copper base alloy.
3363	331521	Aluminum Die-Casting Foundries
3364	331522	Nonferrous Die-Castings, Except Aluminum
3365	331524	Aluminum Foundries
3366	331525	Copper Foundries
3369	331528	Nonferrous Foundries (Castings), except aluminum, copper, and copper based alloys.
5093	42193	Scrap & Waste Materials (Scrap Recycling Facilities)

NOTE: A comprehensive listing of all Standard Industrial Classifications is provided in the following publication: *Standard Industrial Classification Manual*, 1987 Edition, U.S. Executive Office of the President, Office of Management and Budget. (http://www.census.gov/epcd/www/naicstab.htm)

[3] **ACRONYMS**

CAA	Clean Air Act
CWA	Clean Water Act
EPCRA	Emergency Planning and Community Right-to-Know Act
NAICS	North American Industry Classification System
NPDES	National Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act
SIC	Standard Industrial Classification
TRI	Toxics Release Inventory

[4] Checklist should be signed by the appropriate environmental officer, general manager, or other company representative with knowledge of the environmental issues noted.

Institute of Scrap Recycling Industries, Inc.

Superfund Guidance

Volume Six

March 1, 2000

Evaluating the Consumer's Compliance Record: *Electronic Inquiries*

For transactions occurring 90 days after the enactment date of the Superfund Recycling Equity Act (i.e. after February 27, 2000), to obtain relief recyclers must exercise "reasonable care" to determine that the consuming facility is in compliance with substantive provisions of any federal, state, or local environmental law or regulation, compliance order, or decree applicable to the direct handling, processing, reclamation, storage, or other management activities associated with the recyclable material.

In determining whether a recycler exercised 'reasonable care', the criteria to be applied will be considered in the context of the time of the transaction and will be determined using a variety of factors including:

Results of inquiries made to the appropriate federal, state, or local environmental agencies regarding the consuming facility's past and current compliance with substantive environmental requirements applicable to activities associated with the recyclable material. This provision only requires a recycler to make reasonable inquiries. Inquiries need only be made to those agencies having primary responsibilities over environmental matters related to the handling, processing, etc., of the materials involved in the recycling transaction. The facility should consider documenting such inquiries in order to illustrate that reasonable care was taken.

Depending on case specific situations, a recycler may want to inquire about the consuming facility's relevant compliance record using electronic database searches. The following is a sample of available resources:

***U.S. EPA Database /EnviroFacts (free):**
http://www.epa.gov/enviro/html/multisystem_query_java.html

Priviate companies (fee-based). Here are a few that can be contacted via the internet:

VISTA Information Solutions, Inc.
http://www.vistacheck.com/vista_assets/html/homeframe.htm

Environmental Data Resources, Inc. (EDR)
http://www.edrnet.com/

ISRI is currently investigating the merits of an electronic database search specifically designed to help members with this task. As soon as this is available, ISRI will alert the membership. In the meantime, members may be interested in evaluating the above mentioned resources.

Institute of Scrap Recycling Industries, Inc.

Superfund Guidance

Volume Eight

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Evaluating the Consumer's Compliance Record: *Contacting Regulatory Agencies*

For transactions occurring 90 days after the enactment date of the Superfund Recycling Equity Act (i.e. after February 27, 2000), to obtain relief a recycler must exercise reasonable care to determine that the consuming facility is in compliance with substantive provisions of any federal, state, or local environmental law or regulation, compliance order, or decree applicable to the direct handling, processing, reclamation, storage, or other management activities associated with the recyclable material.

In determining whether a recycler exercised 'reasonable care', the criteria to be applied will be considered in the context of the time of the transaction and will be determined using a variety of factors including: *Results of inquiries made to the appropriate federal, state, or local environmental agencies regarding the consuming facility's past and current compliance with substantive environmental requirements applicable to activities associated with the recyclable material.* This provision only requires a recycler to make reasonable inquiries. Inquiries need only be made to those agencies having primary responsibilities over environmental matters related to the handling, processing, etc., of the materials involved in the recycling transaction. The recycler should consider documenting such inquiries in order to illustrate that reasonable care was taken.

Thus to satisfy the requirements of the new law, a recycler may want to consider sending a letter to the appropriate federal, state or local contact requesting information on the consumer's compliance record. Members may wish to use the sample letter found on the next page to help with this endeavor. To find the relevant contacts for state regulatory authorities, the following website may be of assistance: http://www.lgean.org/html/stateregs.cfm. A link to this page can be found on ISRI's Superfund Compliance Web Page located at www.isri.org.

When exercising 'reasonable care' in determining the consuming facility compliance record, a recycler may want to consider contacting the consuming facility directly to confirm or clarify information gathered from inquiries made to the relevant regulatory agencies. ISRI has developed a model checklist in order to help with this endeavor as well as to provide consumers with a simple method to respond to such inquiries. A copy of a model checklist can be found in Section Four of ISRI's Superfund Guidance Manual.

Note: this checklist does not substitute the requirement to make inquiries to the regulatory authorities! While, the information a recycler receives from its consumer (i.e.letters, checklists, certifications, etc.) is valuable in demonstrating that he or she took 'reasonable care' to evaluate the consumer's compliance record, if the recycler does not make inquiries to the relevant regulatory authorities it may not have met the conditions of the new law and thus may not be protected from Superfund liability.

For more information, contact Tracy Mattson, ISRI's Director of Environmental Compliance, at tel. 202/662-8533; fax: 202/626-0933; e-mail: tracymattson@isri.org.

Sample:
Model Letter to Regulatory Agency

[This document can be found at www.isri.org and can be downloaded as a Microsoft Word document]

RE: Information Request

Dear _____:

As you may know, on November 29, 1999, President Clinton signed into law the Superfund Recycling Equity Act (Public Law 106-113). This law clarifies Superfund to state that recycling is not disposal, and shipping for recycling is not arranging for disposal.

Under the new law, a recycler must exercise 'reasonable care' to determine that the consuming facility[1] where the material is sent for recycling is in compliance with substantive environmental requirements that are applicable to the recyclable material[2]. **This includes making inquiries to the appropriate federal, state, or local environmental agency regarding the compliance status of the consuming facility.**

To comply with this requirement, I am requesting information on the compliance status of the following company as it relates to the handling, storage and management of scrap materials at the company's facility:

Company Name
Physical Address

Note to Recycler: Pick the appropriate request and denote which statute(s) you are seeking information about:

1) *General Compliance*: Specifically, I am interested in finding out if the facility named above is currently in compliance with substantive provisions of the following statute(s): _____ ex: CWA, CAA, RCRA, EPCRA, etc. If the facility is not required to comply with the above mentioned statute, please acknowledge such information in your response.

or

2) *Compliance with Consent Orders/Administrative Actions: Specifically, I am interested in finding out if the facility named above is currently meeting its compliance goals set forth in any consent order or administrative action which resulted from an enforcement action due to a _____ (CWA, CAA, RCRA, and/or EPRCA) violation(s).*

Thank you in advance for your assistance. As this information is critical in demonstrating 'reasonable care', please provide the necessary statement or documentation by 20 calendar days after receipt of this letter to the address denoted in the letterhead.

Sincerely,

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[1] A 'consuming facility' is the facility where the recyclable material was handled, processed, reclaimed, or otherwise managed. For example, a steel mill, paper mill, foundry, or even another scrap recycler can be considered a 'consuming facility'.

[2] This could include the handling, processing, reclamation, storage, or other management activity directly associated with the recyclable material.

ACRONYMS

CAA	Clean Air Act
CWA	Clean Water Act
EPCRA	Emergency Planning and Community Right-to-Know Act
NPDES	National Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act
TRI	Toxics Release Inventory

106TH CONGRESS
1ST SESSION

S. 1948

To amend the provisions of title 17, United States Code, and the Communications Act of 1934, relating to copyright licensing and carriage of broadcast signals by satellite.

IN THE SENATE OF THE UNITED STATES

NOVEMBER 17, 1999

Mr. LOTT introduced the following bill; which was read twice and referred to the Committee on the Judiciary

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A BILL

To amend the provisions of title 17, United States Code, and the Communications Act of 1934, relating to copyright licensing and carriage of broadcast signals by satellite.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "Intellectual Property and Communications Omnibus Reform Act of 1999".

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

by an application filed under this section shall have priority over other low-power stations in the assignment of available channels.".

TITLE VI—SUPERFUND RECYCLING EQUITY

SEC. 6001. SUPERFUND RECYCLING EQUITY.

(a) PURPOSES.—The purposes of this section are—

(1) to promote the reuse and recycling of scrap material in furtherance of the goals of waste minimization and natural resource conservation while protecting human health and the environment;

(2) to create greater equity in the statutory treatment of recycled versus virgin materials; and

(3) to remove the disincentives and impediments to recycling created as an unintended consequence of the 1980 Superfund liability provisions.

(b) CLARIFICATION OF LIABILITY UNDER CERCLA FOR RECYCLING TRANSACTIONS.—

(1) CLARIFICATION.—Title I of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq.) is amended by adding at the end the following new section:

"SEC. 127. RECYCLING TRANSACTIONS.

"(a) LIABILITY CLARIFICATION.—

"(1) As provided in subsections (b), (c), (d), and (e), a person who arranged for recycling of recyclable material shall not be liable under sections 107(a)(3) and 107(a)(4) with respect to such material.

"(2) A determination whether or not any person shall be liable under section 107(a)(3) or section 107(a)(4) for any material that is not a recyclable material as that term is used in subsections (b) and (c), (d), or (e) of this section shall be made, without regard to subsections (b), (c), (d), or (e) of this section.

"(b) RECYCLABLE MATERIAL DEFINED.—For purposes of this section, the term 'recyclable material' means scrap paper, scrap plastic, scrap glass, scrap textiles, scrap rubber (other than whole tires), scrap metal, or spent lead-acid, spent nickel-cadmium, and other spent batteries, as well as minor amounts of material incident to or adhering to the scrap material as a result of its normal and customary use prior to becoming scrap; except that such term shall not include—

"(1) shipping containers of a capacity from 30 liters to 3,000 liters, whether intact or not, having any hazardous substance (but not metal bits and pieces or hazardous substance that form an integral

part of the container) contained in or adhering thereto; or

"(2) any item of material that contained polychlorinated biphenyls at a concentration in excess of 50 parts per million or any new standard promulgated pursuant to applicable Federal laws.

"(c) TRANSACTIONS INVOLVING SCRAP PAPER, PLASTIC, GLASS, TEXTILES, OR RUBBER.—Transactions involving scrap paper, scrap plastic, scrap glass, scrap textiles, or scrap rubber (other than whole tires) shall be deemed to be arranging for recycling if the person who arranged for the transaction (by selling recyclable material or otherwise arranging for the recycling of recyclable material) can demonstrate by a preponderance of the evidence that all of the following criteria were met at the time of the transaction:

"(1) The recyclable material met a commercial specification grade.

"(2) A market existed for the recyclable material.

"(3) A substantial portion of the recyclable material was made available for use as feedstock for the manufacture of a new saleable product.

"(4) The recyclable material could have been a replacement or substitute for a virgin raw material,

or the product to be made from the recyclable material could have been a replacement or substitute for a product made, in whole or in part, from a virgin raw material.

"(5) For transactions occurring 90 days or more after the date of enactment of this section, the person exercised reasonable care to determine that the facility where the recyclable material was handled, processed, reclaimed, or otherwise managed by another person (hereinafter in this section referred to as a 'consuming facility') was in compliance with substantive (not procedural or administrative) provisions of any Federal, State, or local environmental law or regulation, or compliance order or decree issued pursuant thereto, applicable to the handling, processing, reclamation, storage, or other management activities associated with recyclable material.

"(6) For purposes of this subsection, 'reasonable care' shall be determined using criteria that include (but are not limited to)—

"(A) the price paid in the recycling transaction;

"(B) the ability of the person to detect the nature of the consuming facility's operations concerning its handling, processing, reclama-

tion, or other management activities associated with recyclable material; and

"(C) the result of inquiries made to the appropriate Federal, State, or local environmental agency (or agencies) regarding the consuming facility's past and current compliance with substantive (not procedural or administrative) provisions of any Federal, State, or local environmental law or regulation, or compliance order or decree issued pursuant thereto, applicable to the handling, processing, reclamation, storage, or other management activities associated with the recyclable material. For the purposes of this paragraph, a requirement to obtain a permit applicable to the handling, processing, reclamation, or other management activity associated with the recyclable materials shall be deemed to be a substantive provision.

"(d) TRANSACTIONS INVOLVING SCRAP METAL.—

"(1) Transactions involving scrap metal shall be deemed to be arranging for recycling if the person who arranged for the transaction (by selling recyclable material or otherwise arranging for the recycling of recyclable material) can demonstrate by a prepon-

derance of the evidence that at the time of the transaction—

"(A) the person met the criteria set forth in subsection (c) with respect to the scrap metal;

"(B) the person was in compliance with any applicable regulations or standards regarding the storage, transport, management, or other activities associated with the recycling of scrap metal that the Administrator promulgates under the Solid Waste Disposal Act subsequent to the enactment of this section and with regard to transactions occurring after the effective date of such regulations or standards; and

"(C) the person did not melt the scrap metal prior to the transaction.

"(2) For purposes of paragraph (1)(C), melting of scrap metal does not include the thermal separation of 2 or more materials due to differences in their melting points (referred to as 'sweating').

"(3) For purposes of this subsection, the term 'scrap metal' means bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad

box cars), which when worn or superfluous can be recycled, except for scrap metals that the Administrator excludes from this definition by regulation.

"(e) TRANSACTIONS INVOLVING BATTERIES.—Transactions involving spent lead-acid batteries, spent nickel-cadmium batteries, or other spent batteries shall be deemed to be arranging for recycling if the person who arranged for the transaction (by selling recyclable material or otherwise arranging for the recycling of recyclable material) can demonstrate by a preponderance of the evidence that at the time of the transaction—

"(1) the person met the criteria set forth in subsection (c) with respect to the spent lead-acid batteries, spent nickel-cadmium batteries, or other spent batteries, but the person did not recover the valuable components of such batteries; and

"(2)(A) with respect to transactions involving lead-acid batteries, the person was in compliance with applicable Federal environmental regulations or standards, and any amendments thereto, regarding the storage, transport, management, or other activities associated with the recycling of spent lead-acid batteries;

"(B) with respect to transactions involving nickel-cadmium batteries, Federal environmental

regulations or standards are in effect regarding the storage, transport, management, or other activities associated with the recycling of spent nickel-cadmium batteries, and the person was in compliance with applicable regulations or standards or any amendments thereto; or

"(C) with respect to transactions involving other spent batteries, Federal environmental regulations or standards are in effect regarding the storage, transport, management, or other activities associated with the recycling of such batteries, and the person was in compliance with applicable regulations or standards or any amendments thereto.

"(f) EXCLUSIONS.—

"(1) The exemptions set forth in subsections (c), (d), and (e) shall not apply if—

"(A) the person had an objectively reasonable basis to believe at the time of the recycling transaction—

"(i) that the recyclable material would not be recycled;

"(ii) that the recyclable material would be burned as fuel, or for energy recovery or incineration; or

"(iii) for transactions occurring before 90 days after the date of the enactment of this section, that the consuming facility was not in compliance with a substantive (not procedural or administrative) provision of any Federal, State, or local environmental law or regulation, or compliance order or decree issued pursuant thereto, applicable to the handling, processing, reclamation, or other management activities associated with the recyclable material;

"(B) the person had reason to believe that hazardous substances had been added to the recyclable material for purposes other than processing for recycling; or

"(C) the person failed to exercise reasonable care with respect to the management and handling of the recyclable material (including adhering to customary industry practices current at the time of the recycling transaction designed to minimize, through source control, contamination of the recyclable material by hazardous substances).

"(2) For purposes of this subsection, an objectively reasonable basis for belief shall be determined

using criteria that include (but are not limited to) the size of the person's business, customary industry practices (including customary industry practices current at the time of the recycling transaction designed to minimize, through source control, contamination of the recyclable material by hazardous substances), the price paid in the recycling transaction, and the ability of the person to detect the nature of the consuming facility's operations concerning its handling, processing, reclamation, or other management activities associated with the recyclable material.

"(3) For purposes of this subsection, a requirement to obtain a permit applicable to the handling, processing, reclamation, or other management activities associated with recyclable material shall be deemed to be a substantive provision.

"(g) EFFECT ON OTHER LIABILITY.—Nothing in this section shall be deemed to affect the liability of a person under paragraph (1) or (2) of section 107(a).

"(h) REGULATIONS.—The Administrator has the authority, under section 115, to promulgate additional regulations concerning this section.

"(i) EFFECT ON PENDING OR CONCLUDED ACTIONS.—The exemptions provided in this section shall not

affect any concluded judicial or administrative action or any pending judicial action initiated by the United States prior to enactment of this section.

"(j) LIABILITY FOR ATTORNEY'S FEES FOR CERTAIN ACTIONS.—Any person who commences an action in contribution against a person who is not liable by operation of this section shall be liable to that person for all reasonable costs of defending that action, including all reasonable attorney's and expert witness fees.

"(k) RELATIONSHIP TO LIABILITY UNDER OTHER LAWS.—Nothing in this section shall affect—

"(1) liability under any other Federal, State, or local statute or regulation promulgated pursuant to any such statute, including any requirements promulgated by the Administrator under the Solid Waste Disposal Act; or

"(2) the ability of the Administrator to promulgate regulations under any other statute, including the Solid Waste Disposal Act.

"(l) LIMITATION ON STATUTORY CONSTRUCTION.—Nothing in this section shall be construed to—

"(1) affect any defenses or liabilities of any person to whom subsection (a)(1) does not apply; or

"(2) create any presumption of liability against any person to whom subsection (a)(1) does not apply."

(2) TECHNICAL AMENDMENT.—The table of contents for title I of such Act is amended by adding at the end the following item:

"SEC. 127. Recycling transactions.".

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The acquisition in fee of these three large parcels within Kodiak NWR now requires the U.S. Fish and Wildlife Service to make payments in lieu of taxes to the Kodiak Island borough in accordance with the Revenue Sharing Act of 1935. The act directs the agency to make such payments based on the fair market value of acquired lands.

The service is currently using the federally approved appraisals estimating fair market value of these three large parcels as the basis for computing the revenue sharing payment to the borough. The borough has rightly challenged the service's determination of fair market value based on the unique circumstances of these acquisitions and the findings made by the trustee council in approving funds for these acquisitions.

A plain reading of the Revenue Sharing Act (which authorizes the Secretary of the Interior to make refuge revenue sharing payments) requires that the determinations of fair market value be made in a manner that "the Secretary considers to be equitable and in the public interest." Clearly, the public interest associated with these unique acquisitions has been well documented in the findings of the trustee council.

The Revenue Sharing Act imposes no legal impediment for the Secretary to make a determination of fair market value that incorporates the unique circumstances of these acquisitions and the specific findings and actions taken by the trustee council. Thus, I urge the Secretary to review the Kodiak Island borough's appeal to the service's determinations for making revenue sharing payments and do what is fair and equitable as called for by the act.

These are unique circumstances that exist nowhere else in the United States and are limited in Alaska to lands acquired in the Exxon Valdez spill zone with settlement funds. Thus, there should be no consequences for how revenue sharing payments are computed for service acquired lands in other parts of Alaska or throughout the rest of the country.

At this opportunity, upon the passage of another year's funding for the Federal and Indian lands management agencies, I must call to the attention of my colleagues and to the attention of the President of the United States, an issue that troubles me deeply. Over the years, our Government has made commitments to native Americans which it has not kept. Many Americans thought that practice ended with the new, more enlightened self-determination approach to Indian policy. But as one of Alaska's representatives in the Senate, members of the President's staff made personal promises to me just last fall on behalf of the native people of the Chugach region which have not been kept.

In 1971 Congress passed the Alaska Native Claims Settlement Act (ANCSA). The act cleared the way for Alaska native people, including the Chugach natives, to receive title to a small portion of their traditional lands as settlement of their aboriginal land claims. The act also cleared the way for the additional millions of acres to our national parks, wildlife refuges, forests, and wilderness areas. Allowing native people to develop their lands freed them from economic bondage to the Federal Government. No longer would they have to depend exclusively on the benevolence of the Federal Government for hand-outs. They could create their own jobs, generate their own income, and determine their own destiny. But only if they had access to their lands.

Both the administration and the Congress recognized the lands would be virtually valueless if there was no way to get to them. The Claims Act recognized that native lands were to be used for both traditional and economic development purposes. Alaska natives were guaranteed a right of access, under law, to their lands across the vast new parks, refuges, and forests that would be created.

In 1971 and again in 1982, under the terms of the Chugach Native Inc. settlement agreement, the Federal Government made a solemn vow to ensure the Chugach people had access to their aboriginal lands. Now, a quarter of a century later, that commitment has not been fulfilled. Many of the native leaders who worked with me to achieve the landmark Native Land Claims Settlement Act have died after waiting for decades without seeing that promise honored. Last year, Congressman DON YOUNG, chairman of the House Resources Committee, added a provision to the House Interior appropriations bill that required, by a date certain, the Federal Government to live up to the access promises it made to the Chugach natives decades ago. In the conference last fall on the omnibus appropriations bill, the administration spoke passionately and repeatedly against the provision.

Why? They fully admitted the obligation to grant an access easement exists. They acknowledged further that access delayed is access denied and that further delays were harmful to the Chugach people. They opposed the provision on the grounds that it was not necessary since they were going to move with all due haste to finalize the easement before the end of 1998. Katie McGinty, then head of the President's Council on Environmental Quality sat across from me, looked me in the eye, and promised me they would fulfill this long overdue promise before the end of the year.

She even offered to issue a "Presidential proclamation" promising once again to do what had already been promised and promised and promised. My staff worked with OMB on the content of such a proclamation, but I told them it would not be necessary. I would take her at her word and believed the administration would live up to the personal commitment she made to me.

Here we are a year later. Chugach still has not received its easement. Ms. McGinty is gone, but her commitment on behalf of this administration remains. It is now the responsibility of others to ensure the promises she made to me and to Alaska's native people are kept.

Congressman YOUNG's House resources Committee has reported a bill, H.R. 2547, to address this issue legislatively, in the hope of forcing the administration to do what it has promised to do. Senator MURKOWSKI has been tireless in his efforts to get the Federal Government to live up to the promises made to Alaskans concerning access to our State and native lands. I support those efforts.

But I take the time today to say clearly to this administration that the promises made by our Government to the Chugach people for access to their lands—and to me personally as their representative—must be honored. Make no mistake, if the promises made to me by officials in this administration last fall are not lived up to soon, if they oppose the efforts of Congressman YOUNG and Senator MURKOWSKI on this issue, if they continue to obfuscate and "slow roll" this commitment, it will be clear to all that his administration does not perceive the true meaning of Robert Service's memorable phrase: "A promise made is a debt unpaid!"

Mr. LOTT. Mr. President, On behalf of myself and my cosponsor, Minority Leader DASCHLE, I would like to insert in the RECORD a legislative history which describes the purpose of each section of S. 1528, the Superfund Recycling Equity Act of 1999. Throughout the negotiations of this language there has been quite a bit of misrepresentation of the purpose of this bill. I hope this will be useful in clearing the confusion.

Mr. President, I ask unanimous consent that the legislative history be inserted in the RECORD at this point.

LEGISLATIVE HISTORY FOR S. 1528

SECTION 127—RECYCLING TRANSACTIONS

Summary

The Superfund Recycling Equity Act of 1999 (the language of S. 1528) seeks to correct the unintended consequence of CERCLA that actually discourages legitimate recycling. The Act recognizes that recycling is an activity distinct from disposal or treatment, thus sending material for recycling is not the same as arranging for disposal or treatment, and recyclable materials are not a waste. Removing the threat of CERCLA liability for recyclers will encourage more recycling at all levels.

The Act has three major elements. First, it creates a new CERCLA §127 which clarifies liability for recycling transactions. Second, it defines those recycling transactions for which there is no liability by providing that only those persons who can demonstrate that they "arranged for the recycling of recyclable material" as defined by the criteria in sections 127(c) through (e) are not liable under section 107(a)(3) or (a)(4). The specific definition of "arranged for recycling" varies depending upon the recyclable material involved. Third, a series of exclusions from the liability clarification are specified such that

persons who arranged for recycling as defined above may still be liable under CERCLA sections 107(a)(3) or (4) if the party bringing an action against such person can prove one of a number of criteria specified in §127(f). Lastly, new CERCLA §§ 127(g) through 127(l) clarify several miscellaneous issues regarding the proper application of the liability clarification.

Discussion

§127(a)(1) is intended to make it clear that anyone who, subject to the requirements of §127(b), (c), (d) and (e) arranged for the recycling of recyclable materials is not held liable under §§ 107(a)(3) or (4) of CERCLA. § 127 provides for relief from liability for both retroactive and prospective transactions.

§127(a)(2) is intended to preserve the legal defenses that were available to a party prior to enactment of this Act for those materials not covered by either the definition of a recyclable material in § 127(b) or the definition of a recycling transaction within the bill. It is not Congress' intent that the absence of a material or transaction from coverage under this Act create a stigma subjecting such material or transaction to Superfund liability.

§127(b)(1) is meant to include the broad spectrum of materials that are recycled and used in place of virgin material feedstocks. Whole scrap tires have been excluded from eligibility under this provision because of concerns about the environmental and health hazards associated with stockpiles of whole scrap tires. Processed tires including material from tires that have been cut or granulated, are eligible for the benefits of this provision.

The term "recyclable materials" is defined to include "minor amounts of material incident to or adhering to the scrap material . . ." This is because in the normal course of scrap processing various recovered materials may be commingled. An appliance may, for example, be run though a shredder that also shreds automobiles. As a result, the metal recovered from the appliance may come into contact with oil that entered the shredded incident to an automobile. Numerous other examples exist.

§127(b)(1)(A) is intended to exclude from the definition of recyclable material shipping containers between 30 and 3000 liters capacity which have hazardous substances other than metal bits and pieces in them. The terms "contained in" or "adhering to" do not include any metal alloy, including hazardous substances such as chromium or nickel, that are metallurgically or chemically bonded in the steel to meet appropriate container specifications.

§127(b)(1)(B) means that any item of material which contained PCBs at a concentration of more than 50 parts per million ("ppm") at the time of the transaction does not qualify as recyclable material. Material, which previously held a concentration of PCBs in excess of 50 ppm, but has been cleaned to levels below 50 ppm, would still qualify for exempt treatment. Item, in this context, is meant to apply only to a distinct unit of material, not an entire shipment.

This legislation builds a test to determine what are recycling transaction that should be encouraged under the legislation and what are recycling transactions that are really treatment or disposal arrangements cloaked in the mantle of recycling. The test specified in 127(c) applies to transactions involving scrap paper, plastic, glass, textiles, or rubber. Transactions can be a sale to a consuming facility; a return for recycling, whether or not accompanied by a fee; or other similar agreement.

§127(c), (d) and (e), the term "or otherwise arranging for the recycling of recyclable material" recognizes that while recyclables have intrinsic value they may not always be sold for a net positive amount. Thus a transaction in which one who arranges for recycling does not receive any remuneration for the material but rather pays an amount, less than the cost of disposal, still qualifies for the protection afforded by this § 127.

A commercial specification grade as referred to in § 127(c)91), can include specifications as those published by industry trade associations, or other historically or widely utilized specifications are acceptable. It is also recognized that specifications will continue to evolve as market conditions and technologies change.

For purposes of Sec. 127(c)(3), evidence of a market can include, but is not limited to: a third-party published price (including a negative price), a market with more than one buyer or one seller for which there is a documentable price, and a history of trade in the recyclable material.

§127(c)(3) means that for a transaction to be deemed arranging for recycling, a substantial portion, but not all, of the recyclable material must have been sold with the intention that the material would be used as a raw material, in place of a virgin material, in the manufacture of a new product. The fact that the recyclable material was not, for some reason beyond the control of the person who arranged for recycling, actually used in the manufacture of a new product should not be evidence that the requirements of this §127 were not met.

Additionally, no single benchmark or recovery rate is appropriate given variable market conditions, changes in technology, and differences between commodities. Instead, a common sense evaluation of how much of the material is recovered is appropriate. For example, in order to be economically viable as a recycling transaction a relatively high volume of the inbound material is expected to be recovered for feedstocks of relatively low per unit economic value (such as paper or plastic), while a dramatically lower volume of material is expected to be recovered to justify the recycling of a feedstock of very high economic value (such as gold or silver).

It is not necessary that the person who arranged for recycling document that a substantial portion of the recyclable material was actually used to make a new product. Instead, the person need only be prepared to demonstrate that it is common practice for recyclable materials that he handles to be made available for use in the manufacture of a new saleable product. For example, if recyclable stainless steel is sold to a stainless steel smelter, it is presumptive that recycling will occur.

The first part of § 127(c)(4) acknowledges the fact that modern technology has developed to the point were some consuming facilities exclusively utilize recyclable materials as their raw material feedstock and manufacture a product that, had it been made at another facility, may have been manufactured using virgin materials. Thus, the fact that the recyclable material did not directly displace a virgin material as the raw material feedstock should not be evidence that the requirements of § 127 were not met.

Secondary feedstocks may compete both directly and indirectly with virgin or primary feedstocks. In some cases a secondary feedstock can directly substitute for a virgin material in the same manufacturing process. In other cases, however, a secondary feedstock used at a particular manufacturing plant may not be a direct substitute for a virgin feedstock, but the product of that plant completes with a product made elsewhere from virgin material. For example aluminum may be utilized at a given facility using either virgin or secondary feedstocks meeting certain specifications. In this case, the virgin and secondary feedstock materials compete directly. A particular steel mill, however, may only utilize scrap iron and steel as a feedstock because of the design restrictions of the facility. If that mill makes a steel product that competes with the steel product of another mill, which utilizes a virgin feedstock, the conditions of this paragraph have been met. In this example, the two streams of feedstock materials do not directly compete, but the product made from them do. It is the intent of this paragraph that the person be able to demonstrate the general use for which the feedstock material was utilized. It is not the intent that the person show that a specific unit was incorporated into a new product.

Section 127 provides for relief from liability for both retroactive and prospective transactions. However, an additional requirement is placed on prospective transactions in this paragraph such that persons arranging for such transactions take reasonable care to determine the environmental compliance status of the facility to which the recyclable material is being sent. Reasonable care is determined using a variety of factors, of which no one factor is determinant. The clause "not procedural or administratrative" is included to protect one who arranges for recycling from losing the protection afforded by § 127 due to a record keeping error, missed deadline or similar infraction by the consuming facility which is out of control of the person arranging for recycling. For transactions occurring prior to, or during the 90 days after, enactment of § 127 the requirements of § 127(c)(5) shall not be considered in determining whether § 127 shall apply.

The person arranging for the transaction must exercise reasonable care at the time of the transaction (i.e., at the time when the buyer and seller reach a meeting of the minds). Should a consuming facility's compliance record indicate past non-compliance with the environmental laws, but at the time the person arranged for the transaction the person exercised reasonable care to determine that the consuming facility was in compliance with all applicable laws, the transaction would qualify for relief under §127.

In addition, the person must only determine the status of the consuming facility's compliance with laws, regulations, or orders, which directly apply to the handling, processing, reclamation, storage, or other management activity associated with the recyclable materials sent by the person. Thus, for example, a person who arranges for the recycling of scrap metal to a consuming facility would not be responsible for determining the consuming facility's compliance with regulations governing the consuming facilities production of its product, just the consuming facility's compliance with management of the scrap metal as an in-feed material.

It is common practice in the industry for scrap processors to otherwise arrange for the recycling of a secondary material through a broker. The broker chooses to which consuming facility the secondary material will be sold. In such cases, it is the responsibility of the broker, not the original person who entered into the transaction with the broker, to take reasonable care to determine the compliance status of the consuming facility. Likewise, a scrap processor may sell material to a consuming facility which in turn arranges for recycling of all or part of that material to another consuming facility. It is only the responsibility of the scrap processor to inquire into the compliance status of the party he arranged the transaction with, not subsequent parties.

In determining whether a person exercised reasonable care, the criteria to be applied should be considered in the context of the time of the transaction. Thus, when looking at "the price paid in the recycling transaction" in § 127(c)(6)(A) one should look not only at whether the price bore a reasonable relationship to other transactions for similar materials at the time of the transaction in question but should also take into account the circumstances surrounding the individual transaction such as whether it was part of a long term deal involving significant quantities. In addition, market conditions vary considerably over any given time period for any given commodity. Thus, when determining whether the price paid was reasonable, general market conditions, and variations should be considered.

Congress recognizes that small businesses often have less resources available to them than large businesses. Thus, § 127(c)(6)(B) acknowledges the fact that a small company may be able to determine less information about the consuming facility's operations than a large company. The size of an individual facility may be an important factor in the facility's ability to detect the nature of the consuming facility's operations.

§ 127(c)(6)(c) requires a responsible person who arranges for the recycling of a recyclable material to inquire of the appropriate environmental agencies as to the compliance status of the consuming facility. Federal, State, and local agencies may not respond quickly (or respond at all) to inquiries made regarding a specific facility's compliance record. § 127(c)(5) only requires a person to make *reasonable* inquiries; inquiries need not be made before every transaction. Inquiries need only be made to those agencies having primary responsibilities over environmental matters related to the handling, processing, etc. of the secondary materials involved in the recycling transaction.

§ 127(d)(1)(B) provides that a person who arranges for the recycling of scrap metal must meet all of the criteria set forth in § 127(c) as they relate to scrap metal and be in compliance with federal regulations or standards associated with scrap metal recycling that were in effect at the time of the transaction in question (not regulations promulgated or standards issued sequent to the time of the transaction). In addition, compliance must only be shown with Solid Waste Disposal Act regulations, which were promulgated and came into effect subsequent to enactment of § 127.

Section 127(d)(1)(C) as modified by § 127(d)(2) is not intended to exclude from liability relief such activities as welding, cutting metals with a torch, "sweating" iron from aluminum or other similar activities.

Section 127(d)(3) defines scrap metal using the regulatory definition found at 40 CFR 261.1 The Administrator is given the authority to exclude, by regulation, scrap metals that are determined not to warrant the exclusion from liability. Because § 127 grants relief from liability both prospectively and retroactively, any exclusion by the Administrator would only apply to transactions occurring after notice, comment and the final promulgation of a rule to such effect.

Persons who arrange for the recycling of spent batteries must meet the criteria specified in § 127(e), in addition to the criteria already discussed above and laid out in § 127(c) for transactions involving scrap paper, plastic, glass, textiles, or rubber.

The act of recovering the valuable components of a battery refers to the breaking (or smelting) of the battery itself in order to reclaim the valuable components of such battery. The generation, transportation, and collection of such batteries by persons who arrange for their recycling is an activity distinct from recovery. Thus, a person who generates, transports, and/or collects a spent battery, but does not themselves break or smelt such battery, is not liable under §§ 107(a)(3) and (4) provided all other requirements set out in this Section are met.

Section 127(e)(2)(A) provides that for spent lead-acid batteries, the party seeking the exemption must show that it met the federal environmental regulations or standards in effect at the time of the transaction in question (not regulations or standards issued subsequent to the time of the transaction).

Persons who arrange for recycling as defined by the criteria specified in sections 127(a)–(e) and discussed above may be liable under CERCLA §§ 107(a)(3) or (4) if the party bringing an action against such a person can demonstrate that one of the exclusions provided for in section 127(f) apply. Thus, the burden is on the government or other complaining party to demonstrate the criteria specified in section 127(f).

§ 127(f)(1)(A) is intended to mean that an "objectively reasonable basis for belief" is not equivalent to the reasonable care standard. The objectively reasonable basis for belief standard is meant to be a more rigorous standard than the reasonable care standard.

§ 127(f)(1)(A)(i) means that in order for the government to show that a recycling transaction should not receive the benefit of § 127, it would have to prove that a person knew that the material would not be recycled. Moreover, it is not necessary that every component of the recyclable material be recycled and actually find its way into a new product in order to meet this requirement.

For the purposes of § 127(f)(1)(A)(ii), smelting, refining, sweating, melting, and other operations which are conducted by a consuming facility for purposes of materials recovery are not considered incineration, nor would they be categorized as burning as fuel or for energy recovery. However, nothing in this bill shall be construed to limit the definition of recycling so as to restrict, inhibit, or otherwise discourage the recovery of energy through pyroprocessing from scrap rubber and other recyclable materials by boilers and industrial furnaces (such as cement kilns).

§ 127(f)(1)(A)(iii) sets forth certain obligations upon one who arranges for a recycling transaction which occurs within the first 90 days after enactment and had an objectively reasonable basis to believe that the consuming facility was not in substantive compliance with environmental laws and regulations. This is the corollary to § 127(c)(5). The clause "not procedural or administrative" is included to protect one who arranges for recycling from losing the protection afforded by § 127 due to record keeping error, missed deadline or similar infraction by the consuming facility which is out of control of the person arranging for recycling. There is no expectation that the person who arranged for recycling would necessarily have carried out any type of records search or made any extensive inquiries of administrative agencies.

The provision in § 127(f)(1)(B) is intended to apply to persons who intentionally add hazardous substances to the recyclable material in order to dispose or otherwise rid themselves of the substance.

§ 127(f)(1)(C) is intended to mean that reasonable care is to be judged based on industry practices and standards at the time of the transaction. Thus, in order to determine if a person failed to exercise reasonable care with respect to the management and handling of the recyclable material, one should look to the usual and customary management and handling practices in the industry at the time of the transaction.

In enacting § 127(l) Congress clearly intends that the exemptions from liability granted by §127 shall not affect any concluded judicial or administrative action. Concluded action means any lawsuit in which a final judgment has been entered or any administrative action, which has been resolved by consent decree, which has been filed in a court of law and approved by such court. Furthermore, § 127 shall not affect any pending judicial action brought by the United States prior to enactment of this section. Any pending judicial action, whether it was brought in a trial or appellate court, by a private party shall be subject to the grant of relief from liability. For purposes of this section, Congress intends that any third party action or joinder of defendants brought by a private party shall be considered a private party action, regardless of whether or not the original lawsuit was brought by the United States. Additionally, any administrative action brought by any governmental agency but not yet concluded as set forth above, shall be subject to the grant of relief from liability set forth in this § 127.

§ 127(l)(1) preserves the rights of a person to whom § 127(a)(1) does not apply to raise any defenses that might otherwise be raised under CERCLA. This is consistent with the explanation for § 127(a)(2).

By adding § 127(l)(2) Congress intended to make certain that no presumption of liability is created against a person solely because that person is not afforded the relief granted by § 127(a)(1).

Mr. DASCHLE. This past Wednesday—the day we finally produced a fragile budget agreement—marked the 199th anniversary of the first time Congress ever met in Washington, DC. They met that day in what was then an unfinished Capitol. Several times during the negotiations, the thought occurred to me that, if the same people who are running this Congress were in charge back then, the Capitol might still be unfinished.

These negotiations took longer, and were more difficult, than they needed to be. The good news is: We finally have a budget that will keep America moving in the right direction. Many longtime members and observers of Congress say this has been perhaps the most confusing, convoluted budget process they can remember.

There have been a lot of technical questions these last few weeks about accounting methods, economic growth projections, and CBO versus OMB scoring. But the big question—the fundamental question that was at the heart of this budget debate—is quite simple: Are we going to move forward—or backward?

We have chosen, thank goodness, to move forward. This budget continues the progress we've made over the last seven years. It maintains our hard-won fiscal discipline. It invests in America's future. And it honors our values.

This budget will put more teachers in our children's classrooms, and more police on our streets. It will enable us to honor our commitments to our parents, and fulfill America's obligations as a world leader. And, it will enable us to protect our environment and preserve precious wilderness areas for generations not yet born.

I want to thank the Majority Leader, my Democratic colleagues, especially Senator HARRY REID, our whip, and

Senator ROBERT BYRD, ranking member of the Appropriations Committee. I also want to thank some of my colleagues on the other side of the aisle, particularly Senator STEVENS, chairman of the Appropriations Committee.

In addition, I want to acknowledge and thank President Clinton and Vice President GORE, as well as the incredibly skillful, patient White House negotiating team, especially Chief of Staff John Podesta, Deputy Chief of Staff Sylvia Matthews, OMB Director Jack Lew; Larry Stein and Chris Jennings.

I also want to thank my own staff, and the staff of Appropriations Committee, who have worked many weekends, many late nights, to turn our ideas and debate into a workable budget document.

Finally, I want to acknowledge our dear friend, the late Senator John Chafee. Losing Senator Chafee so suddenly was one of the saddest moments in this difficult year. He embodied what is best about the Senate. He was a reasonable, honorable man who cared deeply about people. Completing the budget process was a major challenge. But in the end, I believe we have produced a budget John Chafee would have approved of.

This budget invests in our children's education - the best investment any nation can make. It maintains our commitment to reduce class size by hiring 100,000 teachers. It contains money to help communities repair old schools and build new ones. It will enable more children to get a Head Start in school, and in life. And it will allow more young people to attend after-school programs where they will be safe, and where they will have responsible adult supervision.

This budget protects Medicare beneficiaries by providing fair payments to the hospitals, clinics, home health care providers and nursing homes they rely on.

This budget will make our communities safer by putting 50,000 more police officers on the street—in addition to the 100,000 who have already been hired—and by investing in youth crime prevention.

This budget will help keep Americans healthy . . . by reducing hunger and malnutrition among pregnant women, infants and young children . . . and by increasing funding for the National Institute of Health and the national Centers for Disease Control.

This budget protects our environment. We took out riders that would have harmed our environment, and put in money to fund the President's Lands Legacy program.

This budget will help working families find affordable housing.

It will help farm and ranch families weather these hard times.

This budget protects our national security . . . by increasing military pay and readiness . . . and by reducing the nuclear threat at home and around the world.

This budget will help us fulfill our responsibilities as the world's only superpower. It provides money to pay our UN arrears and fund the Wye Accord to promote peace to the Middle East. It will also enable us to ease the crushing burden of debt on some of the world's poorest countries, so those nations can begin to invest in their own futures.

At the beginning of the year, our Republican colleagues proposed an $800 billion tax cut. For months, we all heard a lot of debate about what such a huge tax cut would mean. This budget makes it clear. There is no way we could have paid for an $800 billion tax cut without exploding the deficit again, or raiding Medicare, education, and other programs working families depend on.

Instead of moving backwards on taxes, we're moving forward. We're cutting taxes the right way. We're widening the circle of opportunity . . . by extending the R&D tax credit, and other tax credits that stimulate the economy . . . and by empowering people with disabilities by allowing them to maintain their Medicare and Medicaid coverage when they return to work.

There is one other point I want to make about the budget: For every dollar Democrats succeeded in restoring these last few weeks . . . for teachers, and police officers and other critical priorities . . . we have provided a dollar in offsets. Dollar for dollar, every one of our priorities is paid for. If CBO determines that this budget exceeds the caps, the overspending is in the basic budget our Republican colleagues drafted—on their own.

THE UNFINISHED AGENDA

As I said, Mr. President, this budget does move the country in the right direction—but only incrementally. My great regret and frustration with this Congress, is that we have achieved so little beyond this budget.

Look what we are leaving undone! In a year in which gun violence horrified America . . . a year in which gun violence invaded our schools and even a day care center . . . the far right has prevented this Congress from passing even the most modest gun safety measures—measures that would make it harder for children and criminals to get guns.

The far right has prevented this Congress—so far—from passing a Patients' Bill of Rights. More than 90 percent of Americans—Democrats and Republicans—support a real Patients' Bill of Rights that holds HMOs accountable. So does the AMA, the American Nurses Association—and 200 other health care and consumer organizations. And so does a bipartisan majority in both the House and Senate. Yet the Republican leaders in this Congress continue to use parliamentary tricks to deny patients their rights. As we leave here for the year, HMO reform, like gun safety, has been stuck for months in the black hole of conference committees.

The Republican leadership clearly is hoping that we will forget about all the shootings . . . forget about the families who have been injured because some HMO accountant overruled their doctor and denied needed medical treatment. I am here to tell them: The American people will not forget. And neither will Senate Democrats.

We will fight to close the gun show loophole. And we will fight to pass a real Patients' Bill of Rights next year. We will continue the fight for meaningful campaign finance reform. We will continue the fight to preserve and strengthen Medicare—including adding a prescription drug benefit. We will resume the fight for a decent minimum wage increase. We will fight for a fair resolution of the dairy-pricing issue. And, we will restore the rural loan guarantee program for satellite TV service, so rural Americans aren't left with second-class service.

It's taken a long time, but we finally have a budget that keeps America moving in the right direction. That is a relief, and a victory for the American people. But we still have a long way to go. We are leaving here with too many urgent needs unmet. We must do better next year.

Mr. LOTT. Mr. President, today the Superfund Recycling Equity Act, S. 1528, is being sent to the President as part of H.R. 3194. This is a great day for environmental law—this is the day that the public policy restores recycling as a rewarded, rather than punished activity.

This is a great day because partisan feuding was set aside so that the Congress could find a realistic, incremental, and common sense environmental fix. The freestanding Superfund Recycling Equity Act has strong bipartisan support with 68 cosponsors—68 Senators who have worked together to advance a fix to a small piece of the Superfund debate.

In this controversial world of environmental legislation it is rare that the leaders of the two parties in either Congressional body would agree on a piece of legislation. Well, here in the Senate we do. I wish to thank Minority Leader DASCHLE who understood the merits of recycling and twice joined with me to sponsor this legislation. Without his leadership, this legislation would not have been possible.

Mr. President, I would also like to commend the Senators who originally joined Senator DASCHLE and me in introducing this legislation. Senators WARNER and LINCOLN, who sponsored this measure in a previous Congress, have long exhibited their enthusiasm for fixing recycling rules. They are true leaders—leaders who have fostered this reasonable, workable, environmental proposal. Senator BAUCUS, the Ranking Minority Member of the Environment and Public Works Committee, has also been an avid supporter of recycling by including a version of the Superfund Recycling Equity Act in his comprehensive Superfund reform bill in the 103rd Congress. His six years of leadership in trying to fix public policy for recyclers is appreciated.

Mr. President, this bill would not be where it is at today, on the cusp of becoming law, had it not been for the active support of the late Senator John Chafee—a dear friend to me and many of our colleagues. John Chafee was a respected leader of the Environment and Public Works Committee. His advice and counsel helped shape my bill and he was an original cosponsor. I am proud to have been associated with him on this bill and its legislative process. I consider it a tribute that this bipartisan bill, negotiated with the Administration, representatives of the national environmental community, and the recycling industry, was supported by John Chafee, a man for whom consensus was so important. I believe this is not a footnote to John Chafee's legacy; rather I believe that he made this kind of cooperation possible.

The former mayor of Warwick, Rhode Island, is now the newly appointed Senator from Rhode Island. I have already had an opportunity to hear our newest senator—Senator LINCOLN CHAFEE—tell me about what Warwick has done with regards to recycling. It is a proud record—a record that would be extended and enhanced by this bill. I find it a credit to John Chafee's legacy that his son would be working with me on this legislation. Less than a month in the Senate and already LINCOLN's voice is being heard in ways that will directly help Rhode Island.

Mr. President, I also must recognize the vision of trade associations like American Petroleum Institute and National Federation of Independent Businesses for supporting an incremental solution. It would have been easier for these groups to oppose the bill because it did not address all the fixes for which they have been advocating. However, AFI and NFIB recognized that this increment would not jeopardize their efforts; rather it exemplifies the efforts of various stakeholders to accomplish something positive for the environment albeit it incremental.

And finally, I must thank the various staff members who have diligently worked toward the passage of this legislation: Eric Washburn and Peter Hanson of Senator DASCHLE's staff, Tom Gibson and Barbara Rogers of the Environment and Public Works committee staff, Charles Barnett of Senator LINCOLN's staff, Ann Loomis of Senator WARNER's staff, and my former staffer, Kristy Simms, who set the stage for this years success.

While too often Senators have seen various interest groups tell Congress why we cannot achieve some worthy environmental goal, the history of the Superfund Recycling Equity Act is replete with evidence of people coming together to correct a problem. Everyone, including myself, realizes that comprehensive reform is necessary to fix the vast array of problems in many different sectors of the environmental community. Unfortunately, we do not live in a perfect world, so Congress must do what is achievable whenever it is possible. This is good public policy—increments will show all parties there is a bridge for bipartisan environmental fixes. Recycling is the first of many necessary fixes, and I would bet my colleagues that it will not be the last fix.

This is a great day for many environmental groups who saw a change that they supported, not be taken hostage by the debate that has for so many years paralyzed reforms to Superfund. The original negotiation that resulted in the basis of the bill was tough and long—but it was fair. Each of the negotiating partners left items on the table that they would have wanted in an otherwise perfect world. Their collective approach was always bipartisan—they never pitted one party against another by pledging one group of interests against another. They remained loyal to their agreement for an unheard of five years—an eternity in Washington. Though this legislation was a long time in coming, I am grateful for its passage.

Mr. President, this is a great day for my good friend and fellow Mississippian, Phillip Morris. It is also a great day for the thousands of mom-and-pop recycling firms across America, like the one owned by Phillip Morris. This legislation protects the legacy of these firms which in most cases have been handed down through generations—often started by new immigrants to America nearly a hundred years ago. This ends the long Superfund nightmare that our nation's recyclers have suffered. Each time they sold their recyclable products they were, unintentionally, exposing themselves to costly Superfund liability. Removing Superfund as an impediment to recycling is a predicate to higher recycling rates throughout the nation.

The Superfund Equity Act is not about special interests getting a fix. No, this bill is about representing constituent interests throughout America and promoting the public interest. That is why Senator DASCHLE and I have 68 cosponsors—cosponsors that range completely across the liberal and conservative political spectrum, and range across all regions of America.

Mr. President, let me be clear, the Superfund Recycling Equity Act corrects a mistake nobody intended to make. When the Comprehensive Emergency Response, Compensation and Liability Act (CERCLA) was enacted in 1980, there was no suggestion that traditional recyclables—paper, plastic, glass, metal, textiles, and rubber were ever intended to be subject to Superfund liability. As a result of court interpretations, however, the sale of recyclables as manufacturing feedstock was considered to be arranging for the disposal of the material and, therefore, subject to Superfund's liability scheme. However, as we have all come to know as a matter of public policy, recycling is not disposal; it is the exact opposite of disposal.

Mr. President, let me say that again—recycling is not disposal, and a law is needed to remove this confusion. Sad, but true.

Enactment of this legislation clarifies this point and corrects the misinterpretations that have cost recyclers—primarily small family-owned businesses—millions and millions of dollars for problems they did not cause. With passage of the Superfund Recycling Equity Act, the costs of cleanup at sites that utilize recyclable materials as feedstock will be borne, rightfully, by those persons who actually cause or contribute to the pollution. As a result, those facilities will be less likely to cause contamination because they will no longer have recyclers to help them pay for Superfund cleanup. That's a powerful market incentive and will cause the consuming facility to become more environmentally conscientious.

Let me be clear, this legislation will not alter the basic tenants of environmental law—polluters will still pay. This legislation does not relieve recyclers of Superfund liability where they have polluted their own facilities. It also does not protect these businesses when they have sent materials destined for disposal to landfills or other facilities where those materials contributed, in whole or in part, to the pollution of those facilities. Furthermore, the public can expect recyclers to continue to be environmentally vigilant because they must operate their businesses in an environmentally sound manner, in order to be relieved of Superfund liability.

Today is a victory for coalition building that avoids the attack strategies that are so often employed by trade associations in DC. I hope they see the wisdom in building coalitions around achievable increments. This is how Congress can move forward. This is how Congress shows that it not only hears from its constituents but it acts successfully. Hostage taking, distortion, and scorch the earth approaches are not productive legislative strategies or lobbying tactics. Trade associations need to seek achievable solutions, develop responsible legislative goals, and avoid Beltway attack politics. I am extremely pleased that Congress has been able to take this tiny but very important step forward in reforming the Superfund law. I hope this accomplishment will inspire others to work for sensible, incremental solutions that help both our environment and our nation's economy.

I am proud that today Congress leveled the playing field and created equity in the statutory treatment of recycled material and virgin materials. I am proud to have removed the disincentives to recycling without loosening any existing liability laws for polluters. I am proud to have represented the mom and pop recyclers across America. I'm especially proud of the fact that this was all done in a bipartisan manner.

List of Subjects

40 CFR Part 51

Environmental protection, Air pollution control, Administrative practice and procedure, Carbon monoxide, Intergovernmental relations, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Transportation, Volatile organic compounds.

40 CFR Part 96

Environmental protection, Administrative practice and procedure, Air pollution control, Nitrogen dioxide, Reporting and recordkeeping requirements.

Dated: December 18, 1998.

Robert Perciasepe,

Assistant Administrator for Air and Radiation.

40 CFR parts 51 and 96 are amended as follows:

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

1. The authority citation for part 51 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

Subpart G—Control Strategy [Amended]

2. Section 51.121 is amended to revise paragraphs (e)(4) introductory text and (f)(2)(ii) to read as follows:

§ 51.121 Findings and requirements for submission of State implementation plan revisions relating to emissions of oxides of nitrogen.

* * * * *

(e) * * *

(4) If, no later than February 22, 1999, any member of the public requests revisions to the source-specific data and vehicle miles traveled (VMT) and nonroad mobile growth rates, VMT distribution by vehicle class, average speed by roadway type, inspection and maintenance program parameters, and other input parameters used to establish the State budgets set forth in paragraph (e)(2) of this section or the 2007 baseline sub-inventory information set forth in paragraph (g)(2)(ii) of this section, then EPA will act on that request no later than April 23, 1999 provided:

* * * * *

(f) * * *

(2) * * *

(ii) Impose enforceable mechanisms, in accordance with paragraphs (b)(1) (i) and (ii) of this section, to assure that collectively all such sources, including new or modified units, will not exceed in the 2007 ozone season the total NO_x emissions projected for such sources by the State pursuant to paragraph (g) of this section.

* * * * *

PART 96—NO_x BUDGET TRADING PROGRAM FOR STATE IMPLEMENTATION PLANS

3. The authority citation for part 96 continues to read:

Authority: U.S.C. 7401, 7403, 7410, and 7601.

4. Section 96.42 is amended in paragraph (f) to revise the formula immediately preceding the word "Where:" to read as follows:

§ 96.42 NO_x allowance allocations.

* * * * *

(f) * * *

Unit's share of NO_x allowances remaining in allocation set-aside = Total NO_x allowances remaining in allocation set-aside × (Unit's NO_x allowance allocation ÷ State trading program budget excluding allocation set-aside)

* * * * *

[FR Doc. 98–34150 Filed 12–23–98; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 266 and 273

[FRL–6207–7]

RIN 2050–AD19

Universal Waste Rule (Hazardous Waste Management System; Modification of the Hazardous Waste Recycling Regulatory Program)

AGENCY: Environmental Protection Agency.

ACTION: Final rule; correcting amendments.

SUMMARY: The Environmental Protection Agency (EPA) is correcting errors that appeared in the Universal Waste Rule which was published in the **Federal Register** (FR) on May 11, 1995 (60 FR 25492). This final rule creates no new regulatory requirements; rather it: makes three corrections to the regulations governing management of spent lead-acid batteries that are reclaimed; corrects the definition of a small quantity universal waste handler; and clarifies the export requirements which apply to destination facilities when destination facilities act as universal waste handlers.

EFFECTIVE DATE: December 24, 1998.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA/Superfund Hotline at (800) 424–9346 (toll free) or TDD 800 553–7672 (hearing impaired). Contact the RCRA Hotline in the Washington, D.C. metropolitan area at (703) 412–9810 or TDD 703 412–3323. For specific information concerning the Universal Waste Rule, contact Mr. Bryan Groce at (703) 308–8750, Office of Solid Waste, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, mailcode 5304W. This rule is available on the Internet. Please follow these instructions to access the rule electronically: From the World Wide Web (WWW), type://www.epa.gov/epaoswer, then select option for Laws and Regulations. The official record for this action is kept in a paper format.

SUPPLEMENTARY INFORMATION:

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1. What Is the Statutory Authority for This Rule?

EPA is issuing this rule under the authority of sections 1006, 2002(a), 3002, 3003, 3004, 3005, 3010 and 3017 as amended by the Resource Conservation and Recovery Act of 1976 (codified as 42 U.S.C. 6905, 6912(a), 6922, 6923, 6924, 6925, 6930, and 6937).

2. Does This Rule Create Any New Federal Requirements?

No. This rule is a technical correction and creates no new regulatory requirements. Rather, it corrects certain regulatory provisions that apply to regenerating and storing lead-acid batteries. The lead-acid battery provisions and the provisions for battery regeneration were originally included in a final rule promulgated on January 4, 1985 Final Rule (50 FR 614) and were mistakenly changed, deleted or incorrectly worded in the final Universal Waste Rule of May 11, 1995 (60 FR 25492). This rule also corrects the definition of a small quantity universal waste handler, and clarifies the export requirements which apply to destination facilities when destination facilities act as universal waste handlers.

3. What Does This Rule Do?

This rule amends portions in Chapter 40 of the Code of Federal Regulations (CFR) Parts 266 and 273. Specifically, the rule:

(a) Clarifies the lead-acid battery regeneration exemption (40 CFR 266.80(a)).

(b) Clarifies that lead-acid batteries that are stored before reclamation other than regeneration must be managed in accordance with the lead-acid battery storage requirements. (See 40 CFR 266.80(b)).

(c) Reinserts the spent lead-acid battery storage requirements which were mistakenly left out in the May 11, 1995 Universal Waste Rule.

(d) Corrects the current definition of small quantity universal waste handler found in the regulatory text in order to be consistent with the correct definition in the preamble to the final rule (40 CFR 273.6).

(e) Corrects preamble statements providing the regulatory references for universal waste export requirements that apply to destination facilities.

4. Why Are the Clarifications and Corrections in This Rule Necessary?

The Universal Waste Rule inadvertently:

(a) Created confusion about requirements for handling spent lead-acid batteries that will be regenerated.

(b) Deleted management requirements for storing lead-acid batteries before reclaiming them.

(c) Defined "small quantity handler of universal waste" incorrectly.

(d) Included in the preamble an incorrect citation for export requirements which apply to destination facilities that export universal wastes.

5. What Other Changes Have Been Made as a Result of This Rule?

EPA has chosen to rewrite and reorganize § 266.80, which covers requirements for lead-acid batteries that are to be reclaimed so that they are clearer and easier to use. These changes are made as part of the Agency's ongoing efforts at regulatory reinvention. Although the format has changed as a result of rewriting the regulatory text in "plain language," this final rule creates no new regulatory requirements. EPA is not intending to revise, reopen or reconsider the merits of any other aspects of the existing regulatory requirements at 40 CFR 266.80.

It is important to understand that all of the requirements found in today's final regulations, including those set forth in table format, constitute binding, enforceable legal requirements. The plain language format used in today's final regulation for lead-acid batteries may appear different from other rules, but it establishes binding, enforceable legal requirements like those in the existing regulations at 40 CFR part 266.

6. What Federal Requirements Apply to Spent Lead-Acid Batteries?

The federal regulations that apply to spent lead-acid batteries have changed over time. The following table summarizes how the requirements have evolved:

Date	Rule	Legal requirements
1–4–85	40 CFR 266.30 (subsequently changed to 40 CFR 266.80).	(1) Exempts spent lead-acid batteries from hazardous waste management requirements when they are: (a) Handled by anyone (i.e., retailers, wholesalers, local service stations) other than reclaimers (i.e., a battery cracker or secondary lead smelter); (b) Collected and stored at intermediate facilities (i.e., collection facilities) before being sent to reclaimers; and (c) Transported. (2) Requires battery crackers or secondary lead smelters to manage spent lead-acid batteries as hazardous waste when storing the batteries before reclaiming them.
1–4–85	40 CFR 261.6(a)(3)(ii)	Exempts spent lead-acid and other batteries from hazardous waste management requirements if they are returned to a battery manufacturer for regeneration.
5–11–95	Universal Waste Rule 40 CFR Part 273	(1) Removed the provision (40 CFR 261.6(a)(3)(ii)) that exempted batteries from hazardous waste management requirements if they are to be regenerated. (2) Non-lead acid batteries (except as provided in Public Law 104–142, entitled the "Mercury-containing and Rechargeable Battery Management Act") may be managed in accordance with requirements in either: (a) Universal Waste Rule (40 CFR Part 273); or (b) Full Subtitle C regulation (40 CFR Parts 260 through 272). (3) Spent lead-acid batteries may be managed according with requirements of either: (a) Universal Waste Rule (40 CFR Part 273); or (b) Special requirements in 40 CFR 266 Subpart G.

Date	Rule	Legal requirements
5–13–96	Mercury-Containing and Rechargeable Battery Management Act (PL 104–142) Section 104(a), to be codified in a future EPA action, but directly enforceable as a matter of law on the date of passage.	(1) Requires that the collection, storage, and transportation of the following types of batteries be regulated under the May 11, 1995 Universal Waste Rule: (a) Used rechargeable batteries (b) Certain lead-acid batteries not managed under 40 CFR 266 Subpart G (c) Rechargeable alkaline batteries (d) Certain mercury-containing batteries banned for domestic sale (e) Used consumer products containing rechargeable batteries that aren't easily removable.
	Section 104(a)(2) of the Mercury-Containing and Rechargeable Battery Management Act.	(2) Stipulates that section 104(a) does not apply to any lead-acid battery that is managed in accordance with requirements in 40 CFR 266 Subpart G or equivalent requirements in an approved state program.

7. Why Are There Two Options for Managing Lead-Acid Batteries?

EPA included lead-acid batteries in the Universal Waste Rule as a convenience to generators and handlers that accumulate different types of spent hazardous waste batteries. In some cases, it may be easier to manage all spent batteries in the same way under the Universal Waste Rule, rather than separating out the lead-acid batteries for handling under 40 CFR Part 266. EPA retained the requirements for lead-acid batteries in 40 CFR 266.80 because they have resulted in a very successful recycling program for automotive batteries. Ninety percent of all used automotive lead-acid batteries are recycled.

8. Is Lead-Acid Battery Regeneration A Type of Reclamation? If Yes, Why Did EPA Decide to Regulate It Differently From Other Lead-Acid Battery Reclamation?

Yes, regeneration is a type of reclamation that EPA has authority to regulate. However, in 1985 EPA chose to exempt it from regulation because battery regeneration posed low environmental risks and resembled recycling activities that EPA did not regulate. (See 48 FR at 14496; 50 FR at 649.) Exempt "regeneration" includes only replacing drained electrolyte fluids and replacing "bad" battery cells. (See 48 FR at 14496.)

EPA felt that the recycling of lead-acid batteries to recover lead posed different environmental risks. (See 48 FR at 14496, note 50.) The lead recovery process involves cracking battery casings and smelting the lead plates. EPA chose to regulate storage by battery reclaimers prior to this type of reclamation. EPA also noted that wastes from the reclamation process would continue to be regulated. (See 48 FR at 14496.) EPA chose not to regulate storage by other persons and chose not to regulate transportation, finding that a number of factors made regulation unnecessary. (See 48 FR 14498–99.) Today's clarification of the lead-acid battery rules does not change any requirements and does not provide new opportunity under section 7006 of RCRA to challenge the earlier actions that put the rules in place.

9. How Does Today's Technical Correction Clarify Requirements for Handling Spent Lead-Acid Batteries That Will Be Regenerated?

As currently drafted, 40 CFR 266.80(a), reads: "Persons who generate, transport, or collect spent batteries, who regenerate spent batteries, or who store spent batteries but do not reclaim them (other than spent batteries that are to be regenerated) are not subject to regulation under parts 262 through 266 or part 270 or 124 of this chapter * * *". We are concerned that the meaning of the phrase within the parentheses isn't clear. Today's technical correction changes 40 CFR 266.80(a) by replacing it with a table that more fully explains when lead-acid batteries are exempt from hazardous waste management requirements. The table reflects EPA's original intent (as expressed in the Universal Waste Rule published on May 11, 1995) for the amendment made to 40 CFR 266.80.

10. How Does Today's Technical Correction Affect Management Requirements for Storing Lead-Acid Batteries Before Reclaiming Them?

Today's action does not change any management requirements for storage of lead-acid batteries. When EPA amended 40 CFR 266.80 in the final Universal Waste Rule, the management requirements for storing spent lead-acid batteries before reclamation were mistakenly deleted. (Compare 40 CFR 266.80(b)(1)–(4)(1994 edition) with § 266.80(b) at 60 FR 25542.) Today's technical correction restores to 40 CFR 266.80(b) the deleted storage requirements for spent lead-acid batteries when the batteries aren't regenerated. In addition, for the sake of clarity, the restored requirements have been reorganized by separating the requirements for interim status facilities and permitted facilities. Further, the restored requirements have been reorganized so that they are presented in a more readable format. Although the requirements have been separated and reformatted, they are substantively the same as those mistakenly deleted. In other words, there are no new requirements as a result of these modifications.

Specifically, the restored provisions list the applicable requirements for interim status facilities, which include: (1) Notification requirements under section 3010 of RCRA; (2) All applicable provisions in subpart A of 40 CFR part 265; (3) All applicable provisions in subpart B of 40 CFR part 265 (but not § 265.13, dealing with waste analysis); (4) All applicable provisions in subparts C and D of 40 CFR part 265; (5) All applicable provisions in subpart E of 40 CFR part 265 (but not §§ 265.71 and 265.72, dealing with the use of the manifest and manifest discrepancies); (6) All applicable provisions in subparts F through L of 40 CFR part 265 of this chapter; and (7) All applicable provisions in 40 CFR parts 270 and 124.

Likewise, the restored provisions list the applicable requirements for permitted facilities which include: (1) Notification requirements under section 3010 of RCRA; (2) All applicable provisions in subpart A of 40 CFR part 264; (3) All applicable provisions in subpart B of 40 CFR part 264 (but not § 264.13, dealing with waste analysis); (4) All applicable provisions in subparts C and D of 40 CFR part 264; (5) All applicable provisions in subpart E of 40 CFR part 264 (but not § 264.71 or § 264.72, dealing with the use of the manifest and manifest discrepancies); (6) All applicable provisions in subparts F through L of 40 CFR part 264; and (7) All applicable provisions in 40 CFR parts 270 and 124. Again, EPA takes the position that this clarification of existing provisions does not provide new opportunity to challenge them.

11. How Does Today's Technical Correction Change the Definition of "Small Quantity Handler of Universal Waste?"

Today's technical correction changes the current definition of "small quantity handler of universal waste" by making it consistent with the definition in the preamble to the May 11, 1995 Universal Waste Final rule. The correction clearly distinguishes the difference between a small quantity handler of universal waste and a large quantity handler of universal waste. Without today's technical correction, there is the potential for confusion when distinguishing small quantity handlers from large quantity handlers since the current regulatory definitions are not mutually exclusive.

Current definition of small quantity handler of universal waste	Newly corrected definition of small quantity handler of universal waste
"A small quantity handler of universal waste means a universal waste handler (as defined in this section) who does not accumulate more than 5000 kilograms total of universal waste* * *.	"A small quantity handler of universal waste means a universal waste handler (as defined in this section) who does not accumulate 5000 kilograms or more total of universal waste* * *.

12. How Is EPA Correcting Requirements Related to Exports of Universal Wastes?

The discussion of destination facility requirements in the preamble to the final Universal Waste Rule (60 FR 25533–34) states that the export requirements for destination facilities are included in the final rule as "subpart E, § 273.63." This citation is incorrect; § 273.63 does not exist. A destination facility that sends universal waste to a foreign destination (i.e., outside the United States) is subject to either:

(a) Section § 273.20 or § 273.40 depending on their universal waste handler classification, or (b) Section § 273.56 if the destination facility actually transports universal waste to a foreign destination.

In addition, on page 25534 of the preamble to the final universal waste rule, there is a parenthetical statement at the end of the first paragraph referring the reader to section III.F.10 of the preamble for a discussion of issues related to exports of universal waste. The citation is incorrect. The discussion of issues related to exports of universal waste is in section IV.E.10 of the preamble to the final rule. Since the errors mentioned above were made in the preamble of the Universal Waste Rule, the export requirements for universal wastes are unaffected by today's rule.

13. Why Isn't EPA Proposing These Changes for Public Comment and Establishing an Effective Date Later Than the Promulgation Date?

Today's technical correction creates no new regulatory requirements. It reinstates regulatory language that was mistakenly changed in a previous EPA rule, and clarifies existing regulatory requirements. For these reasons, EPA finds that good cause exists under 5 U.S.C. 553(b)(3)(B) to issue these corrections as a final rule without notice and opportunity for comment. For the same reasons, EPA finds that there is good cause under 5 U.S.C. 553(d)(3) and 42 U.S.C. 6930(b)(3) (section 3010(b)(3) of RCRA) to make this regulation immediately effective upon promulgation.

14. Does This Technical Correction Meet Conditions Described in the Executive Order 12866, the Regulatory Flexibility Act, the Unfunded Mandates Reform Act of 1995, the Paperwork Reduction Act, the National Technology Transfer and Advancement Act of 1995, and Executive Orders 13045, 12875, and 13084?

Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866, (58 FR 51.735 (October 4, 1993)) the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order."

It has been determined that this rule is not a "significant regulatory action" under the terms of Executive Order 12866 and is therefore not subject to OMB review."

Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA), as amended by the Small Business Enforcement and Fairness Act, 5 U.S.C. 601–612, generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. EPA has determined that today's rule will not have a significant economic impact on a substantial number of small entities. The rule does not impose any additional burdens on small entities because it does not create any new regulatory requirements. Therefore, EPA has determined that it is appropriate to certify that this rule will not have a significant economic impact on a substantial number of small entities.

The Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. For the reason described above, that the rule does not create any new requirements, it does not contain a Federal mandate that may result in annual expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or for the private sector. The rule likewise contains no regulatory requirements that might significantly or uniquely affect small governments under section 203 of the UMRA and imposes no burdens that may result in annual expenditures of $100 million or more. Accordingly, the requirements of UMRA do not apply.

Paperwork Reduction Act

Since this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it does not affect requirements under the Paperwork Reduction Act.

The National Technology Transfer and Advancement Act of 1995

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Pub L. 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies.

The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This technical correction action does not involve technical standards. Therefore, EPA did not consider the use of any voluntary standards in this rulemaking.

Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

This technical correction is not subject to E.O. 13045, entitled "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997), because this action is not an economically significant rule, and it does not involve decisions on environmental health risks or safety risks that may disproportionately affect children.

Executive Order 12875: Enhancing Intergovernmental Partnerships

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments. If the mandate is unfunded, EPA must provide to the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, copies of any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments "to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates."

Today's technical correction does not create a mandate on State, local or tribal governments. The rule does not impose any enforceable duties on these entities. Today's rule corrects errors to existing regulations governing management of spent lead-acid batteries that are reclaimed and corrects the definition of small quantity universal waste handlers. Accordingly, the requirements of section 1(a) of Executive Order 12875 do not apply to this rule.

Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments. If the mandate is unfunded, EPA must provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's technical correction does not significantly or uniquely affect the communities of Indian tribal governments. Today's rule corrects errors to existing regulations governing management of spent lead-acid batteries that are reclaimed and corrects the definition of small quantity universal waste handlers. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

15. Has EPA Submitted This Rule to Congress and the General Accounting Office?

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2) as amended.

List of Subjects

40 CFR Part 266

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

40 CFR Part 273

Hazardous materials transportation, Hazardous waste.

Dated: December 8, 1998.

Timothy Fields, Jr.,

Acting Assistant Administrator, Office of Solid Waste and Emergency Response.

40 CFR parts 266 and 273 is amended as follows:

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

1. The authority citation for part 266 continues to read as follows:

Authority: 42 U.S.C. 1006, 2002(a), 3004, and 3014, 6905, 6906, 6912, 6922, 6923, 6924, 6925, and 6937.

Subpart G—Spent Lead-Acid Batteries Being Reclaimed

2. Section 266.80 is revised to read as follows:

§ 266.80 Applicability and requirements.

(a) Are spent lead-acid batteries exempt from hazardous waste management requirements? If you generate, collect, transport, store, or regenerate lead-acid batteries for reclamation purposes, you may be exempt from certain hazardous waste management requirements. Use the following table to determine which requirements apply to you. Alternatively, you may choose to manage your spent lead-acid batteries under the "Universal Waste" rule in 40 CFR part 273.

If your batteries * * *	And if you * * *	Then you * * *	And you * * *
(1) Will be reclaimed through regeneration (such as by electrolyte replacement).		are exempt from 40 CFR Parts 262 (except for §262.11) 263, 264, 265, 266, 268, 270, 124 of this chapter, and the notification requirements at section 3010 of RCRA.	are subject to 40 CFR Parts 261 and 262.11 of this chapter.
(2) Will be reclaimed other than through regeneration.	generate, collect, and/or transport these batteries.	are exempt from 40 CFR Parts 262 (except for §262.11) 263, 264, 265, 266, 270, 124 of this chapter, and the notification requirements at section 3010 of RCRA.	are subject to 40 CFR Parts 261 and 262.11, and applicable provisions under Part 268.
(3) Will be reclaimed other than through regeneration.	store these batteries but you aren't the reclaimer.	are exempt from 40 CFR Parts 262 (except for §262.11) 263, 264, 265, 266, 270, 124 of this chapter, and the notification requirements at section 3010 of RCRA.	are subject to 40 CFR Parts 261, 262.11, and applicable provisions under Part 268.
(4) Will be reclaimed other than through regeneration.	store these batteries before you reclaim them.	must comply with 40 CFR 266.80(b) and as appropriate other regulatory provisions described in 266.80(b).	are subject to 40 CFR Parts 261, 262.11, and applicable provisions under Part 268.
(5) Will be reclaimed other than through regeneration.	don't store these batteries before you reclaim them.	are exempt from 40 CFR Parts 262 (except for §262.11) 263, 264, 265, 266, 270, 124 of this chapter, and the notification requirements at section 3010 of RCRA.	are subject to 40 CFR Parts 261, 262.11, and applicable provisions under Part 268.

(b) If I store spent lead-acid batteries before I reclaim them but not through regeneration, which requirements apply? The requirements of paragraph (b) of this section apply to you if you store spent lead-acid batteries before you reclaim them, but you don't reclaim them through regeneration. The requirements are slightly different depending on your RCRA permit status.

(1) For Interim Status Facilities, you must comply with:

(i) Notification requirements under section 3010 of RCRA.

(ii) All applicable provisions in subpart A of part 265 of this chapter.

(iii) All applicable provisions in subpart B of part 265 of this chapter except § 265.13 (waste analysis).

(iv) All applicable provisions in subparts C and D of part 265 of this chapter.

(v) All applicable provisions in subpart E of part 265 of this chapter except §§ 265.71 and 265.72 (dealing with the use of the manifest and manifest discrepancies).

(vi) All applicable provisions in subparts F through L of part 265 of this chapter.

(vii) All applicable provisions in parts 270 and 124 of this chapter.

(2) For Permitted Facilities.

(i) Notification requirements under section 3010 of RCRA.

(ii) All applicable provisions in subpart A of part 264 of this chapter.

(iii) All applicable provisions in subpart B of part 264 of this chapter (but not § 264.13 (waste analysis).

(iv) All applicable provisions in subparts C and D of part 264 of this chapter.

(v) All applicable provisions in subpart E of part 264 of this chapter (but not § 264.71 or § 264.72 (dealing with the use of the manifest and manifest discrepancies).

(vi) All applicable provisions in subparts F through L of part 264 of this chapter.

(vii) All applicable provisions in parts 270 and 124 of this chapter.

PART 273—STANDARDS FOR UNIVERSAL WASTE MANAGEMENT

3. The authority citation for part 273 continues to read as follows:

Authority: 42 U.S.C. 6922, 6923, 6924, 6925, 6930, and 6937.

4. Section 273.6 is amended by revising the definition of "Small Quantity Handler of Universal Waste" to read as follows:

§ 273.6 Definitions.

* * * * *

Small Quantity Handler of Universal Waste means a universal waste handler (as defined in this section) who does not accumulate 5,000 kilograms or more total of universal waste (batteries, pesticides, or thermostats, calculated collectively) at any time.

* * * * *

[FR Doc. 98–34044 Filed 12–23–98; 8:45 am]

BILLING CODE 6560–50–U

DEPARTMENT OF DEFENSE

48 CFR Chapter 2

Defense Federal Acquisition Regulation Supplement; Technical Amendments to Update Activity Names and Addresses

AGENCY: Department of Defense (DoD).

ACTION: Final rule.

SUMMARY: The Director of Defense Procurement is amending the Defense Federal Acquisition Regulation Supplement to update names and addresses of DoD activities.

EFFECTIVE DATE: December 24, 1998.

FOR FURTHER INFORMATION CONTACT: Ms. Melissa Rider, Defense Acquisition Regulations Council, PDUSD (A&T) DP (DAR), IMD 3D139, 3062 Defense Pentagon, Washington, DC 20301–3062. Telephone (703) 602–0131; telefax (703) 602–0350.

List of Subjects in 48 CFR Chapter 2

Government procurement.

Michele P. Peterson,

Executive Editor, Defense Acquisition Regulations Council.

Therefore, 48 CFR Appendix G to Chapter 2 is amended as follows:

1. The authority citation for 48 CFR Appendix G to subchapter I continues to read as follows:

Authority: 41 U.S.C. 421 and 48 CFR Chapter 1.

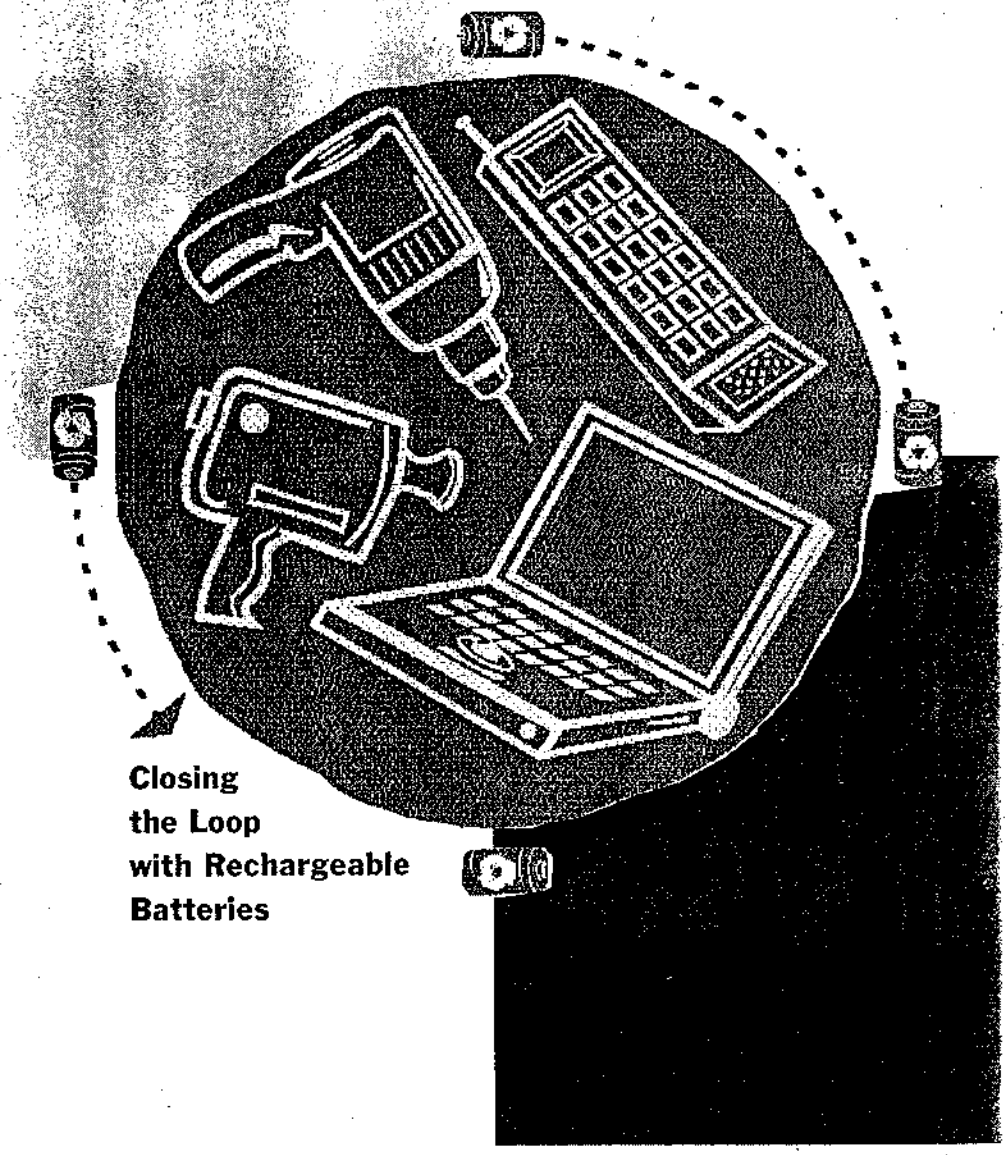
Appendix G To Chapter II—Activity Address Numbers

2. Appendix G to Chapter 2 is amended in Part 5 by adding a new entry at the end to read as follows:

United States Environmental Protection Agency | Solid Waste And Emergency Response (5306W) | EPA530-K-97-009 November 1997 http://www.epa.gov

EPA

Implementation of the Mercury-Containing and Rechargeable Battery Management Act



Closing the Loop with Rechargeable Batteries

Introduction

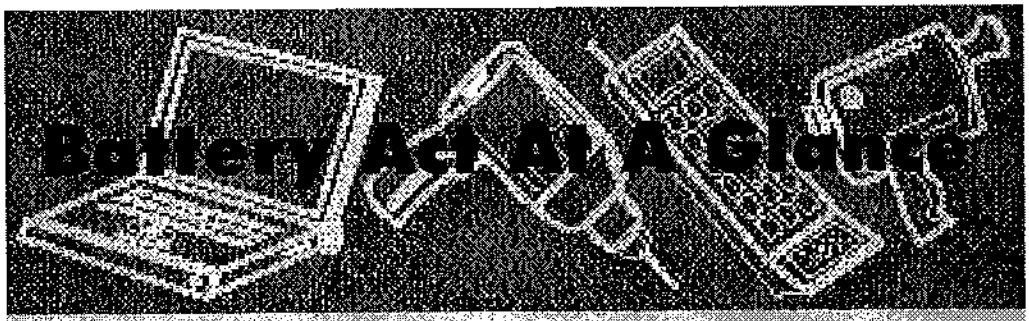
Whether at work or at home, more and more Americans are enjoying the convenience of rechargeable batteries. They're being used in cellular phones, laptop computers, cordless power tools, and video cameras. In fact, more than 350 million rechargeable batteries are purchased annually in the United States. When thrown away, these batteries can contribute to the toxicity levels of landfills and incinerator ash, as many of them contain heavy metals. Recycling rechargeable batteries not only gives new life to discarded products—it helps prevent the release of hazardous constituents into the environment.

Recycling rechargeable batteries not only gives new life to discarded products—it helps prevent the release of hazardous constituents into the environment.

On May 13, 1996, President Clinton signed into law the Mercury-Containing and Rechargeable Battery Management Act (the Battery Act). This Act represents a major step forward in the effort to facilitate the recycling of nickel-cadmium (Ni-Cd) and certain small sealed lead-acid (SSLA) rechargeable batteries and to phase out the use of mercury in batteries.

This booklet explains what this important law means to you. It equips readers with the "basics" on the Battery Act and provides information on successful recycling programs for rechargeable batteries. In this booklet, you will find:

- A summary of state and federal requirements affecting battery recycling prior to passage of the Battery Act
- A summary of the Act's requirements
- Why proper disposal or recycling is necessary for Ni-Cd and SSLA batteries
- State, local, and private-sector initiatives to recycle used rechargeable batteries



Battery Act At A Glance

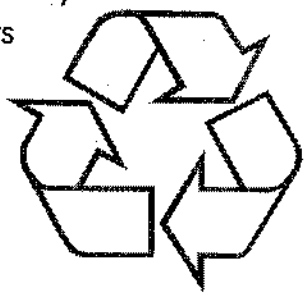
Acknowledging the steady increase in the use of rechargeable batteries, as well as potential environmental impacts resulting from their improper disposal, Congress passed the Battery Act to facilitate the increased collection and recycling of Ni-Cd and certain SSLA rechargeable batteries. The Act targets battery and product manufacturers and battery waste handlers—not consumers. Different sections of the Act apply to different types of batteries. Specifically, the Act:

- Establishes national, uniform labeling requirements for Ni-Cd and certain SSLA rechargeable batteries.
- Mandates that Ni-Cd and certain SSLA rechargeable batteries be "easily removable" from consumer products. A battery can be easily removed if it is detachable or removable from the product with the use of common household tools.
- Makes the Universal Waste Rule (see page 4) effective immediately in all 50 states for the collection, storage, and transportation of batteries covered by the Battery Act. (For a list of covered batteries, see EPA's codification rule, expected to be promulgated in late 1997. That rule will codify the requirements of Section 104 of the Battery Act into Title 40 of the Code of Federal Regulations.)
- Requires EPA to establish a public education program on battery recycling and the proper handling and disposal of used batteries. EPA is required to consult with manufacturers and retailers to carry out this initiative.
- Prohibits, or otherwise conditions, the sale of certain types of mercury-containing batteries (i.e., alkaline-manganese, zinc-carbon, button cell mercuric-oxide, and other mercuric-oxide batteries) in the United States.

State and Federal Requirements Affecting Battery Recycling Prior to the Battery Act

Prior to the Battery Act, 13 states took the lead by passing laws to facilitate the collection and recycling of used rechargeable batteries. These laws required that rechargeable dry cell batteries be labeled as recyclable and be easily removable from consumer products. The 13 states are California, Connecticut, Florida, Iowa, Maine, Maryland, Minnesota, New Hampshire, New Jersey, New York, Oregon, Rhode Island, and Vermont. All of these states except California, New Hampshire, New York, and Oregon also established battery collection and recycling programs.

Although somewhat similar, there were slight differences in the laws enacted by the states. The laws differed in whether the battery labels were required to include the three chasing arrows or some other recycling symbol, the manufacturer's name, or a toll-free telephone number. There were also differences regarding whether the text must appear on the product or the packaging, in the instruction manual, or on the battery itself.



On the federal level, the Resource Conservation and Recovery Act (RCRA) regulates hazardous wastes and establishes comprehensive reporting, handling, and transportation requirements for hazardous wastes. Since batteries often contain hazardous or potentially hazardous constituents, many batteries, including Ni-Cd and SSLA rechargeable batteries, may be regulated under RCRA. The law does exempt household waste, which often includes some batteries. In addition, certain small businesses (i.e., conditionally exempt small quantity generators) may be exempt from some RCRA regulations under certain circumstances. Other businesses and institutions that handle batteries that are hazardous waste may be subject to the full array of hazardous waste regulations.

What Is the Universal Waste Rule?

In May 1995, the U.S. Environmental Protection Agency (EPA) promulgated the Universal Waste Rule to reduce the amount of hazardous wastes entering the municipal solid waste stream, encourage the recycling and proper disposal of certain common hazardous wastes, and reduce the regulatory burden on businesses that generate these wastes by simplifying the applicable regulations and making them easier to comply with. This rule recognizes that some common hazardous wastes—such as used Ni-Cd rechargeable batteries—do not require the full array of hazardous waste regulatory requirements. It also eases the regulatory burden on battery handlers and transporters by streamlining a number of RCRA's hazardous waste collection and management requirements, including those related to notification, labeling/marking, accumulation time limits, employee training, and offsite shipment, among others. For example, the Universal Waste Rule extends the amount of time that certain businesses can accumulate used rechargeable batteries on site. It also allows certain companies to transport them with a common carrier, instead of a hazardous waste transporter.

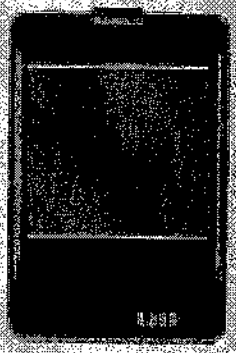
Prior to passage of the Battery Act, a battery recycling program spanning across several states had to comply with varying, and sometimes conflicting, state labeling and waste management regulations.

The Universal Waste Rule, however, does not automatically apply in each state. In states authorized by EPA to implement the Federal hazardous waste program, the rule is not applicable until those states revise their programs to adopt equivalent requirements under state law and receive authorization from EPA.

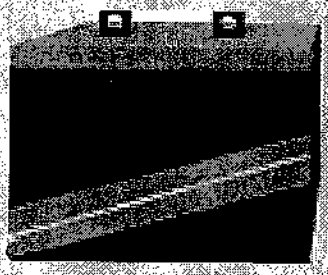
Hence, prior to passage of the Battery Act, a battery recycling program spanning across several states had to comply with varying, and sometimes conflicting, state labeling and waste management regulations. In some states, the rechargeable batteries were subject to the full array of hazardous waste requirements, while in other states the rechargeable batteries were subject to the reduced Universal Waste Rule requirements.

What Are Rechargeable Batteries?

Unlike single-use batteries, which must be replaced once their charge is used up, rechargeable batteries are designed for the long haul. Depending on the application, some rechargeable batteries can recharge up to 1,000 times! Recharging the battery simply reverses the chemical reaction inside it. This changes the battery's components nearly back to their original state and allows them to be reused.



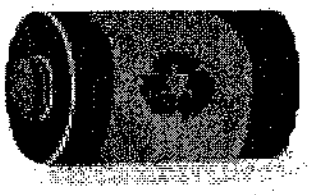
About 80 percent of rechargeable batteries are currently composed of nickel and cadmium (known as "Ni-Cd"). Ni-Cd rechargeable batteries are commonly found in cellular and cordless telephones, video cameras, portable power tools, and laptop computers. The use of these batteries continues to grow. It has been estimated that one-half billion Ni-Cd batteries will be sold in the year 2000.



Small sealed lead acid batteries (SSLA) are used in emergency lighting, security and alarm systems, computer backup devices, and hospital equipment. They are also used in cellular phones, laptop computers, and power tools.

Rechargeable batteries may initially be more expensive than single-use batteries, and they sometimes require the purchase of a recharger, but the upfront costs are often outweighed by the long-term cost savings and environmental benefits of rechargeables. Each rechargeable battery may substitute for hundreds of single-use batteries over its useful life. (See Section 3 of the Act for the specific definition of "rechargeable battery" as it applies to the Act.)

Requirements of the Battery Act



There are two major sections of the Battery Act. The first section, or Title I, facilitates the efficient recycling of Ni-Cd, certain SSLA, and other rechargeable batteries. The second section, or Title II, phases out the use of batteries that contain mercury.

Title I: Rechargeable Batteries

The Battery Act changed the regulatory framework governing rechargeable batteries. It streamlined the framework in an effort to remove the regulatory barriers to increased recycling of rechargeable batteries. Below is a summary of Title I's major provisions and requirements.

Section 103: Easy Removability and Labeling Requirements for Rechargeable Batteries and Products

The Act establishes national, uniform labeling requirements for regulated batteries and rechargeable consumer products and mandates that regulated batteries manufactured after May 13, 1997 be "easily removable" from consumer products. A battery can be "easily removed" if it is detachable or removable from the product with the use of common household tools. The term "regulated battery" refers to Ni-Cd, certain SSLA, and, in the future, other rechargeable batteries and battery packs if EPA decides to add them to the list. (See Section 3 of the Act for the specific definitions of "easily removable," "regulated battery," "rechargeable battery," "rechargeable consumer product," and other important terms as they apply to the Act. See in particular Section 3(5)(C) for an understanding of which types of lead-acid batteries are subject to Section 103.)

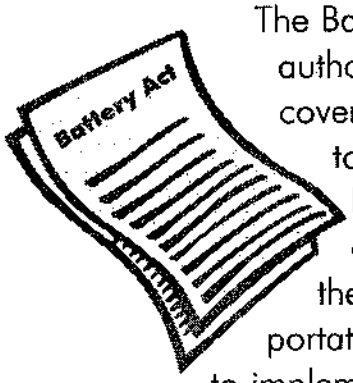
The requirements of Section 103 include:

- Regulated batteries must bear the 3 chasing arrows or a comparable recycling symbol.
- Nickel-cadmium batteries must be labeled "nickel-cadmium" or "Ni-Cd," with the phrase "BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY."

- Regulated lead-acid batteries must be labeled "Pb" or with the words "LEAD," "RETURN," and "RECYCLE" and, if the regulated batteries are sealed, the phrase "BATTERY MUST BE RECYCLED."
- Rechargeable consumer products containing nonremovable Ni-Cd batteries must be labeled with the phrase "CONTAINS NICKEL-CADMIUM BATTERY. BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY."
- Rechargeable consumer products containing nonremovable regulated lead-acid batteries must be labeled with the phrase "CONTAINS SEALED LEAD BATTERY. BATTERY MUST BE RECYCLED."
- The required labeling also must be carried on the packaging of rechargeable consumer products containing regulated batteries that are not easily removable, and on the packaging of regulated batteries that are sold separately from such products, if the labeling on the product or battery is not visible through the packaging.
- Battery and product manufacturers may use a different label if it conveys the same information as described above or it conforms with a recognized international standard that is consistent with the intent of the Battery Act. The manufacturers, however, must apply for EPA certification. (Until May 13, 1998, no certification is needed if the label is in "substantial compliance" with Section 103.)
- No municipality, state, or federal agency may enforce any easy removability or labeling requirement for a rechargeable battery or product that is not identical to that described in Section 103 of the Battery Act.
- Rechargeable consumer product manufacturers may petition EPA for an exemption from the easy removability requirement by showing that a product with easily removable batteries and with equivalent performance could not be made without posing a threat to human health, safety, or the environment, or without violating other public or private standards.

Section 104: Battery Waste Management and the Universal Waste Rule

The other major provision of Title I involves the federal Universal Waste Rule. To prevent states from having different regulations for managing batteries covered by the Battery Act, the Act made the Universal Waste Rule for covered batteries effective in all 50 states since May 13, 1996. This provides national uniformity in the collection, storage, and transportation of used Ni-Cd and certain other rechargeable batteries and certain mercury-containing batteries. (For a list of batteries covered by Section 104 of the Act, see EPA's codification rule, expected to be promulgated in late 1997.)



The Battery Act also preempts state legislative and regulatory authority for the collection, storage, and transportation of covered batteries. Normally, under RCRA, states can choose to be more stringent than the federal government. The Battery Act, however, does not give states the option of establishing more stringent regulations than specified in the Act, in regard to the collection, storage, and transportation of covered batteries. States may seek EPA approval to implement and enforce requirements identical to those found in Section 104(a) (i.e., the federal Universal Waste Rule).

Title II: Mercury Batteries

The purpose of Title II is to phase out the use of batteries that contain mercury. Title II specifically prohibits the sale of any alkaline-manganese (except for button cells containing up to 25mg mercury) and zinc-carbon batteries that contain mercury that was intentionally introduced (as distinguished from mercury that may be incidentally present in other materials used to produce these batteries). Also prohibited is the sale of button cell mercuric-oxide batteries. Other mercuric-oxide batteries are prohibited from being sold unless the manufacturer (1) identifies a collection site in the United States where mercuric-oxide batteries can be sent for recycling or proper disposal, (2) informs each of its purchasers of the collection site, and (3) provides each of its purchasers with a telephone number that the purchaser may call to get information about sending mercuric-oxide batteries for recycling or proper disposal. Finally, EPA may exempt from the Title II sales prohibitions a

new product or use for a Title II battery, if there exist reasonable safeguards against disposal of the battery in an incinerator, composting facility, or landfill (other than a facility regulated under the hazardous waste requirements of RCRA).

State Authority

As described under Section 7 of the Act, states can implement and enforce any requirement that is *identical* to (and hence not more or less stringent than) that in the Battery Act with respect to the labeling and easy removability of rechargeable batteries, and the collection, storage, and transportation of covered batteries. States can, however, adopt more stringent requirements for any *other* Battery Act provision, such as those in Title II. Finally, the Battery Act does not govern the recycling and disposal of covered batteries. States can, therefore, continue to adopt and enforce standards for the recycling and disposal of covered batteries that are more stringent than existing federal standards under RCRA.

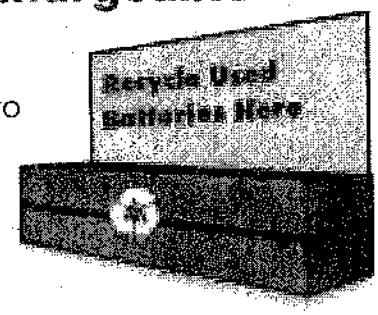
Enforcement

The enforcement provisions that are described in Section 5 of the Battery Act are fairly straightforward.

- EPA may require compliance and/or assess a civil penalty of up to $10,000 for each violation of the labeling, easy removability, and Title II requirements of the Act. Under an exemption to the Act's enforcement provisions, EPA cannot take enforcement action against retailers for selling a battery or product that does not meet the labeling or easy removability requirements of the Act. This may encourage retailers' voluntary participation in battery recycling by protecting retailers from prosecution for the sale of batteries that they purchase from a person, such as a manufacturer, who violates the Act. However, importers are not exempt from liability, and a retailer can be held liable by EPA if it has knowledge that the chemical contents of a battery are in violation of Title II of the Act.
- Violations of the requirements of Section 104 and the Universal Waste Rule are enforced separately by EPA under the Solid

Waste Disposal Act. These requirements involve the collection, storage, and transportation of used Ni-Cd and certain other rechargeable batteries and certain mercury-containing batteries. Violations of these requirements are subject to the stringent penalties and broad remedies available under RCRA.

Promotion of Recycling of Rechargeable Batteries



Public education and participation are keys to the success of any recycling program—and are particularly important with materials like batteries that have not been commonly recycled. A public education program can heighten awareness of the recycling program, involve more individuals and businesses, and increase the number of batteries collected. With this in mind, Section 4 of the Act requires EPA to consult with rechargeable battery manufacturers, rechargeable consumer product manufacturers, and retailers to establish a public education program on battery recycling and the proper handling and disposal of used Ni-Cd and certain SSLA batteries.

Public education and participation are keys to the success of any recycling program—and are particularly important with materials like batteries that have not been commonly recycled.

Why is Proper Disposal or Recycling Necessary for Ni-Cd and SSLA Batteries?

The toxic heavy metals, such as cadmium and lead, found in rechargeable Ni-Cd and SSLA batteries perform critical functions within the battery. Heavy metals are contained within the battery's casing and pose no real risks while the battery is in use. But they can be of concern when discarded with ordinary municipal solid waste, as most batteries are. Ni-Cd rechargeable batteries were estimated to represent approximately 75 percent of the cadmium found in municipal solid waste in 1995. EPA projected that lead-acid rechargeable batteries, of which SSLAs are a small percentage, would represent approximately 65 percent of the lead found in municipal solid waste in 1995.

At present, approximately 73 percent of municipal solid waste is either landfilled or incinerated. Neither of these methods is ideally suited for batteries that contain heavy metals. In landfills, especially those without liners and controls, heavy metals have the potential to leach slowly into soil, ground water, and surface water. When incinerated, metals such as cadmium and lead can concentrate in the ash produced by combustion and enter the atmosphere through incinerator smokestack emissions. When disposed of, the metals in the incinerator ash can leach into the environment. In the environment, certain types of heavy metals can also concentrate in the tissues of organisms and make their way up the food chain. Several metals, such as cadmium, are known carcinogens. The possible health effects associated with ingestion or inhalation of water, food, or air that has been contaminated with high levels of heavy metals range from headaches and abdominal discomfort to seizures, cancer, comas, and even death. The severity of the health effects are usually dependent on the total concentration of the metals to which one is exposed over time.

Recycling programs for Ni-Cd and SSLA rechargeable batteries can address the potential risks posed by landfilling or incinerating

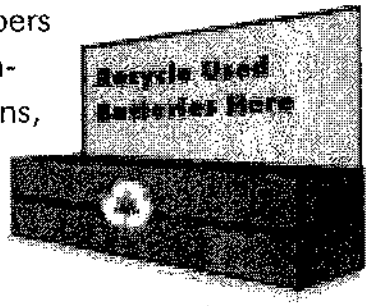
these batteries by diverting them from the waste stream. In the case of battery recycling, metals are recovered from the used batteries, and the remainder of the product is recycled or discarded.

How State and Local Governments Can Promote Ni-Cd and SSLA Battery Recycling

State and local governments play an important role in developing and implementing a successful battery recycling program. Public education efforts are essential to the success of a battery collection program. A public education program developed by a state or local government can heighten a community's awareness of the need to reduce heavy metals in the waste stream, involve more residents and businesses in battery collection, and increase the number of batteries collected. (See "Options" section for information on industry trade associations which have developed outreach materials that could be used by state and local governments.)

To implement an effective local education program, governments can:

- Identify the major users of Ni-Cd and SSLA batteries in their areas.
- Create an education committee to work with recycling staff or volunteers. Committee members can include state and local recycling coordinators, battery manufacturing industries, battery retailers, battery recycling associations, and the public. The committee can devise a comprehensive local education strategy and be responsible for educating other members of their respective interest groups. Some members, such as businesses and trade associations, can also contribute money or in-kind services and resources to defray the costs and increase the effectiveness of the program.



- Develop a plan to educate businesses and industries on the importance of recycling their Ni-Cd and SSLA batteries. One method that has been proven to facilitate information sharing is to create workshops of industry and government officials. During these workshops, governments can provide industry managers with information about state and local legislation, schedules for collecting the used batteries, and any incentives for participating in the recycling program, such as providing containers for collecting their used batteries.
- Work with retailers serving as collection points to develop and distribute educational materials. Materials can include posters, brochures, stickers, flyers, and newsletters. In addition, governments can send press releases promoting the program to local newspapers, radio, and cable television stations. A variety of other creative channels, including distributing flyers through community schools or utility bill inserts, can also help promote the program.

State and local governments can heighten a community's awareness of the need to reduce heavy metals in the waste stream, involve more residents and businesses in battery collection, and increase the number of batteries collected.

What Options Exist for Recycling Ni-Cd and SSLA Batteries?

One national Ni-Cd rechargeable battery recycling program and several successful state government and regional Ni-Cd rechargeable battery recycling programs are currently being implemented around the country. A program for the recycling of commercial SSLA rechargeable batteries is currently being established with the support of the Portable Rechargeable Battery Association (PRBA) and the Battery Council International (BCI).

What Role Do Retailers, Businesses, and Public Agencies Play?

By recycling rechargeable batteries in the products they use, businesses and public agencies can take advantage of a convenient way to help the environment. Retailers, businesses, and public agencies can institute "take-back" programs and contribute funds for public education and battery collection. (See "Options" section for information that industry trade associations provide to retailers, businesses, and public agencies.)

Retailers of Ni-Cd and SSLA batteries can work with state and local governments to collect used batteries. Retailers can display posters or signs informing the community of the need to recycle these batteries and of the names and addresses of battery collection sites. Retailers can also provide used-battery collection containers that will be sent to an appropriate storage or recycling facility.

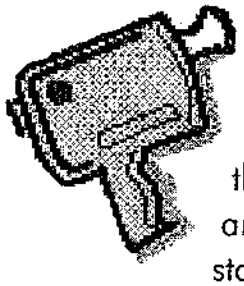
Businesses and public agencies, such as hospitals, computer companies, auto manufacturers, and police and fire departments, that use a large number of Ni-Cd or SSLA batteries can work on their own or with state and local governments to facilitate the collection of their used batteries. These businesses and agencies can develop their own collection programs by educating their employees about the importance of recycling these batteries and by providing containers or schedules for the collection of their used batteries. In addition, businesses and public agencies can fund or staff community collection programs and/or sponsor employee collection events that may last from one day to a week. All businesses that use cordless products—such as cellular phones, laptop computers, video recorders, and power tools—whether large Fortune 500 companies, small companies, or conditionally exempt small quantity generators, should be encouraged to participate in the collection and recycling of rechargeable batteries.

National Ni-Cd Rechargeable Battery Recycling Program

Charging Up to Recycle!

RBRC, a nonprofit organization representing many rechargeable battery manufacturers, developed the *Charge Up to Recycle!* program to help keep Ni-Cd batteries out of the solid waste stream and prevent toxins from ending up in landfills or municipal incinerators.

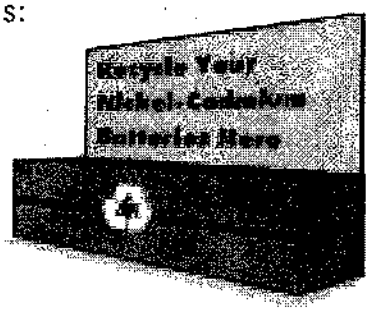
The *Charge Up to Recycle!* program offers various recycling plans for communities, retailers, businesses, and public agencies. For each group, RBRC pays or shares the cost of consolidating the batteries, shipping them to the processing facility, and recycling them. The program sends all Ni-Cd batteries to the International Metals Reclamation Company (INMETCO), a recently opened cadmium recovery facility in Ellwood City, Pennsylvania. At the facility, the nickel and iron are separated from the cadmium and shipped to specialty steel producers for use in stainless steel products. The recovered cadmium, at a 99.95 percent purity level, is used to produce new Ni-Cd rechargeable batteries.



For more information about the *Charge Up to Recycle!* program, or for the location of the collection site nearest you, visit the web site at *http://www.rbrc.com* or call RBRC's toll-free number at 1-800-8-BATTERY.

State Government and Regional Ni-Cd Rechargeable Battery Recycling Programs

Many state governments and regional organizations have established successful Ni-Cd rechargeable battery recycling programs. Here are descriptions of two such programs:



Massachusetts' Municipalities Recycle Used Ni-Cds

Almost one-third of municipalities in the state of Massachusetts currently collect used Ni-Cd batteries. Massachusetts worked with RBRC to establish collection points in more than 100 of the state's 351 municipalities. These municipal collection points complement retail collection locations in Massachusetts that were established under RBRC's national program.

Massachusetts' Department of Environmental Protection distributes 5-gallon plastic buckets to each of its four regional offices. These offices in turn make them available to municipal recycling coordinators who place them in centrally located, visible sites in the community. RBRC coordinates outreach efforts to residents to educate them that Ni-Cd batteries can be recycled and to inform them of where to take their batteries for recycling.

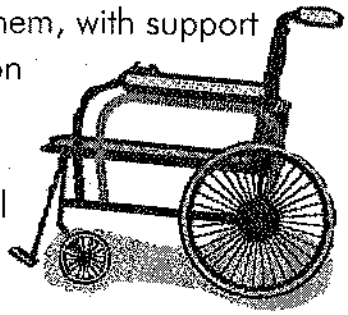
For more information about Massachusetts' battery recycling efforts, contact the Massachusetts Department of Environmental Protection Household Hazardous Waste Hot Line at 1-800-343-3420.

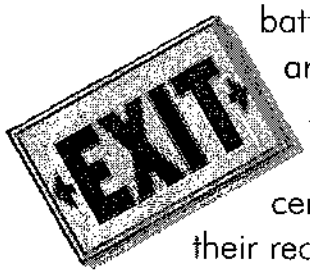
Battery Drop Stop Program

Battery recycling may be just a phone call away! In January 1997, EPA Region 5 and Ameritech, a major manufacturer of cellular phones and pagers, teamed up to launch "Battery Drop Stop," a cellular battery recycling program intended to keep Ni-Cd batteries out of our nation's landfills. Under this program, consumers can drop off their Ni-Cd cellular batteries at any of Ameritech's more than 1,000 retail associates and authorized dealers across the Midwest for recycling. Ameritech will accept any kind of Ni-Cd cellular batteries, regardless of brand or service provider, for recycling. The Rechargeable Battery Recycling Corporation plays an active role in the program, providing special battery collection boxes and coordinating the recycling at its facility in Pennsylvania. Interested consumers can obtain a copy of their free brochure with more details on the battery recycling program and/or find the location of the nearest Ameritech "Battery Drop Stop" by calling 1-800-MOBILE (1-800-662-4531).

Commercial SSLA Recycling

To encourage the recycling of commercial SSLA batteries, the manufacturers of SSLAs and products that contain them, with support from PRBA and BCI, are establishing a collection program. Commercial SSLA batteries have four primary end uses: uninterrupted power sources, emergency lighting, alarm systems, and hospital equipment. Manufacturers are working to establish collection points for commercial SSLA batteries in five states by the end of 1997. These states are Florida, Iowa, Maryland, Minnesota, and New Jersey. Users of products that contain the batteries are responsible for transporting them to collection centers, while manufacturers of the batteries facilitate their recycling. Commercial SSLAs are recycled with other lead-acid batteries at secondary smelters.





For more information about the commercial SSLA battery recycling program, contact PRBA at 770-612-8826.

Almost one-third of municipalities in the state of Massachusetts currently collect used Ni-Cd batteries.

For More Information

- A copy of the Mercury-Containing and Rechargeable Battery Management Act (P.L. 104-142) can be downloaded from EPA's web site at *http://www.epa.gov/epaoswer/hazwaste/state/policy/pl104.txt*.
- For general questions about battery recycling, contact the RCRA Hotline at 800-424-9346 or TDD 800-553-7672. In Washington, DC, the number is 703-412-9810 or TDD 703-412-3323. The RCRA Hotline is open from Monday through Friday, 9 a.m. to 6 p.m. Eastern Time.
- A handbook entitled *Used Dry Cell Batteries: Is a Collection Program Right for Your Community?* is designed for local communities interested in establishing a program to collect used dry cell batteries (i.e., both single-use and rechargeable). The document contains program cost information, public education strategies, management options, and examples of community programs around the country. To request a copy, call the RCRA Hotline and reference document number EPA530-K-92-006.
- More information on EPA's Universal Waste Rule can be found on EPA's website at *http://www.epa.gov/epaoswer/hazwaste/id/univwast.htm*. The rule was published in the May 11, 1995 *Federal Register* and is found in the Code of Federal Regulations at 40 CFR Part 273, as well as at *http://www.epa.gov/docs/fedrgstr/EPA-WASTE/1995/May/Day-11/pr-223.html*.