

# **F006-F008 Metals Reclamation Rule**

**Presentation to  
SBA Environmental Roundtable Meeting**

**October 21, 2005**

## **Purpose of Briefing**

- Describe F006-F008 regulatory options under evaluation by EPA
- Identify and discuss issues impacting options under evaluation
- Discuss next steps

# **Rulemaking Objectives and Desired Outcomes**

- To encourage recycling of electroplating wastes by removing current regulatory disincentives to generators and handlers
- To recover metal resources that otherwise would be land disposed

# Outline of Presentation

- Background
- Some statistics of interest
- Options under evaluation
- Issues
- Next steps and associated schedule

## What are F006, F007 and F008 Wastes?

- F006 - sludges (usually from filter press) from electroplating wastewater treatment processes

F007 - spent cyanide plating baths from electroplating operations

- F008 - plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.

# Why are these wastes listed?

- F006 waste was listed for the hazardous constituents cadmium, hexavalent chromium, nickel, and complex cyanides. It also may contain lead, arsenic, and organics.
  - As part of listing process, the Agency identified damage incidents associated with contaminated wells, destruction of animal life that were attributable to the improper disposal of electroplating wastes.
- F007 and F008 wastes were listed as hazardous wastes because each of the wastes exhibits either reactive or toxic properties, particularly because of their cyanide content.

## **How much electroplating waste is generated and recycled annually?**

- Total affected volume: 125,000 tons generated in 2001
  - 50,000 tons recycled
  - 75,000 tons treated, stabilized or landfilled
- 1,400 affected facilities (50 % are job shops or PWB producers)

## **What are the recoverable metals of concern?**

- Primarily Copper, Nickel and precious metals
- To a lesser extent, chromium, zinc and tin

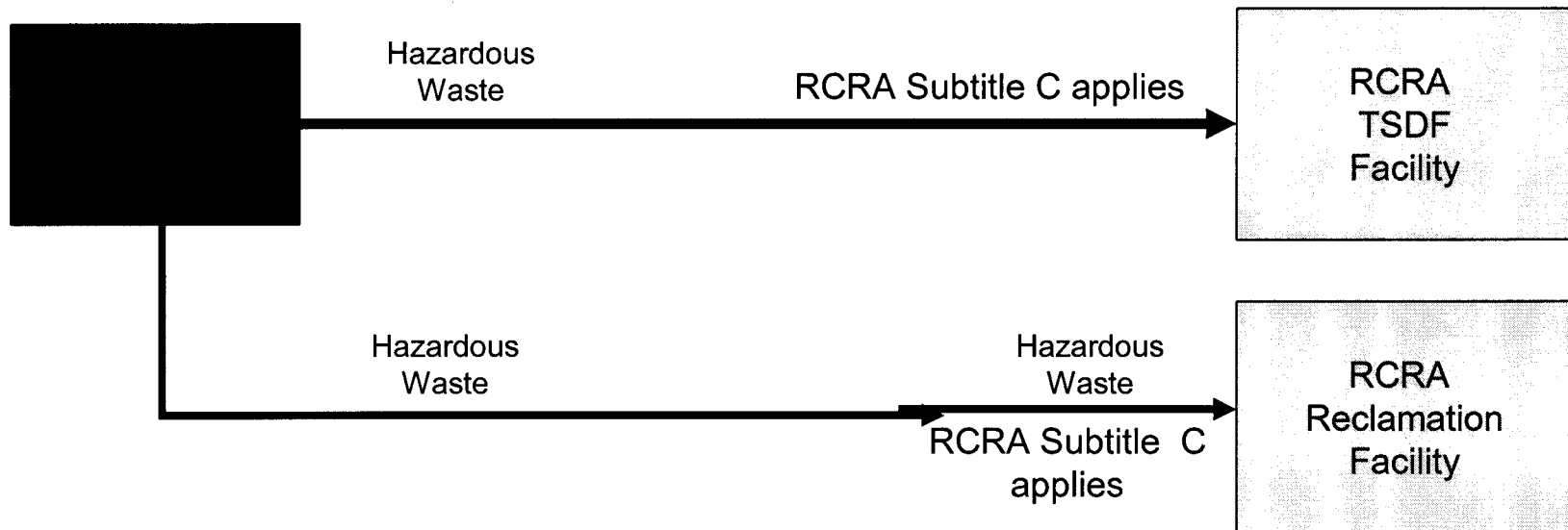


## Currently Landfilled F006: Metal and F006 Volume By Metal Content

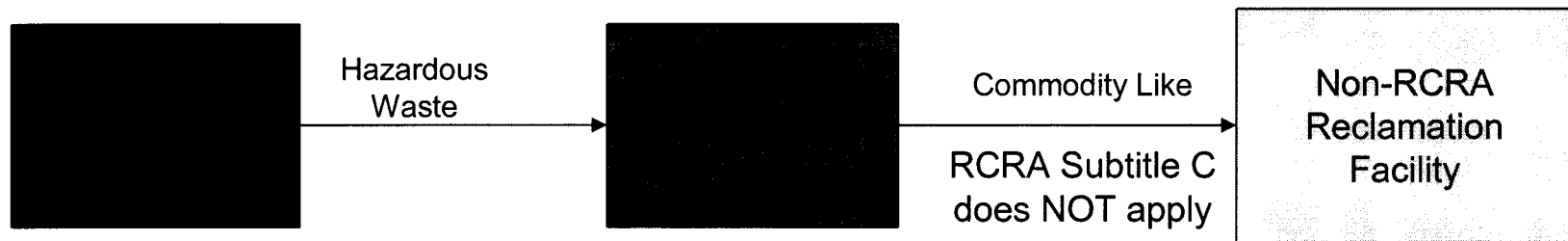
Metal Concentration	% of Metal in Landfilled F006	% of Landfilled F006 Volume
0 – 1 %	.6 %	17 %
1 – 2 %	.6%	6 %
2 – 5 %	2.3%	10 %
5 – 100 %	96.5%	67 %

Figure 1  
The World of Electroplating Wastes

**Current System**



**WRC Variance**



Note: Ohio's partial reclamation variance for Agmet (a consolidator) excluded F006 sludges from DSW at the gate

# Proposed Regulatory Framework: Two Tiered system

- Tier 1 – Conditional exclusion from the definition of solid waste (DSW) for commodity-like electroplating wastes

## Base Metal

## Minimum Concentration (dry weight, as generated)

Copper

18% or equivalent in precious metals, **or**

Nickel

12% or equivalent in precious metals

Ion exchange systems used to treat wastewaters from electroplating operations sent off-site for canister and resin regeneration also excluded from DSW.

## **Tier 2: Alternative Subtitle C regulatory framework for recyclable electroplating wastes (Part 266)**

**Base Metal**

**Minimum Concentration of Base  
Metal Contained in Electroplating Wastes  
(Dry weight, as generated)**

**Copper**

**1.4% Or**

**Nickel**

**1.0%**

## **Legal Rationale for Proposed system**

- Tier 1 – meets definition for commodity-like materials
- Tier 2 – wastes legitimately recycled
  - at least 50% recovery rate

## **Conditions needed to satisfy exclusion from DSW for commodity-like materials**

- Initial notification to EPA or authorized state
- Rejected loads
- Materials managed to minimize loss
- Normal business records, including a legally binding contract between pertinent parties, and analytical test results records
- Compliance with export & import requirements
- Compliance w/cyanide limitations
- Compliance with speculative accumulation requirements
- Meet slag residue limits at recycling facilities

# **Requirements that must be satisfied in order to manage recyclable electroplating wastes under Part 266**

## **Generators**

- Same conditions as Commodity-like materials, plus
- 180-Day accumulation time period
- Exception reporting

## **Handlers** (Partial reclamation, primary mineral processing, secondary metals recycling and storage-only facilities)

- - Co-Propose Two Options
  - RCRA Subtitle C storage permits
  - Closure plan and financial assurance in lieu of RCRA permit + Generator requirements

## **Alternative Approaches/Options Designed to foster greater flexibility**

- Rely on contract specifications rather than specified concentrations to determine commodity-like thresholds
- Rely on range of concentrations, adjusted periodically, to determine commodity-like thresholds
- Rely on facility records associated average annual slag concentrations
- Rely on a mass balance approach to estimate metal recovery rates and associated useful contribution to recovery process
- Expand the list of metals to include chromium, zinc and tin
- **Exclude from DSW all recyclable electroplating wastes providing a useful contribution to the recovery process**



## Issues of Concern

- What additional amounts of copper and nickel (as well as other metals) will actually be recycled?
- Will generators bite at Tier 2? Materials still a hazardous waste
- Conditions and requirements – too prescriptive? OK?
- How to address facilities that have adopted pollution prevention practices and no longer generate F006 waste stream with constituents or constituent levels of concern?
- Cyanide: Is it a problem or not? Should concentration levels be risk-based? If so, what levels?
- Role of Brokers and associated regulatory requirements
- Consistency (or lack thereof) with potential ABR rulemaking

## **Current Status and Schedule**

Rule on Fast Track within Agency/OMB because of Thompson Report

- Early January 2006 - Proposed rule published in Federal Register (FR)
- March 2007 - Final Rule published in FR