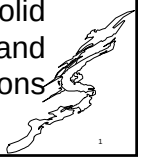
Recycling Regulations & All That

The dreaded definition of solid waste table (40 CFR 261.2) and other equally confusing regulations



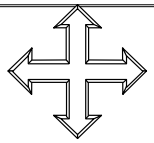
Definition of Solid Waste and Recycling

- Special thanks to :
  - EPA/OSW
  - Matt Hale
  - Jim O'Leary
  - Amy Lile
  - Teena Wooten

Outline of Presentation

- Part 1: Overview of Current Definition of Solid Waste (DSW) Regulatory Framework
- Part 2: DSW Determinations - Examples & Case Study
- Part 3: Overview of New DSW Website/DSW Tool Kit
- Part 4: Overview of Proposed DSW Regulatory Framework

Why is hazardous waste recycling regulation so complicated?



Must look in many places
- Multiple Regulations
- FR Notices
- Interpretive Memoranda

Long history

Must determine if material is a solid waste first. To do this must know BOTH what waste is AND how it will be recycled

RCRA Statute not explicit on extent of Agency's authority

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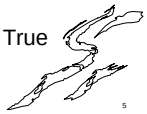
Where to look

Regulations
- 40 CFR 261
- 40 CFR 266
- 40 CFR 273
- 40 CFR 279

FR Notices
- January 4, 1985 Definition of Solid Waste

Interpretive Memoranda
- Sylvia Lawrence Memo on Sham vs. True Recycling (April 26, 1989)



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What are the regulated community's most common questions?

If I recycle, can I get out of all regulation?

How can I recycle (insert any waste here) and not have to manage it as hazardous waste?

Do I count recycled waste in my monthly generator totals?

Why can't I make fence posts out of my hazardous waste?

How can I recycle listed hazardous wastes (such as F006)?

What is an unlisted off-specification product?

What's the difference between recycling and an exclusion?

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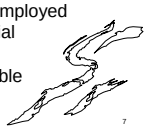
First things first-Definitions (40 CFR 261)

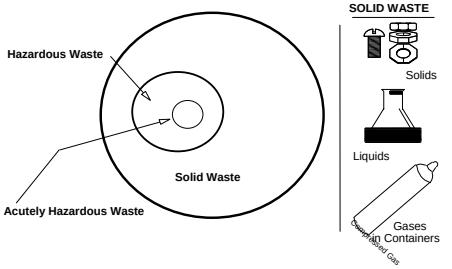
Solid Waste - any *discarded* material that is not excluded
- Discarded Material - any material which is *abandoned*, *recycled*, considered inherently waste-like, a military munition
  - Abandoned - disposed, burned or incinerated, accumulated speculatively
  - Recycled - *used, reused, or reclaimed*
    - Used or Reused - employed as an ingredient in an industrial process to make a product (no separate recoverable end products) or employed as an effective substitute for a commercial product
    - Reclaimed - processed to recover a usable product or regenerated



First things first-Definitions (statutory)

Solid Waste -*any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include……*

The Universe of Solid Waste



First things first (continued)

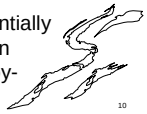
Recycled materials are solid wastes! (Some anyway).

Spent Material - any material that has been used and as a result of contamination can no longer serve the purpose ***for which it was produced*** without processing

Recyclable Material - hazardous waste that is recycled

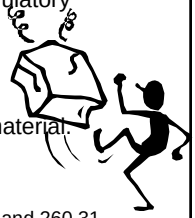
Definition found in 1/4/85 Federal Register:

- Secondary Material - a material that potentially can be a solid and hazardous waste when recycled (e.g. spent materials, sludges, by-products, scrap metal, CCPs)



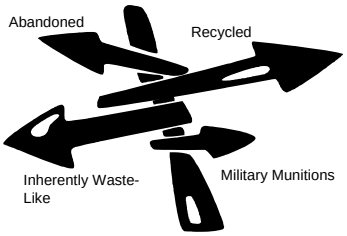
Part 1

Overview of Current DSW Regulatory Framework



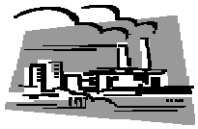
- A **solid waste** is any discarded material.
- Does not include material that is:
  - Excluded under §261.4(a).
  - Granted a variance under §§260.30 and 260.31.

There are 4 categories of discarded materials.



Abandoned

- Disposed of.
- Burned or Incinerated.
- Accumulated, Stored, Treated.



Inherently Waste-Like

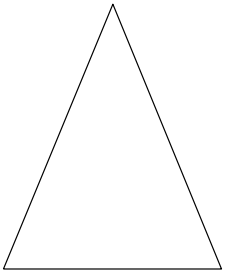
- Dioxin-containing listed wastes F020, F022, F023, F026, and F028.
- Secondary materials that are characteristic or listed hazardous waste and fed to a halogen acid furnace.
- Disposed of, burned or incinerated.
- Contains hazardous constituents (App.VIII) not normally found in the raw material and not used/reused during recycling.
- May pose a substantial hazard to human health and the environment when recycled.

Military Munitions

- Military munitions are not solid wastes when:
  - Used for their intended purpose (shot/dropped).
  - Recycled (e.g., reused, repaired).
  - Not left on the ramp.
- Military munitions are solid wastes when:
  - Unused munitions
    - Disposed of, removed from storage, deteriorated, declared a solid waste.
  - Used munitions
    - Retrieved & disposed of on-site or sent off-site for treatment or disposal.

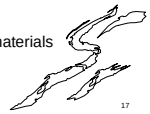
A material is recycled if it is used, reused or reclaimed!

Hierarchy of Recycling



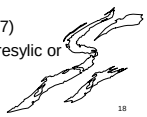
Not a solid waste by Use/Reuse Exclusion and Table 1 of 40 CFR 261.2
Specifically Excluded from definition of solid waste 261.4(a)
Excluded from definition of hazardous waste 261.4(b)
Recyclable Materials (hazardous waste) 261.6
- Part 266
- Specific Exclusions
- Used Oil Part 279
- All other recyclable materials

Universal Waste 261.9
- Part 273



Excluded from definition of solid waste 261.4(a) (No regulation)

Pulping liquors reclaimed and returned to process (6)
Spent sulfuric acid used to produce virgin sulfuric acid (7)
Materials reclaimed and returned (closed-loop recycling) (8)
Wood preserving solutions reclaimed and reused (9)
Coke by-products (K-wastes) recycled to coke ovens (10)
Recovered oil from organic chemical manufacturing & petroleum industry returned to refining process (12, 18)
Recycled excluded scrap metal (13)
Recycled shredded circuit boards (14)
Recycled materials from mineral processing industry (17)
Spent caustics from petroleum refining used to make cresylic or naphthenic acid (19)
Waste derived Zinc microfertilizers (20, 21)



Excluded from definition of solid waste (Conditional)

- Comparable/Syngas Fuel
  - 261.38
- CRTs
  - 261.39

Excluded from definition of hazardous waste 261.4(b) (Minimal regulation)

Used chlorofluorocarbon refrigerants reclaimed for further use (12)

Used oil distillation bottoms used as feedstock to manufacture asphalt (14)

Recyclable Materials (hazardous waste) 261.6

None to full regulation
- reclaimed industrial ethyl alcohol
- precious metals (Part 266, subpart
- spent lead-acid batteries
  -- (Part 266, subpart G)
- UCD (Part 266, subpart C)
- BFER Part 266, subpart H)
- Used Oil (Part 279 - Moderate regulation

Materials not otherwise identified - Full regulation

Recyclable Materials - Part 266

Recyclable Materials Used in a Manner Constituting Disposal - Moderate to Full Regulation

- Product must meet LDR to be exempt from regulation
- Generator (must count), Transporter, and Storer regulations apply
- Use of waste or used oil contaminated with dioxin prohibited

Recyclable Materials - Part 266

Spent Lead-Acid Batteries being Reclaimed - No regulation

- No regulation of generators (do not count), transporters, collectors, regenerators, or storers as long as batteries are reclaimed or regenerated
- If not reclaimed or regenerated then storers must meet interim status or permitted storage requirements.

Recyclable Materials - Part 266

Hazardous Waste Burned in Boiler and Industrial Furnaces - Fully Regulated

More "disposal-like" than "recycling"

- Generators subject to 262 (must count)
- Transporters are subject to 263
- Storage facilities subject to full TSD regulation
- Burners subject to full Part 266 permit requirements

Universal Waste - Part 261.9

The following are “universal wastes” and are exempt from parts 262 through part 270 and subject *only* to part 273:

- batteries
- pesticides
- Mercury-containing equipment
- lamps

Recyclable Materials - Used Oil Part 279 - Moderate regulation

Used oil that is recycled by being: reused, re-refined, reclaimed, burned for energy recovery, or reprocessed

Used oil only; does not include mixtures of used oil and characteristic or listed hazardous waste

Materials derived from used oil that are disposed of or used in a manner constituting disposal are not used oil, are solid wastes, and subject to full regulation if hazardous

Recyclable Materials - All other materials (Fully regulated)

Generators – must manage as hazardous waste

Transporters – must manage as hazardous waste

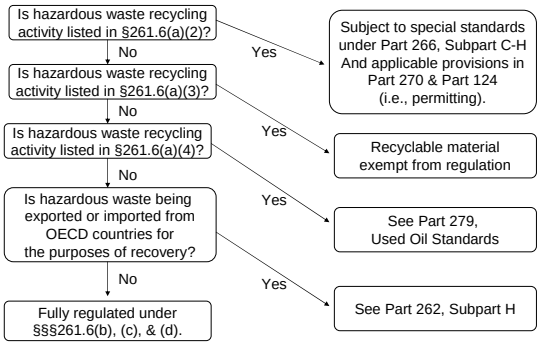
Recyclers –

- That store* prior to recycling need a permit!
- That don’t store* prior to recycling don’t need a permit

“Storage” is not defined, but generally includes anything that is NOT conveyance (typically 24 hours*).

*Not defined by regulation

Analysis of Hazardous Waste Recycling Requirements



Use/Reuse Exclusions at 40 CFR 261.2(e)

- Directly using or reusing a material
  - As an ingredient in an industrial process
  - As an effective substitute for a commercial chemical product.
  - Materials must be used, reused, or returned to original process directly without first being reclaimed.
- These exclusions do not apply to materials used in a manner constituting disposal, burned for energy recovery, speculatively accumulated or inherently waste-like.

Table 1 of 40 CFR 261.2 (c)

	Use Constituting Disposal 261.2(c)(1)	Energy Recovery/ Fuel 261.2(c)(2)	Reclamation 261.2(c)(3) except for mineral processing	Speculative Accumulation 261.2(c)(4)
Spent Materials	*	*	*	*
Sludges F and K Lists	*	*	*	*
Sludges Characteristic	*	*	----	*
By-Products F and K Lists	*	*	*	*
By-Products Characteristic	*	*	----	*
Commercial Chemical Products P and U listed Wastes	*	*	----	----
Scrap Metal	*	*	*	*

Materials with a * ARE solid wastes.
Materials with a ---- are NOT solid wastes.

DSW Determination Involves Examining Two Components:

- Type of Recycling Process
  - Use constituting disposal
  - Burning for energy recovery
  - Reclamation
  - Use/Reuse
- Type of Secondary Material
  - Spent materials
  - Listed sludges and by-products
  - Characteristic sludges and by-products
  - Commercial chemical products (CCPs)
  - Scrap metal

Use Constituting Disposal (UCD)

- Applying a material directly to the land.
- Using a material as an ingredient in a product that will be applied to the land.
- All materials that are UCD are solid wastes, except commercial chemical products that are ordinarily applied to the land.

Burning For Energy Recovery

- Burning a material directly as a fuel.
- Using a material as an ingredient in producing a fuel.
- The material is contained in a fuel.
- All materials burned for energy recovery are solid wastes, except commercial chemical products that are ordinarily fuels.

Reclamation

- Processing to recover a usable product.
  - Wastes are processed to recover usable products when distinct components of the material that are of value are recovered.
- Regeneration
  - Wastes are regenerated when they are processed to remove contaminants in a way that restores them to their usable original condition.

Classes of Secondary Materials

- Spent Materials.
- Sludges.
- By-products.
- Commercial Chemical Products.
- Scrap Metal.

Spent Material

- Any material that has been used and, as a result of contamination (e.g., any impurity, factor or circumstance which causes the material to be taken out of service for reprocessing), can no longer serve the *original* purpose for which it was produced without undergoing regeneration, reclamation or reprocessing.
  - Spent solvents
  - Spent catalysts
  - Spent pickle liquor
  - Spent plating bath solutions.

Sludge

- "any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant"
  - Wastewater treatment plant sludges.
  - Electric arc furnace dust (K061).
  - Baghouse dusts.

By-Products

- "a material that is not one of the primary products of a production process and is not solely or separately produced by the production process."
  - Distillation column bottoms.
  - Heavy ends.
  - Slag.
  - Ignitable Glycerin from biodiesel production

Co-Product

- A material intentionally produced by the manufacturing process and ordinarily used in its existing state as a commodity in trade by the general public.
- Co-products must have a recognized use, and must be usable without reprocessing.

Commercial Chemical Product

- Unused off specification product.
- Listed in §261.33 (P and U wastes).
- Characteristic.

Scrap Metal

- "bits and pieces of metal parts …or metal pieces that may be combined together with bolts or soldering … which when worn or superfluous can be recycled."
  - Sheet metal
  - Wire
  - Metal tanks and containers
  - Scrap automobiles
  - Machine shop turnings

Mechanisms to Ensure Proper Recycling

- Documentation of claims (§261.2(f)).
  - Demonstrate the presence of a known market.
  - Demonstrate the material is not a waste or is exempt from regulation.

Mechanisms to Ensure Proper Recycling

- Speculative accumulation (§261.1(c)(8)).
  - Prohibited for materials that are not solid waste.
  - Recycling must be possible.
  - 75% of material stored at the beginning of the year must actually be recycled or sent for recycling by the end of the year.

Mechanisms to Ensure Proper Recycling

- Criteria for Legitimate Recycling vs. Sham Recycling.
  - Is the secondary material similar to an analogous raw material or product?
  - Is the secondary material handled in a manner consistent with the raw material/product it replaces?
  - What degree of processing is required to produce a finished product?
  - Is there a market for the end product?
  - Are there toxics-along-for-the-ride (TARS)?
  - Material value?

Part 2

DSW Determinations -
Examples and Case Study

Definition of Solid Waste and Recycling
Part 2: Examples of Regulatory Determinations and Case Study

Presentation at 2008 Hazardous Waste Managers Conference
August 2008

Part 2: Examples

- Spent materials
  - Continued use
  - Scope of spent materials
- Use/reuse vs. reclamation
  - Incidental processing

Examples for Discussion

- **A solvent used for degreasing/cleaning operations outlives its usefulness**.

  - What is the regulatory status of this solvent if it is reclaimed to produce virgin solvent?

  - What is the regulatory status of this solvent if it **used as an ingredient** to make fertilizer?

  - What is the regulatory status of this solvent if it is subsequently used to **clean drums?**

  - What is the regulatory status of this solvent if, after used to clean drums, the drums are subsequently cleaned with virgin solvent?

- **An ultra-pure concentrated sulfuric acid is used in the semi-conductor industry to clean silicon wafers before being etched. Over time this acid picks up small particles of ash and photo-resist such that it can no longer be used. However, the acid concentration is still purer than commercially available sulfuric acid used as a raw material in other industrial processes.**

  - What is the regulatory status of this sulfuric acid if, prior to being used to make a reagent-grade sulfuric acid, the material goes through a **filtration step** to remove small particles accumulated in the acid to protect the mechanical integrity of the product handling equipment?

    - Reclaimed material subject to RCRA jurisdiction?
    - Excluded material under 40 CFR 261.2 (e)(1)(i) -used as an ingredient in an industrial process.

Continued Use

"The Agency has previously stated that when a used solvent is employed for another solvent use, this continued use indicates the solvent remains a product. The used solvent in this case is a material continuing to be used as a solvent, the purpose for which it is intended, rather than a spent material being reused. Consequently, the used solvent to be employed for drum washing would not be considered a solid waste and would not be subject to Resource Conservation and Recovery ACT ("RCRA") Subtitle C hazardous waste regulations when generated, transported, or used. 50 Fed. Reg. 614, 624 (1985)"

See also RCRA Online 14281 (August 21, 1998).

Incidental Processing Policy Guidance

Incidental processing includes only those processing steps that are not necessary to material recovery, and which do not themselves regenerate the material or recover material values.

- Examples include: wetting of dry wastes to avoid wind dispersal; briquetting of dry wastes to facilitate re-smelting; sintering or thermally agglomerating iron-bearing materials before charging them to a blast furnace. (See 50 FR 639.)

- Examples discussed in the 1985 preamble are activities that: **(1) change a material's physical form without changing the mass of the material or its chemical composition, or (2) make only a minor change to the mass of the material, which also may make a minor change to the chemical composition of the material.**

- Additional examples include:
  - Shredding and grinding leather trimmings to attain required particle size
  - Triple distillation of 99% pure mercury to a higher specification
  - Filtration to protect the mechanical integrity of product handling equipment, such as pumps
  - Final filtration to remove minute quantities of particulate matter to guarantee the physical quality of the product.

See Memorandum to the Regions from Director, OSW, October 4, 2005.

Examples for Discussion (Continued)

- What is the regulatory status of copper-containing flue dust (characteristically hazardous for toxicity) generated from a copper smelting operation's air pollution control system that is reclaimed for its copper content?
- What is the regulatory status of flue dust (K061) from a steel manufacturing process that is reclaimed for its nickel content?
- What is the regulatory status of the K061 if it contained a concentration of .5% nickel, and the slag generated from the nickel reclamation process was .7%?

Case Study:
Safe Delivery System (SDS)
Cylinders

DSW Determinations – What you see isn't what you always see!

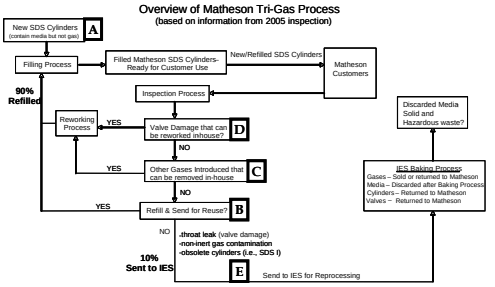
Background

- For several years, un-refillable safe delivery system (SDS) cylinders were stored, unregulated, at Matheson Tri-Gas without a means of extracting the remaining gases.
  - Unlike traditional or compressed gas cylinders, SDS cylinders contain a micro-porous medium that sorbs high purity gases during filling (the gas molecules sorb both onto the surface of the medium and into the pore space of the medium).
  - Upon continued use, the differential pressure decreases to the point where the customer can no longer remove additional gas from the cylinder.
- In 2003, Commonwealth of Massachusetts requested Region 1 to inspect Matheson. Region 1 determined cylinders to be spent materials.
- In 2006, **Matheson appealed Region 1's decision to EPA Headquarters.**
- In 2006, Matheson also began sending un-refillable cylinders to Integrated Environmental Services (IES) in Atlanta, Georgia to extract the remaining gases.
- **Issue: Should RCRA regulation apply to SDS cylinders?**

Figure 1

Overview of Matheson Tri-Gas Process

(based on information from 2005 inspection)



Cylinder A – Cylinder containing new media that has not been filled
Cylinder B – Cylinder containing used media that is ready for refill
Cylinder C – Cylinder containing used media that has inert gases in headspace
Cylinder D – Damaged Cylinder containing used media that can be repaired by Matheson
Cylinder E – Damaged/Contaminated Cylinder containing used media that cannot be repaired/purified by Matheson

Two Paradigms in Making Regulatory Determination

- **Paradigm 1: Gases are Commercial Chemical Products (CCPs)**

- The gas is a commodity that customers want, and cylinders, media, etc., are for storage.

- Regulatory status of cylinders when:

-- Customer sends cylinder to Matheson: No regulation because gas a CCP.

-- Inspected by Matheson and Returned to Customer: No regulation because gas is a CCP

-- Sent by Matheson to IES: No regulation because gas a CCP.

Two Paradigms to Making Determination (Continued)

- **Paradigm 2: SDS cylinders are spent materials.**

- Cylinders are complex, engineered units that either outlive their usefulness (insufficient gas remains) or possibly fail during usage. Gas is one component of this unit.

- SDS cylinders would be considered spent materials when they have been used by customers, if:

- Leaking valves (throat leakers)

- Contaminated media (either when gas recovered or not recovered)

- Obsolete cylinders

Option A: Remaining Gas is an unused CCP

Why should the gas be considered an unused CCP?

- The only material of concern is the gas.
- The gas is a product purchased by Matheson's customers, and used after it is discharged from the cylinder.
- The remaining gas in the cylinder is an unused product inside a container.
- The SDS cylinders and media are a storage container holding the gas.

Past Interpretations Potentially Supporting CCP Paradigm

- **Recycling torpedo fuel contaminated with salt water.**
  - Any propulsion fuel that remains in a torpedo (after it has been fired) that is retrieved from the ocean can be recovered.
- **Refilling bubbler canisters containing phosphorous oxychloride chemical may be reclaimed.**
  - The data from company that manufactures new bubblers and receives returned bubblers indicate phosphorous oxychloride remaining in the returned canister is almost as pure as it was when inserted into the canister.
- **Refilling compressed gas cylinders containing gaseous residues.**
  - Residues may be reclaimed. Returned cylinders are "topped off" without discard of the residues, and with reclamation of the residues by the gas supplier. In these cases, residues are not solid wastes.

What are policy implications if we adopt this paradigm?

- SDS gases are not subject to RCRA jurisdiction so long as Matheson and IES recycle and recover gases. No RCRA oversight of Matheson and similar operations.
- Potential inconsistency in both past and future interpretations between CCPs and spent materials.
- Pushes the decision line between CCPs and spent materials along the spectrum towards CCPs.
- CCP paradigm **may** be hard to oversee in preventing sham operations because it is often difficult to prove abandonment.

Option B: SDS Cylinders are spent materials

Why should SDS cylinders be considered spent materials?

- When Matheson markets its product, it is not just marketing the gas, but the entire unit.

- The complexity of the processes required to remove the gas from the cylinders is what separates this paradigm from other "containers holding CCP" and makes the cylinder more like other engineered units considered spent materials (e.g., ignitron tubes, mercury switches).

- SDS cylinders being sent to IES may also include throat leakers, which counsels in favor of regulating them as spent materials because the unit has lost its integrity and can no longer be reused.

- SDS cylinders being sent to IES may include cylinders with contamination in the medium by other gases, which counsels in favor of regulating at least those contaminated cylinders as spent materials.

Past Interpretations Potentially Supporting Spent Material Paradigm

- **Ignitron tubes containing mercury.**

  -Ignitron tubes (e.g., electron tubes that convert alternating current (AC) to direct current (DC)) sent off site for mercury reclamation are classified as spent material and therefore meet the definition of solid waste.

- **The recycling of mercury switches.**

  - When are used mercury relay switches spent? If mercury switch is sent for further use as a relay or switch, it never becomes a solid waste. If the switch is taken out of service and shipped for reclamation, it is considered a spent material.

What are policy implications if we adopt this paradigm?

- SDS cylinders sent to IES subject to RCRA jurisdiction. Matheson and IES must comply with all applicable regulations.
- Potential inconsistency in both past and future interpretations between CCPs and spent materials.
- Classification of the gas/cylinder/media as a unit instead of a material inside a container would push the line of demarcation closer to the engineered-unit/spent material end of the continuum.
- Spent material paradigm allows oversight by EPA and states.

Office Director Decision

- There is a need for EPA to clarify when an engineered unit should be classified as a container holding an unused CCP or spent material.
- There is an important distinction between these two situations.
  - With respect to ignitron tubes and mercury switches, the chemical of concern (e.g., mercury) plays an integral role in the functioning of the unit, while the chemical is inside of the unit.
  - The mercury has no function outside of these units.
  - Conversely, with the SDS cylinders and pressurized gas canisters, the principal purpose of the unit is to store and dispense the chemical.
  - The principal purpose for which the chemical (e.g., phosphine or arsine) is used occurs outside of the unit.

  Therefore, SDS canisters are storage and delivery units holding a CCP.

Office Director Decision (Continued)

- Two further points are worth noting.
- First, containers holding unused CCPs and any residues generated from CCP recovery must undergo a new hazardous waste determination after the cylinders are emptied**.**
- Second, those managing unused CCPs that require reclamation should be aware of the potential for these types of materials to be abandoned.

  - For example, if unused CCPs were being stored for a long period of time without any foreseeable means of recovering the product, or if no foreseeable market existed for the recovered product, an overseeing regulatory agency might well conclude that they were abandoned, and thus subject to Subtitle C hazardous waste regulations.

Closing comments: Making Sense of DSW

- Steps in conducting a DSW Regulatory Determination

  -- Know and understand the facts of the situation (process flows, products and secondary materials, disposition, etc.)
  -- What have we said in the past? (FR Notices, RCRA Online)
  -- Stay abreast of any recent changes to policy or adjudication
  -- Talk to your colleagues. “Do you see what I see?”
  -- Don’t assume anything!
  -- Don’t die on your sword!

Searching RCRA Online Using Google

- Enter the word “site” followed immediately by the name of the server

  - For RCRA Online: site:http://yosemite.epa.gov

  - Then enter a space followed by your search terms.

  Example: If you want to search for “copper slag”, enter;
  site:http://yosemite.epa.gov copper slag

EPA's Definition of Solid Waste Network

- Join the fun!
- Get the latest and greatest from OSW on DSW issues and activities
- Interact with your peers
- Discuss issues and topics of concern
- Obtain guidance and ideas from your peers

- Contact Teena Wooten at wooten.teena@epa.gov

Part 3

Definition of Solid Waste Website and Tool Kit

Purpose

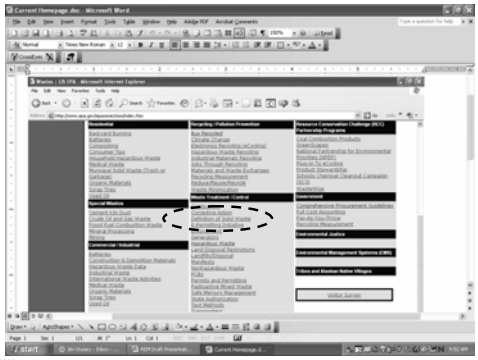
Share with ASTSWMO efforts underway in EPA's Office of Solid Waste (OSW) regarding website development activities.

Particular emphasis on:

- Definition of Solid Waste (DSW) Website
- DSW Tool Kit

Definition of Solid Waste (DSW) Website Draft

Current Wastes Homepage



Proposed Wastes Homepage

Proposed Hazardous Wastes Website

Proposed Hazardous Wastes Website (*cont.)*

- Will include information on:
  - Definition of Solid Waste (DSW)
  - Types of Hazardous Waste
  - Generation
  - Transportation
  - Treatment, Storage, and Disposal (TSD)
  - Waste Minimization
  - Hazardous Waste Recycling
  - Corrective Action
  - Test Methods

Proposed Hazardous Wastes Website (*cont.*)

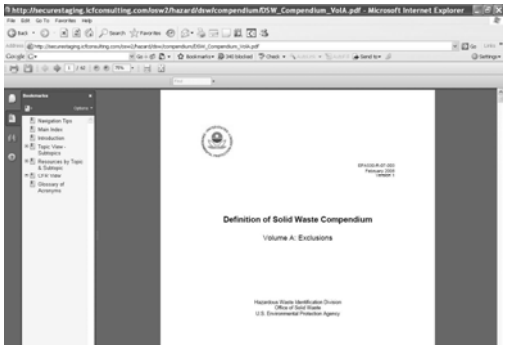
- New website is designed to:
  - Be more user friendly
  - Comprehensive
  - Up-to-date

Proposed DSW Website

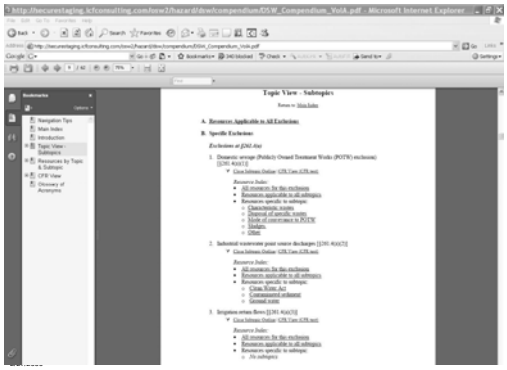
Proposed DSW Website (*cont.)*

- Will include information on DSW:
  - Compendium
  - Rulemakings
  - Resources
  - DSW Tool Kit

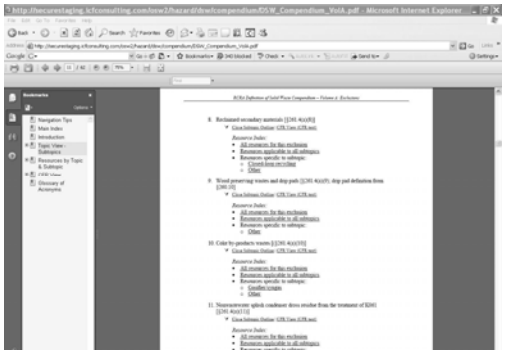
Proposed DSW Website – Compendium (*cont.*)



Proposed DSW Website – Compendium (*cont.*)



Proposed DSW Website – Compendium (*cont.*)



Proposed DSW Website – DSW Rulemakings History

Proposed DSW Website – DSW Resources

DSW Tool Kit Draft

Instructions

- To review the DSW Tool, please use View > Slide Show.
- Many external links (e.g., to the CFR) are not operational. However, the decision links ("Yes" and "No") are operational. So, you can step through the Tool acting as a potential user.
- The slides do not include a "back" button. The approach for the actual tool to have users use their browser's back button to return to a slide. If desired, a back button can be added to the tool.

  To return to the previously viewed slide, right-click, and on the shortcut menu, click **Last Viewed.**
- The slides have a placeholder for a flowchart graphic. The flowchart graphic will be added after the order of the steps is finalized.
- Please note that the slide titles are not considered part of the Tool.

GENERAL DISCLAIMER

This DSW Tool Kit is provided by EPA for the convenience of the regulated community. It is not a regulation, nor can it be considered a substitute for the actual regulations, themselves, or for related laws and applicable court decisions. If a person uses this website to make decisions regarding whether his material is a solid waste, he makes that decision at the risk of having incorrectly interpreted applicable laws, regulations and/or legal decisions. EPA does not intend this website to be cited as precedent before a court or before EPA to support a person's decision whether to treat his material as a solid waste. EPA recommends you contact your authorized state agency or EPA regional office should you have any concerns or doubts about whether your material is subject to RCRA jurisdiction.

Instructions

Ingredients/Substitutes	Excluded Materials	Discarded Materials

About the Tool

The Definition of Solid Waste Tool is an interactive guide to help users determine if a material meets the Definition of Solid Waste. This tool is designed to follow a series of decisions that a typical user might make when determining whether a material meets the Definition of Solid Waste. The decisions in the tool are organized to simplify this decision process and to allow the largest number of users to reach a conclusion as quickly as possible. This tool does not follow the outline of the Definition of Solid Waste regulations in the same order that appears in those regulations (see 40 CFR 261.2).

This web site describes Federal regulations for hazardous wastes. You may be subject to more stringent regulations established by your State. Please contact your appropriate State environmental authority for official guidance.

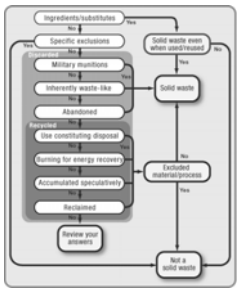
Instructions for using the tool:

1. Read the description for each step. If more information is needed to answer the question, use the resources listed (they will open in a new window) under the description to access EPA training modules or review EPA interpretations and decisions on the topic in the Definition of Solid Waste Compendium.

2 Click on the appropriate link to move to the next step or see whether your waste meets the Definition of Solid Waste.

BEGIN

Definition of Solid Waste Decision Flowchart



Materials that are not solid wastes when recycled

Ingredients/Substitutes	Excluded Materials	Discarded Materials

Step 1 of 9

Are you performing any of these activities under 40 CFR 261.2(e)(1)?

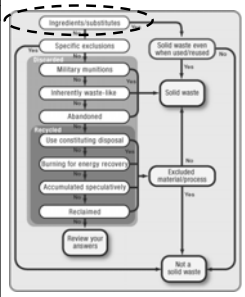
- Used or reused as an ingredient;
- Used or reused as an effective substitute; or,
- Returned to the original process without first being reclaimed.

→ YES
→ NO

Not sure what this question is asking? Please see:

- DSW Compendium, Volume M: Use/Reuse – Lists resources specific to this topic area.
- RCRA Orientation Manual: Hazardous Waste Identification (PDF) (26 pp, 400K) – This chapter provides an overview of solid and hazardous waste identification. To access other Orientation Manual chapters, click here.

Definition of Solid Waste Decision Flowchart



Materials that may be solid wastes when recycled (*cont.)*

Ingredients/Substitutes	Excluded Materials	**Discarded Materials**

Step 1 (cont.) of 9

Based on your answer, this material generally is not a solid waste.

However, the following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process if:

- The materials are **inherently waste-like**;
- The materials are **used in a manner constituting disposal**;
- The materials are **burned for energy recovery, used to produce a fuel, or contained in fuels; or,**
- The materials are **accumulated speculatively**.

Do any of the above apply to you?

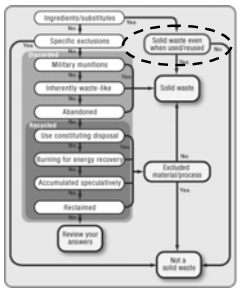
→YES
→NO

Not sure what this question is asking?

→ Continue

- DSW Compendium, Volume A: Exclusions – Lists resources specific to this topic area.
- RCRA Orientation Manual: Hazardous Waste Identification (PDF) (26 pp, 400K) – This chapter provides an overview of solid and hazardous waste identification. To access other Orientation Manual chapters, click here.

Definition of Solid Waste Decision Flowchart



Specific Exclusions

Ingredients/Substitutes	**Excluded Materials**	Discarded Materials

Step 2 of 9

Is the material specifically excluded under 40 CFR 261.4(a)?

Certain materials listed under 40 CFR 261.4(a) are excluded from the definition of solid waste for a variety of reasons, including public policy, economic impacts, regulation by other laws, lack of data, or impracticability of regulating the waste. Many of these exclusions are based upon the condition that the material is recycled.

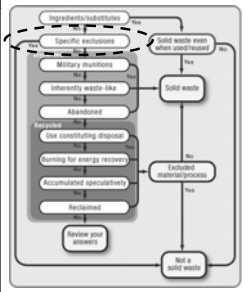
Is the material listed under 40 CFR 261.4(a)?

→ YES
→ NO

Not sure what this question is asking? Please see:

- DSW Compendium, Volume A: Exclusions – Lists resources specific to this topic area.
- RCRA Orientation Manual: Hazardous Waste Identification (PDF) (26 pp, 400K) – This chapter provides an overview of solid and hazardous waste identification. To access other Orientation Manual chapters, click here.

Definition of Solid Waste Decision Flowchart



Discarded Materials – Military Munitions

Ingredients/Substitutes	Excluded Materials	**Discarded Materials**

Military Munitions ● Inherently Waste-Like ● Abandoned ● Recycled

Step 3 of 9

Is the material a military munition identified as solid waste?

A military munition is a *solid waste* if it is defined as such in 40 CFR 266.202. Unused or defective munitions are solid wastes when abandoned (i.e., disposed of, burned, incinerated) or treated prior to disposal; rendered non-recyclable or non-useable through deterioration; or declared a waste by an authorized military official. Used (i.e., fired or detonated) munitions may also be solid wastes if collected for storage, recycling, treatment, or disposal.

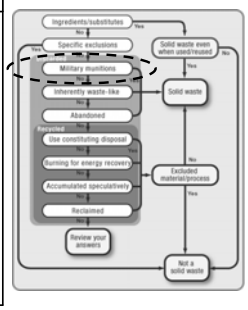
Is the material a military munition identified as *solid waste*?

→ YES
→ NO

Not sure what this question is asking? Please see:

- DSW Compendium, Volume C: Military Munitions – Lists resources specific to this topic area.
- RCRA Orientation Manual: Hazardous Waste Identification (PDF) (26 pp, 400K) – This chapter provides an overview of solid and hazardous waste identification. To access other Orientation Manual chapters, click here.

Definition of Solid Waste Decision Flowchart



Recycled Materials – Reclaimed

Ingredients/Substitutes	Excluded Materials	**Discarded Materials**

Military Munitions • Inherently Waste-Like • Abandoned • **Recycled**

Step 9 of 9

Is the material being reclaimed?

As described under 40 CFR 261.2(c)(3), some materials are a solid waste when *reclaimed*. A material is *reclaimed* if it is processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents.

Is the material being *reclaimed*?

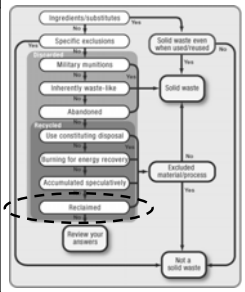
→ YES
→ NO

Not sure what this question is asking? Please see:

➢DSW Compendium, Volume F: Reclamation – Lists resources specific to this topic area.

➢RCRA Orientation Manual: Hazardous Waste Identification (PDF) (26 pp, 400K) – This chapter provides an overview of solid and hazardous waste identification. To access other Orientation Manual chapters, click here.

Definition of Solid Waste Decision Flowchart



Recycled Materials – Reclaimed (*cont*.)

Ingredients/Substitutes	Excluded Materials	**Discarded Materials**

Military Munitions • Inherently Waste-Like • Abandoned • **Recycled**

Step 9 (cont.) of 9

Is the material being reclaimed a sludge or by-product exhibiting a characteristic of hazardous waste (note: this does not pertain to listed wastes)?

→ YES
→ NO

Not sure what this question is asking? Please see:

➢"Sludge" is defined at 40 CFR 260.10.

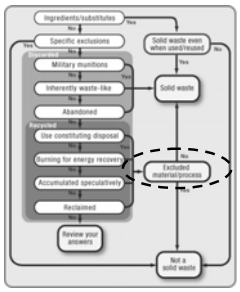
➢"By-product" is defined at 40 CFR 261.1(c)(3).

➢For information on hazardous waste characteristics, see the Hazardous Waste area.

➢DSW Compendium, Volume F: Reclamation – Lists resources specific to this topic area.

➢RCRA Orientation Manual: Hazardous Waste Identification (PDF) (26 pp, 400K) – This chapter provides an overview of solid and hazardous waste identification. To access other Orientation Manual chapters, click here.

Definition of Solid Waste Decision Flowchart



Material is a Solid Waste

Ingredients/Substitutes	Excluded Materials	**Discarded Materials**

Military Munitions • Inherently Waste-Like • Abandoned • **Recycled**

Based on your answers, your material is a solid waste and may be subject to RCRA Subtitle C regulation.

So, what's next?

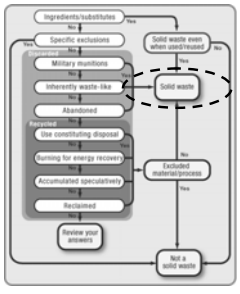
Your solid waste may be:

➢ Excluded from the definition of *hazardous waste*;
➢ An excluded hazardous waste (i.e., hazardous wastes not subject to hazardous waste regulation when recycled);
➢ A hazardous waste subject to alternative requirements when recycled; or,
➢ Subject to full hazardous waste requirements.
  - The full requirements for facilities that store and/or recycle hazardous wastes are outlined in 40 CFR 5261.6(b)-(c). Additional information on requirements for persons who generate, transport, or store prior to recycling is provided at the Hazardous Waste area.
  - For more information on characteristic and listed wastes, see the Hazardous Waste area.

Also, some materials may have received a variance from the definition of solid waste. Standards and criteria for variances are provided at 40 CFR 260.30 and 40 CFR 260.31. For additional information, see DSW Compendium, Volume S: Case-by-Case Variances.

This web site describes Federal regulations for hazardous wastes. You may be subject to more stringent regulations established by your State. Please contact your appropriate State environmental authority for official guidance.

Definition of Solid Waste Decision Flowchart



Material is a Solid Waste – Use Constituting Disposal

Ingredients/Substitutes	Excluded Materials	**Discarded Materials**
Military Munitions • Inherently Waste-Like • Abandoned • **Recycled**		

Based on your answers, your material is one of the following solid wastes:

- A spent material;
- A sludge listed in 40 CFR Part 261.31 or 261.32;
- A sludge exhibiting a characteristic of hazardous waste;
- A by-product listed in 40 CFR Part 261.31 or 261.32;
- A by-product exhibiting a characteristic of hazardous waste;
- A commercial chemical product listed in 40 CFR 261.33 that is not land applied as the ordinary use for the material; or,
- Scrap metal other than excluded scrap metal (see 261.1(c)(9)).

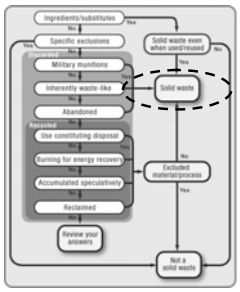
So, what's next? You should check to see if your solid waste may be:

- Excluded from the definition of *hazardous waste*;
- An excluded hazardous waste (i.e., hazardous wastes not subject to hazardous waste regulation when recycled);
- A hazardous waste subject to less-stringent requirements when recycled; or
- Subject to full hazardous waste requirements.
  - The full requirements for facilities that store and/or recycle hazardous wastes are outlined in 40 CFR §261.6(b)-(c). Additional information on requirements for persons who generate, transport, or store prior to recycling is provided at the Hazardous Waste area.
  - For more information on characteristic and listed wastes, see the Hazardous Waste area.

Also, some materials may be excluded from the definition of solid waste by variance. Standards and criteria for variances are provided at 40 CFR 260.30 and 40 CFR 260.31. For additional information, see DSW Compendium, Volume S: Case-by-Case Variances.

This web site describes Federal regulations for hazardous wastes. You may be subject to more stringent regulations established by your State. Please contact your appropriate State environmental authority for official guidance.

Definition of Solid Waste Decision Flowchart



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Material is not a Solid Waste

Ingredients/Substitutes	Excluded Materials	**Discarded Materials**
Military Munitions • **Inherently Waste-Like** • Abandoned • Recycled		

Based on your answers, your material does not appear to be subject to federal RCRA Subtitle C regulation.

However, you may want to review the selections you have made in this tool kit to ensure their accuracy. If you require additional assistance, you may submit a question.

Please note that the goal of EPA's definition of solid waste regulations is to ensure that materials are recycled safely and legitimately.

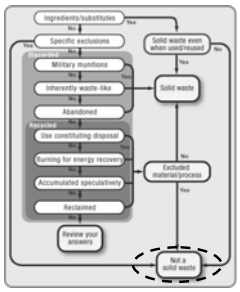
A situation may occur when a respondent in an enforcement action regarding a claim that their material is not a solid waste or conditionally exempt from regulation must demonstrate that there is a known market or disposition for their material. (See 40 CFR 261.2(f)). EPA also has elaborated on this issue in terms of other criteria that may be used to support a claim that their material is not a solid waste (i.e., similar to an analogous raw material, material value, handled similarly as raw material, degree of processing required, etc).

Also note that your material also may be subject to other environmental regulation, e.g., under RCRA Subtitle D or other state hazardous waste regulations.

For more information on wastes regulated under RCRA Subtitle D, see the Nonhazardous Waste area.

Please contact your appropriate State environmental authority for official guidance.

Definition of Solid Waste Decision Flowchart



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Part 4

Overview of Proposed DSW Regulatory Framework

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Proposed Definition of Solid Waste (DSW) Rule for Hazardous Secondary Materials Recycling

August 12, 2008

Presented by
Amy Lile
Office of Solid Waste, EPA
lile.amy@epa.gov
(703) 305-9091

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Presentation Overview

- Purpose of Proposed Revisions to DSW
- DSW Proposal Background
- Supplemental Proposal
  - Three Major Components
  - Recycling Studies
  - Main Comments
  - Potential Impacts
  - Status of Final Rulemaking
- Comparison of Current Regs & Proposal
- Additional DSW Activities

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Purpose of Proposed Revisions to DSW

- Streamline regulation of hazardous secondary materials to encourage beneficial recycling and help conserve resources.
- By removing unnecessary controls, recycling these materials will not only be safe, but also easier and more cost-efficient.
- Some controls are still needed to appropriately define when a hazardous secondary material is not “discarded,” and to provide states the ability to oversee the exclusions.

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Purpose of Proposed Revisions to DSW (cont.)

- Responds to court decision in American Battery Recyclers (ABR) v. EPA, 2000, as well as earlier court decisions
- Rule will make major revisions to the current definition of solid waste
  - Original proposal October 28, 2003
  - Supplemental proposal March 26, 2007

DSW Proposal Background

- Under current rules, some hazardous secondary materials that are recycled are regulated as wastes, and some are not
- Regulation under Subtitle C can discourage recycling
  - Permits, liability, state fees, other requirements often deter companies from recycling
- Key question: Is recycling more like waste management, or normal manufacturing?

DSW Proposal Background (cont.)

Scope of DSW proposal:

- Hazardous secondary materials sent for reclamation are eligible
- Not eligible – recycled materials that are:
  - Used in a manner constituting disposal (UCD)
  - Burned for energy recovery
  - Inherently waste-like materials

Supplemental Proposal – Three Major Components

1. Two self-implementing conditional exclusions:
   - Materials generated and recycled under the control of the generator
   - Materials generated and transferred to another company for recycling
2. Non-waste determination procedure
   - Petition process to determine materials that are not wastes
3. Codification and restructuring of existing criteria for "legitimate recycling"

Supplemental Proposal – Three Major Components (cont.)

"Under the Control of the Generator" Exclusion:

- Materials eligible for exclusion include those generated and recycled:
  - at the same facility
  - by the same company (even at different facilities)
  - under contractual arrangements (e.g., residues recycled by a tolling contractor)
- Conditions for exclusion:
  - No speculative accumulation
  - One-time notice
  - Any storage in land-based units is contained

Supplemental Proposal – Three Major Components (cont.)

"Transfer-based" Exclusion:

- Materials eligible for exclusion include those:
  - generated and transferred by the generator to a reclamation facility
  - received by a reclamation facility for recycling
- Conditions for exclusion:
  - No speculative accumulation (generator/recycler)
  - One-time notice (generator/recycler)
  - Recordkeeping and "reasonable efforts" (generator)
  - Recordkeeping (recycler)
  - Performance-based storage standard (recycler)
  - Safe management of recycling residues (recycler)
  - Financial assurance (recycler)

Supplemental Proposal – Three Major Components (cont.)

Non-Waste Petition Process:

- Materials eligible for petition include those:
  - recycled in a continuous industrial process
  - resembling a product or intermediate
  - recycled through contractual arrangements where the generator retains control over production and residuals
- This is intended to be an administrative procedure where petitioners submit information to show their materials are clearly not discarded per criteria set out in the regulations.

Supplemental Proposal – Three Major Components (cont.)

Legitimacy Criteria:

- All recycling of hazardous wastes/secondary materials must be "legitimate"
- Criteria for determining legitimacy of recycling practices are currently in guidance and preamble statements
- States and other stakeholders have long argued for legitimacy regulations:
  - increased transparency
  - greater regulatory certainty
  - easier to enforcement

Supplemental Proposal – Three Major Components (cont.)

Legitimacy Criteria (cont):

- Two mandatory factors
  - Materials must provide useful contribution to product or recycling process
  - Recycling must produce valuable product
- Two factors to be considered
  - Materials must be managed as valuable commodities
  - Products of recycling must not contain significantly higher levels of hazardous constituents than are in analogous products

Supplemental Proposal – Three Major Components (cont.)

Legitimacy Criteria (cont.):

- Supplemental proposal provides more guidance on considering economics of recycling in making legitimacy determinations
- Also sought comment on codification of the legitimacy

Supplemental Proposal – Recycling Studies

The supplemental proposal included and relied upon information from three recycling studies:

1. Environmental problems associated with recycling post-RCRA and post-CERCLA
2. Current good practices for recycling hazardous secondary materials
3. Potential effects of market forces on hazardous secondary materials

Supplemental Proposal – Main Comments

120 substantive comments:

- Many states supported proposal (some only for on-site exclusion). Most wanted additional conditions.
- Generating industry mostly positive and recognized improvements on 2003 proposal. Suggested changes like allowing "intermediate facilities" that consolidate shipments to be eligible for exclusion and tailoring financial assurance to recycling facilities. Some still challenged EPA's authority to regulate reclamation activities and impose conditions.
- Recycling/waste management industries were split (change from 2003). Some companies were strongly opposed to proposal, but most appeared to support it.
- Environmental groups uniformly opposed the proposal.

Supplemental Proposal – Main Comments (cont.)

- There is general support for the non-waste determination process, although states have concerns about resources.
- States and environmental groups strongly support codification of legitimacy and want all the factors mandatory; industry had a more mixed reaction.
- EPA received no substantive critique of the recycling studies. There were some objections to how information was used (from both industry and environmental groups).

Supplemental Proposal – Potential Impacts

- Approximately 4,600 facilities and 650,000 tons of hazardous waste would be affected annually, providing a cost savings of approximately $107 million per year.
- Affected materials include 590,000 tons of material already being recycled, and 60,000 tons of new recycling.

Supplemental Proposal – Status of Final Rulemaking

- Original proposal published October 28, 2003
- Supplemental proposal published March 26, 2007 (72 FR 14172)
- Final rulemaking scheduled for signature Summer 2008
- For the latest status of the rulemaking, visit the DSW rulemaking website: http://www.epa.gov/epaoswer/hazwaste/dsw/abr.htm
- EPA Contact: Tracy Atagi, (703) 308-8672

Comparison of Current Regs & Proposal – Under Control of Generator Exclusion

Requirement	Existing Requirements for LQGs	DSW Proposal Requirements
Time limits	yes	yes - no speculative accumulation
Notification	yes	yes - one-time notification (re-notification in event of change)
Tracking	yes	no
Recordkeeping	yes	yes - certification that material is generated and reclaimed by same "person"; or contract between tolling contractor and batch manufacturer
Biennial Reporting	yes	no
Emergency & contingency plans	yes	no
Personnel training	yes	no
Storage requirements	yes - tanks, containers, etc.	yes - must be "contained" if in a *land-based unit*
Residuals management	yes - applicable requirements for HW management	yes - applicable requirements for HW management
Financial assurance	no	no
Closure & post-closure	yes - general standard	no
Export notice	yes	N/A

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Comparison of Current Regs & Proposal – Transfer-based Exclusion for Generators

Requirement	Existing Requirements for LQGs	DSW Proposal Requirements
Time limits	yes	yes - no speculative accumulation
Notification	yes	yes - one-time notification (re-notification in event of change)
Tracking	yes	yes - maintain off-site shipment records (3 years)
Recordkeeping	yes	no
Biennial Reporting	yes	no
Emergency & contingency plans	yes	no
Personnel training	yes	no
Storage requirements	yes - tanks, containers, etc.	yes - must be "contained" if in a *land-based unit*
Financial assurance	no	no
Closure & post-closure	yes - general standard	no
Export notice	yes	yes
Due diligence	N/A	yes - reasonable efforts

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Comparison of Current Regs & Proposal – Transfer-based Exclusion for Recyclers

Requirement	Existing Requirements for Recyclers	DSW Proposal Requirements
Time limits	yes	yes - no speculative accumulation
Notification	yes	yes - one-time notification (re-notification in event of change)
Tracking	yes	yes - maintain records of shipments received (3 yrs)
Recordkeeping	yes	no
Biennial Reporting	yes	no
Emergency & contingency plans	yes	no
Personnel training	yes	no
Storage requirements	yes - permit	yes - managed in a manner that is at least as protective as that employed for "analogous raw materials"; or must be "contained"; must be "contained" if in a *land-based unit*
Recycling residuals requirements	yes - applicable requirements for HW management	yes - requirements for recycling residuals that are listed or characteristic continue to apply; any residual generated must be managed in manner that is protective of human health and the environment
Financial assurance	yes - if permitted	yes
Closure & post-closure	yes	no
Export notice	yes	yes

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Additional DSW Activities

- New web pages for DSW and hazardous waste recycling with additional resources:
  - DSW Compendium: collection of materials addressing issues related to the federal definition of solid waste.
  - DSW Tool: interactive guide that will walk user through the steps to determining if a secondary material is a solid waste.
- Estimated rollout is Summer 2008
- http://www.epa.gov/osw/

Thank You

After viewing the links to additional resources, please complete our online feedback form.