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# **RCRA, Superfund & EPCRA Hotline Training Module**

**Introduction to:**

**Solid and Hazardous Waste  
Exclusions  
(40 CFR Part 261.4)**

**Updated July 1997**

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ONE OF A SERIES OF MODULES DEVELOPED AS A TRAINING TOOL FOR HOTLINE SPECIALISTS. EXPLAINS EACH WASTE EXCLUSION AND ITS SCOPE, SO ONE CAN APPLY THIS KNOWLEDGE IN DETERMINING WHETHER A GIVEN WASTE IS OR IS NOT REGULATED UNDER RCRA SUBTITLE C. CITES THE REGULATORY SECTION FOR EXCLUSIONS AND IDENTIFIES MATERIALS THAT ARE NOT SOLID WASTES AND SOLID WASTES THAT ARE NOT HAZARDOUS WASTES. LOCATES THE MANUFACTURING PROCESS UNIT EXCLUSION. IDENTIFIES THE SAMPLE AND TREATABILITY STUDY EXCLUSIONS AND THEIR APPLICABILITY. OUTLINES AND SPECIFIES THE CONDITIONS FOR MEETING THE EXCLUSIONS FOR HOUSE-HOLD WASTES AND MIXTURES OF DOMESTIC SEWAGE. THE INFORMATION IN THIS DOCUMENT IS NOT A COMPLETE REPRESENTATION OF EPA'S REGULATIONS OR POLICIES, BUT IS AN INTRODUCTION USED FOR HOTLINE TRAINING PURPOSES.			
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# SOLID AND HAZARDOUS WASTE EXCLUSIONS

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## 1. INTRODUCTION

The Resource Conservation and Recovery Act's (RCRA) Subtitle C hazardous waste management program is a comprehensive and carefully constructed system to ensure wastes are managed safely and lawfully. This program begins with a very specific, formal process to categorize wastes accurately and appropriately. This process is called waste identification. Because of the risks posed by mishandled hazardous wastes and the cost of hazardous waste management, this hazardous waste identification process is critical to operating the hazardous waste program effectively.

Some of the materials that would otherwise fit the definition of a solid or hazardous waste under hazardous waste identification are specifically excluded from the definition. EPA concluded that these materials should not be regulated as solid or hazardous waste for one or more of a number of reasons. Many exclusions are mandated in the statute. EPA selected other exclusions to provide an incentive to recycle certain materials, because there was not enough information on the material to justify its regulation as a solid or hazardous waste, or because the material was already subject to regulation under another statute. The exclusions from the definition of a RCRA solid or hazardous waste are codified in 40 CFR §261.4.

This module explains each waste exclusion and its scope, so you can apply this knowledge in determining whether a given waste is or is not regulated under RCRA Subtitle C. When you have completed this module, you will be able to:

- Cite the regulatory section for exclusions, and identify materials that are not solid wastes and solid wastes that are not hazardous wastes
- Locate the manufacturing process unit exclusion
- Identify the sample and treatability study exclusions and their applicability
- Outline and specify the conditions for meeting the exclusions for household wastes and mixtures of domestic sewage.

Use this list of objectives to check your knowledge of this topic after you complete the training session.



## 2. REGULATORY SUMMARY

After determining that a waste is a solid waste, the next step in every hazardous waste determination requires the generator to determine if the waste fits any of the four categories of exclusions identified in §261.4 (§262.11(a)). If the waste fits one of these categories, it is not regulated as a RCRA hazardous waste, and the hazardous waste determination process ceases. The first category includes wastes that are excluded from being solid wastes (§261.4(a)). The second category covers wastes that are excluded from being hazardous wastes (§261.4(b)). The remaining two categories are conditional exclusions that only apply when the provisions established under each section are met. For example, §261.4(c) contains an exclusion for hazardous waste generated in raw material, product storage, or manufacturing units. The final category is a limited exclusion for laboratory samples and waste treatability studies. If a waste is excluded under any of these categories, Subtitle C hazardous waste requirements do not apply. On the other hand, if an exclusion does not apply, the steps of hazardous waste identification continue pursuant to §262.11.

These four broad categories of §261.4 exclusions are addressed in the order in which they appear in the CFR.

### 2.1 SOLID WASTE EXCLUSIONS

The exclusions from the definition of solid waste are listed in §261.4(a). If a material is listed under §261.4(a), it is not a solid waste and thus under the regulations cannot be a hazardous waste. The analysis of the waste stops there if it is excluded — it does not matter if the material exhibits a characteristic as set out in §§261.21 through 261.24 (i.e., ignitable, corrosive, reactive, or toxic (TC)), or would otherwise be a waste listed in Part 261, Subpart D. Currently there are 14 exclusions under §261.4(a). These materials are excluded for a variety of reasons, including public policy, economic impacts, prior regulation, lack of data, or the waste's high volume and low toxicity. The decision to exclude the following materials from the solid waste definition is a result of either Congressional action (embodied in the statute) or EPA rulemaking (embodied in the regulations).

#### DOMESTIC SEWAGE AND MIXTURES OF DOMESTIC SEWAGE (§261.4(a)(1))

Sanitary wastes that pass through a publicly or privately owned sewer system are considered domestic sewage and are excluded from regulation under Subtitle C (45 FR 33066, 33097; May 19, 1980).

Under §261.4(a)(1)(ii), mixtures of sanitary wastes and other wastes (including hazardous industrial wastes) that pass through a sewer system to a publicly owned treatment works (POTW) are excluded from Subtitle C regulation. The exclusion applies to a waste when it first enters a sewer system provided that it will mix with

sanitary wastes prior to storage or treatment by a POTW. The Agency interprets this exclusion to begin at the point of entry into the sewage system, not at the point the hazardous waste actually mixes with the solid waste (45 FR 33066, 33097; May 19, 1980). This exclusion does not include any waste directly transported to the POTW by truck or rail shipments (45 FR 33066, 33097 and 33176; May 19, 1980).

Prior to entering the sewer system, the waste may be a hazardous waste subject to RCRA regulation during generation, storage, and treatment. Once the waste has been discharged to the POTW, it is subject to Clean Water Act (CWA) regulations and local restrictions. Note that the CWA may prohibit discharges of certain chemicals and wastes into a sewer system.

RCRA hazardous wastes, once mixed with sewage in the POTW's sewer system, are no longer considered solid waste. Hence, the POTW is not receiving or treating RCRA hazardous wastes. When sludge is generated at the POTW from the treatment of the waste, however, it is subject to §262.11 analysis because it is a new point of generation. If the newly generated waste exhibits a characteristic of hazardous waste (i.e., ignitable, corrosive, reactive, or the toxicity characteristic), it would be subject to Subtitle C regulation (45 FR 33066, 33101; May 19, 1980).

In certain circumstances, this exclusion may be applied to domestic sewage and mixtures of domestic sewage that pass through a federally owned treatment works (FOTW).

#### **POINT SOURCE DISCHARGE (§261.4(a)(2))**

Industrial wastewater discharges that are subject to CWA §402, also called point source discharges, are excluded from Subtitle C regulation. Point source discharges are "discernible or discrete conveyances" from which pollutants may be discharged, such as a pipe. The CWA regulates such discharges under the National Pollutant Discharge Elimination System (NPDES) permitting program. To avoid duplicative regulation, this exclusion applies at the discharge point where the wastes are first subject to CWA regulation (45 FR 33066, 33098; May 19, 1980). Any hazardous waste generation, treatment, or storage prior to the point source discharge is subject to RCRA. Many industrial facilities that treat wastewater on-site use this point source discharge exclusion.

#### **IRRIGATION RETURN FLOW (§261.4(a)(3))**

When agricultural land is irrigated, excess water may return to the water basin either as surface water runoff or through groundwater percolation. Though these return flows may often carry hazardous constituents (from pesticides or fertilizers) or exhibit a characteristic of hazardous waste, these wastes are excluded under §261.4(a)(3) (45 FR 33066, 33098; May 19, 1980).



**RADIOACTIVE WASTE (§261.4(a)(4))**

To avoid duplicative regulation of some materials under RCRA and the Atomic Energy Act (AEA), there is an exclusion for radioactive wastes (i.e., source, special nuclear, or by-product materials) since they were first regulated under the AEA (45 FR 33066, 33098; May 19, 1980). Only the radioactive components are excluded, however. If non-radioactive components of the waste make the waste a RCRA hazardous waste, the waste is regulated by both the AEA and RCRA.

**IN-SITU MINING (§261.4(a)(5))**

In-situ mining of oil shale, uranium, and other minerals may involve the application of solvent solutions directly to a mineral deposit in the ground. The solvent passes through the ground, collecting the mineral as it moves. The mineral and solvent mixtures are then collected in underground wells where the solution is removed. The solvent-contaminated earth produced, or the solution not recovered, by the in-situ mining process is not subject to RCRA when left in place (45 FR 33066, 33101; May 19, 1980).

**PULPING LIQUORS (§261.4(a)(6))**

Pulping liquor is a corrosive material used to dissolve wood chips. Pulping liquors, also called black liquors, that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process are excluded, unless accumulated speculatively as defined in §261.1(c) or reclaimed in another manner (50 FR 614, 642; January 4, 1985).

**SPENT SULFURIC ACID (§261.4(a)(7))**

Spent sulfuric acid is typically used to produce virgin sulfuric acid by reintroduction into the sulfuric acid production process. Spent sulfuric acid that is recycled in this manner is excluded from the definition of solid waste, unless accumulated speculatively as defined in §261.1(c) (50 FR 614, 642; January 4, 1985).

**RECLAMATION IN ENCLOSED TANKS (§261.4(a)(8))**

The exclusion in §261.4(a)(8), known as the closed-loop recycling exclusion, covers secondary materials (e.g., spent materials or sludges) generated during production processes which are reusable in those same processes (51 FR 25422, 25441; July 14, 1986). These secondary materials, if reclaimed and returned to the original process(es), are excluded, provided:

- Only tank storage is involved and the entire process, through the completion of reclamation, is closed

- Reclamation does not involve incineration or other controlled-flame combustion (i.e., boilers or furnaces)
- Secondary materials are never accumulated in tanks for more than 12 months without being reclaimed
- Reclaimed materials are not used to produce a fuel, or used to produce products that are used in a manner constituting disposal.

### **SPENT WOOD PRESERVATIVES (§261.4(a)(9))**

Spent wood preservatives are typically collected and reclaimed through a series of drip pads connected integrally to the production process, closely resembling a closed-loop scenario. Since the use of drip pads will not allow this reclamation process to fit the closed-loop exclusion in §261.4(a)(8), EPA developed an exclusion for reclaimed spent wood preserving solutions and wastewaters containing spent preservative that are reused for their original purpose, found in §261.4(a)(9) (55 FR 50450, 50460; December 6, 1990).

Both spent preserving solutions and wastewaters are solid and hazardous wastes until they are reclaimed (normally by filtration), but cease being solid wastes once reclamation is completed if the reclaimed material is used to treat wood (56 FR 30192; July 1, 1991).

EPA has proposed to expand this exclusion for wood preserving wastewaters and spent wood preserving solutions that are recycled and reused on-site. To qualify for this proposed exclusion, the wastewater or spent solution would need to be reused for its intended purpose and managed in a manner that prevents releases to the land or groundwater (62 FR 26041; May 12, 1997)

### **COKE BY-PRODUCT WASTES (§261.4(a)(10))**

Certain coke by-product wastes are excluded from the definition of solid waste. Coke, a product used in the production of iron, is manufactured by carbonizing coal in high temperature coke ovens. Throughout the production process many by-products are created. The initial by-product in the production process is coke oven gas (COG), which is refined to create products such as coal tar, light oil, and sodium phenolate. The coal tar is then further refined into pitch, naphthalene, refined tar, bitumen, and creosote oil. The refinement of these coke by-products generates several listed and characteristic wastestreams.

EPA granted an exclusion for K087, K141, K142, K143, K144, K145, K147, K148, and any other coke by-product wastes which exhibit the TC, when recycled in the following manner:

- Returned to the coke oven as a feedstock to produce coke; or

- Returned to the tar recovery process as a feedstock to produce coal tar; or
- Mixed with coal tar prior to coal tar refining or sale as a product.

In addition, to qualify for the exclusion, the coke by-product waste cannot be placed on the land from the time it is generated to the point it is recycled. EPA based its decision to exclude coke by-product wastes on the fact that recycling these wastes did not have a significant effect on the chemical composition of the products. Further, coke by-product residues are often managed as raw materials rather than wastes, thereby reducing the risk posed to human health and the environment because the material has an intrinsic value that promotes its safe management.

### **SPLASH CONDENSER DROSS RESIDUE (§261.4(a)(11))**

The treatment of emission control dust/sludge from the primary production of steel in electric furnaces (K061) generates a zinc-laden dross residue from the splash condenser in a high temperature metal recovery (HTMR) process, known as splash condenser dross residue (SCDR). This SCDR is typically considered a partially reclaimed secondary material because it contains 50 to 60 percent zinc. SCDR is commonly sent off-site for further reclamation, reused on-site in the HTMR process, or reprocessed by the HTMR on-site.

EPA determined that the SCDR material generated by certain HTMR processes does not pose a significant threat to human health and the environment as managed currently and therefore is exempted from Subtitle C regulation. This SCDR exclusion applies when the material is used as a source of zinc in zinc recovery operations, provided it is shipped in drums (if sent off-site) and not disposed of on the land at any point prior to further recovery (56 FR 41164; August 19, 1991).

### **RECOVERED OIL FROM PETROLEUM REFINING OPERATIONS (§261.4(a)(12))**

Recovered oil is a generic term that refers to secondary materials such as oil/water separator skimmings from plant wastewaters, slop oil and emulsions, oil skimmed from ballast water tanks, and oil from refinery process units (59 FR 38536; July 28, 1994).

The exclusion from the definition of solid waste at §261.4(a)(12) applies to the recovered oil that is returned to the petroleum refinery along with the normal process streams, provided the oil is not managed on the land or accumulated speculatively before placement in the refinery process. In addition, the exclusion does not apply to the water-in-oil emulsions before the oils are recovered. Thus management of these wastes before separation could be subject to Subtitle C management requirements.

The original exclusion required the placement of the recovered oil back in the process at a point prior to distillation or catalytic cracking. EPA has since amended this exclusion (61 FR 13103; March 26, 1996) to include points elsewhere in the refining process where separation of contaminants occurs; the current exclusion applies to recovered oil inserted into the petroleum refining process at or before a point "where contaminants are removed."

### **EXCLUDED SCRAP METAL (§261.4(a)(13))**

Processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal being recycled (collectively referred to as excluded scrap metal) are all excluded from the definition of solid waste and therefore not subject to RCRA Subtitle C regulations. EPA believes that excluded scrap metal being recycled is distinct from other secondary materials defined as wastes when recycled due to established markets for the material's use, inherent positive economic value of the material, the physical form of the material, and the absence of damage incidents attributed to the material. The Agency believes these characteristics make these types of scrap metal sufficiently product-like, making RCRA jurisdiction over these materials unnecessary.

Processed scrap metal is scrap metal which has been manually or mechanically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal includes, but is not limited to, scrap metal which has been bailed, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type, and fines, drosses and related materials which have been agglomerated. 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 scrap such as turnings, cuttings, punchings, and borings (62 FR 25998; 26011; May 12, 1997).

Prior to this exclusion, scrap metal being reclaimed was a solid waste, but was exempt from RCRA Subtitle C regulations. Scrap metals not meeting the requirements of the excluded scrap metal exclusion that are being reclaimed still qualify for this exemption from Subtitle C regulations (§261.6(a)(3)(ii)).

### **SHREDDED CIRCUITS BOARDS (261.4.(a)(14))**

Shredded circuit boards being recycled are excluded from the definition of solid waste, provided they are stored in containers sufficient to prevent release to the environment, and are free of mercury switches, mercury relays, nickel-cadmium batteries, and lithium batteries. Free of these materials means mercury switches or relays, or cadmium or lithium batteries are not or have not been part of the shredded circuit board batch. Shredded circuit boards that are not free of these materials are solid wastes (spent materials) when reclaimed.

At this time whole circuit boards meet the definition of scrap metal and are therefore exempt from regulation when recycled (§261.6(a)(3)(ii)). Since shredded circuit boards do not meet the definition of scrap metal, they are no longer exempt from regulation as scrap metal, even when being recycled. As shredding is a common industry practice and is beneficial to the recovery process, the Agency feels this exclusion is justified. The fact that shredded boards can be thought of as secondary feedstocks analogous to raw materials, have demonstrated positive economic value and markets, and are managed in a manner that minimizes environmental risk, serves as further justification for this exclusion (62 FR 25998; 26011; May 12, 1997).

## **2.2 HAZARDOUS WASTE EXCLUSIONS**

The second type of exclusion found under §261.4 excludes certain materials from the definition of hazardous waste. Section 261.4(b) lists the exceptions to the hazardous waste definition. If a material is listed under §261.4(b), it is a solid waste, but cannot be a hazardous waste, even if the material technically meets a listing in §§261.31 through 261.33 or it exhibits a characteristic under §§261.21 through 261.24 (i.e., ignitable, corrosive, reactive, or TC hazardous). If a waste excluded under §261.4(b) is mixed with a listed or characteristic hazardous waste it may render the waste no longer excluded. Presently there are 14 exclusions (§§261.4(b)(1) through (14)).

### **HOUSEHOLD WASTE (§261.4(b)(1))**

Under §261.4(b)(1), household waste is exempt from the RCRA Subtitle C regulations. The term household waste refers to any garbage, trash, and sanitary waste from septic tanks derived from single and multiple residences, and other residential units such as hotels and motels. In order for household waste to be exempt from regulation, it must meet two criteria: the waste has to be generated by individuals on the premises of a household, and the waste must be composed primarily of materials found in the waste generated by consumers in their homes. On November 13, 1984 (49 FR 44978), EPA expanded the definition of household wastes to include wastes from bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas. Although the collection, transportation, treatment, and disposal of household wastes are not subject to Parts 262 through 270, they are subject to federal, state, and local requirements concerning management of solid waste (45 FR 33066, 33099; May 19, 1980). This exclusion applies to all household waste, including household hazardous wastes – wastes normally found in household wastestreams, such as paint cans, bug spray, and cleaning fluids.

### **AGRICULTURAL WASTE (§261.4(b)(2))**

Solid wastes generated by crop or animal farming are excluded from hazardous waste regulation provided the wastes are returned to the ground as fertilizers or soil

conditioners. Examples of such waste would be crop residues and manures. Congress did not intend to include silviculture waste (forestry waste such as foliage and branches) in this hazardous waste exclusion. As a result, generators of forestry waste need to determine whether their waste is hazardous (45 FR 33066, 33099; May 19, 1980).

### **MINING OVERBURDEN (§261.4(b)(3))**

Reclamation of surface mines commonly involves returning waste overburden (i.e., earth and rocks), removed to gain access to ore deposits, to the mine. EPA excluded this waste because mining overburden is not a discarded material within the scope of RCRA. This exclusion is limited to overburden that is overlying a mineral deposit (45 FR 33000; May 19, 1980).

### **"BEVILL AND BENTSEN" WASTES (§§261.4(b)(4), (5), (7), (8))**

In the Solid Waste Disposal Act Amendments of 1980, Congress amended RCRA by exempting fossil fuel combustion wastes; oil, gas, and geothermal exploration, development, and production wastes; mining and mineral processing wastes; and cement kiln dust wastes from regulation as hazardous waste under RCRA pending further study by EPA. These wastes were temporarily exempted based on the "special waste" concept, the belief that these wastes should be regulated less stringently than other wastes because they were produced in very large volumes, were thought to pose less of a hazard than other wastes, and were generally not amenable to the management practices required under RCRA. The following sections describe these exclusions in detail.

### **FOSSIL FUEL COMBUSTION WASTE (§261.4(b)(4))**

In order to accommodate effective study, fossil fuel combustion wastes were divided into two categories, large-volume coal-fired utility wastes and remaining wastes, each having different schedules for regulatory determination.

On August 9, 1993, EPA made the final regulatory determination on the first category, permanently excluding large-volume coal-fired utility wastes (58 FR 42466). This category includes fly ash, bottom ash, boiler slag, and flue gas emission control waste, but only where they are managed alone or in combination, and not when they are co-managed with other wastes.

EPA deferred the final regulatory determination on remaining wastes; however, these wastes continue to be exempt from Subtitle C regulation until that determination is made in 1998. The remaining waste category includes wastes from utilities burning other non-coal fossil fuels, wastes from non-utility boilers burning any type of fossil fuel, large-volume coal-fired utility wastes that are co-managed with low-volume coal-fired utility wastes, and wastes generated by fluidized bed combustion operations.

Low volume wastes that are not co-managed with large-volume coal combustion wastes, such as boiler blowdown, coal pile runoff, cooling tower blowdown, demineralizer regenerant and rinses, metal and boiler cleaning wastes, pyrites, and sump effluents, are not included in either of these categories. Based on the original scope of the exclusion, they have always been subject to Subtitle C regulation when managed independently.

Fossil fuel combustion wastes that are generated by co-processing raw materials and hazardous wastes are also exempt under this exclusion provided the wastes meet specific criteria outlined in §266.112.

### **OIL, GAS, AND GEOTHERMAL WASTES (§261.4(b)(5))**

In December 1987, EPA issued a Report to Congress that outlined the results of a study on the management, volume, and toxicity of wastes generated by the exploration, development, and production of crude oil, natural gas, and geothermal energy. On July 6, 1988, EPA issued a final regulatory determination for these wastes which stated that Subtitle C regulation was not appropriate, thus permanently excluding oil, gas, and geothermal wastes under §261.4(b)(5) (53 FR 25446). The July 6, 1988, Federal Register also clarified the scope of the exclusion by providing examples of excluded wastes.

On March 22, 1993, EPA further clarified the scope of the exclusion in stating that wastes that have been brought to the surface during oil and gas exploration and production operations, or wastes that have otherwise been generated by contact with the oil and gas production stream during the removal of produced water or other contaminants, are generally covered by the exclusion (58 FR 15284).

### **MINING AND MINERAL PROCESSING WASTES (§261.4(b)(7))**

On May 19, 1980, EPA promulgated regulations under RCRA Subtitle C that stated that any waste material resulting from mining operations would meet the definition of a solid waste, and thus may meet the definition of a hazardous waste if it exhibited a hazardous characteristic(s). On October 21, 1980, before the Subtitle C regulations went into effect, Congress enacted the Solid Waste Disposal Act of 1980, which added §3001(b)(3)(A)(ii) to RCRA. This section created an exclusion from the definition of hazardous waste for wastes from the extraction, beneficiation, and processing of ores and minerals, pending a RCRA §8002(p) study on the hazards of these wastes and a final regulatory determination. On November 19, 1980, EPA promulgated an exclusion for "solid waste from the extraction, beneficiation, and processing of ores and minerals (including coal), including phosphate rock, and overburden for the mining of uranium ore" (45 FR 76618, 76620). This is one of the exclusions commonly referred to as a Bevill exclusion, named after a co-author of the statutory amendment, Congressman Bevill.

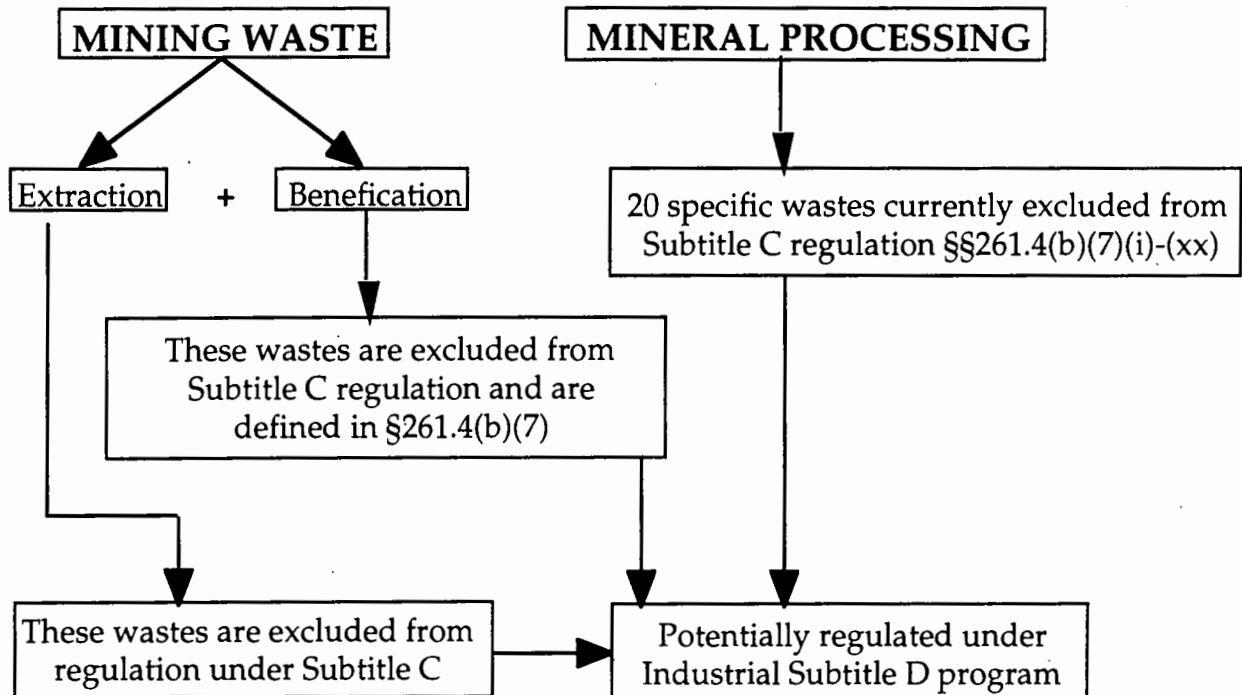
In 1985, EPA submitted a Report to Congress on mining wastes. After studying these mining wastes, EPA concluded that Subtitle C regulation was not appropriate. As a result, wastes from the extraction and beneficiation of ores and minerals remained exempt from Subtitle C requirements. EPA later limited the term beneficiation for the exemption to include only those activities outlined in §261.4(b)(7).

From 1980 until 1989, all wastes that met the descriptive definition of "...solid waste from the exploration, mining, milling, smelting and refining of ores and minerals" (45 FR 76619) were considered exempt mineral processing wastes. On September 1, 1989, EPA published a final rule that narrowed the scope of the exclusion as it applies to mineral processing by identifying and listing 25 excluded mineral processing wastes (54 FR 36592). Specifically, EPA finalized the exclusion for 5 mineral processing wastes and conditionally excluded 20 wastes pending additional studies. After completing a study of the 20 wastes, EPA removed 5 of the wastes that had been subject to the September 1, 1989, conditional exclusion, bringing the total number of excluded mineral processing wastes to 20 (55 FR 2322; January 23, 1990). In 1990, EPA studied these 20 mineral processing wastes and submitted a report to Congress on their volume and toxicity. EPA then issued a final regulatory determination that finalized the exempt status for the 20 mineral processing wastes in §261.4(b)(7) (56 FR 27300; June 13, 1991).

For purposes of the §261.4(b)(7) exclusion, EPA made special distinctions between extraction/beneficiation and mineral processing wastes. Wastes determined by EPA to be from the extraction/beneficiation of ores and minerals are covered by the exclusion, while wastes from mineral processing, except for the 20 wastes listed in §261.4(b)(7), are subject to RCRA Subtitle C regulations. Figure 1 illustrates the three parts of the exclusion.



**Figure 1**  
**MINING WASTE AND MINERAL**  
**PROCESSING EXCLUSION**



The beneficiation and processing of ores and minerals frequently occurs in industrial furnaces. These industrial furnaces can be fueled with a combination of fossil fuel and hazardous waste. Mining and mineral processing wastes generated in industrial furnaces which combine fossil and hazardous waste fuel do not automatically fall within the scope of the exclusion. The mining and mineral processing waste would remain exempt under §261.4(b)(7) only if the residues were below levels established in §266.112.

#### **CEMENT KILN DUST (§261.4(b)(8))**

Pending a study of its potential hazards, EPA excluded cement kiln dust (CKD) from the definition of hazardous waste. CKD is a fine-grained solid by-product generated by the control of particulate matter in stack emissions at cement production facilities. In December 1993, EPA issued the Report to Congress on Cement Kiln Dust detailing the generation and management of CKD, as well as five options for its future regulation. Then on February 7, 1995, EPA issued the final regulatory determination of CKD (60 FR 7366). EPA concluded that CKD requires stricter management controls, but should not be placed under full Subtitle C regulation.

Thus, EPA is expecting to develop tailor-made regulations for CKD within the next few years under the authority of RCRA. A proposed rule is expected in January 1998. Until EPA promulgates these new regulatory controls, however, CKD will generally remain exempt from all RCRA hazardous waste management requirements.

Often cement kilns combine fossil fuel with hazardous waste to heat the kilns. CKD generated in cement kilns which combine fossil and hazardous waste fuel do not automatically fall within the scope of the exclusion. The CKD would remain exempt from hazardous waste regulation only if the residues were below levels established in §266.112. This exemption will disappear once Subtitle C requirements for CKD are promulgated.

### **TRIVALENT CHROMIUM WASTES (§261.4(b)(6))**

Under §261.4(b)(6), chromium-bearing TC hazardous wastes from certain industries are excluded. Specific industries petitioned EPA (§260.20) to exclude their wastes from the hazardous waste lists for the following reasons:

- The chrome they produce is nearly exclusively trivalent, which is not considered hazardous
- Their process does not generate hexavalent chromium (a known carcinogen)
- The waste they produce is handled in a nonoxidizing environment (i.e., the trivalent chrome could not oxidize to hexavalent chrome).

EPA agreed with the data submitted by these industries and on October 30, 1980 (45 FR 72035), excluded three groups of wastes:

- Tannery wastes described in §§261.4(b)(6)(ii)(A)-(F) (Wastes fitting these descriptions had been listed as K053-K058, but these waste codes were subsequently deleted (57 FR 72037; October 30, 1980))
- Leather scrap wastes from the leather tanning, shoe manufacturing, and other leather manufacturing industries (§261.4(b)(6)(ii)(G))
- Wastewater treatment sludges from the production of titanium oxide (TiO<sub>2</sub>) pigment using chromium-bearing ores by the chloride process (§261.4(b)(6)(ii)(H)) (waste fitting this description was listed as K074, but the waste code was subsequently deleted (45 FR 72029, 72037; October 30, 1980)).

The exclusion is necessary despite the deletion of waste codes K053-K058 and K074 because these wastes could still exhibit the toxicity characteristic for chromium, since the Toxicity Characteristic Leaching Procedure (TCLP) does not distinguish between hexavalent and trivalent chromium.

Only chromium-bearing wastes from the three industry groups discussed above automatically qualify for the exclusion. Other industries or individual generators who believe their wastes meet the same criteria must petition the Administrator under §260.20(a) to be added to this exclusion, or they may, under §260.22, petition EPA to delist the waste (45 FR 72036; October 30, 1980). For more information, see the module entitled Petitions, Delistings, and Variances.

#### **ARSENICALLY TREATED WOOD (§261.4(b)(9))**

Under §261.4(b)(9), a solid waste that consists of discarded arsenical-treated wood or wood products that fails the Toxicity Characteristic Leaching Procedure (TCLP) for D004 - D017 only, and is not hazardous for any other reason, is excluded from Subtitle C regulation (57 FR 30657; July 10, 1992). Once such treated wood is used, it may be disposed of by the user (commercial or residential) without being subject to hazardous waste regulation. This exclusion was granted in response to a petition from the American Wood Preserving Institute on the grounds that the use of arsenically treated wood in contact with the ground presents risks which are similar to land disposal of wood. Note that this exclusion applies only to end-users and not to manufacturers. Wastes generated by sawmills or facilities which apply the arsenic formulation to the wood are potentially regulated under RCRA Subtitle C (45 FR 78530; November 25, 1980; and 55 FR 11798, 11839; March 29, 1990).

#### **PETROLEUM-CONTAMINATED MEDIA AND DEBRIS FROM UNDERGROUND STORAGE TANKS (§261.4(b)(10))**

Until further studies are completed on the extent and threat of releases from petroleum underground storage tanks (USTs), the Agency deferred the application of the toxicity characteristic to petroleum-contaminated media and debris. This deferral only applies to USTs subject to the Part 280 corrective action requirements, and only to the 25 newly identified organic constituents (D018 through D043) under the toxicity characteristic in §261.24 (55 FR 11836; March 29, 1990). EPA proposed to make this temporary deferral a permanent exclusion (58 FR 8504; February 12, 1993), and the proposal is expected to become a final rule in December 1998.

In order to fall under this exclusion, the waste must meet the specific criteria listed above. For example, this exclusion would not apply if soil failed the TCLP for lead (D008), since lead is not a newly identified waste under the TCLP (it was previously identified as an EP waste). Rather, it would be subject to full regulation under Subtitle C. On the other hand, if the soil only failed the TCLP for one of the new organic constituents, such as benzene (D018), the soil would only be subject to the corrective action requirements under Part 280.

### **HYDROCARBON RECOVERY OPERATIONS (§261.4(b)(11))**

Previously, EPA excluded certain types of injected groundwater that is reinjected as part of a hydrocarbon recovery operation under §261.4(b)(11) (55 FR 46829; November 27, 1990). This exclusion expired January 25, 1993.

### **SPENT CHLOROFLUOROCARBON REFRIGERANTS (§261.4(b)(12))**

Chlorofluorocarbons (CFCs) released to the atmosphere damage the ozone layer. To promote recycling and discourage the practice of venting used CFCs into the atmosphere in order to avoid Subtitle C regulation, the Agency has provided an exclusion for CFCs to be recycled (i.e., if the refrigerants are reclaimed for reuse (56 FR 5910; February 13, 1991)).

### **USED OIL FILTERS (§261.4(b)(13))**

EPA has established an exclusion from the definition of hazardous waste for used oil filters. This exclusion is for non-terne plated used oil filters provided the filters are gravity hot-drained by one of the following methods:

- Puncturing the filter anti-drain back valve or the filter dome end and hot-draining (with this method, EPA recommends hot-draining for a minimum of 12 hours)
- Hot draining and crushing
- Dismantling and hot-draining (EPA recommends separating each component and recycling it)
- Any equivalent method of hot-draining that will remove the oil.

Terne-plated filters are not included in this exclusion because the terne-plated filters often exhibit the toxicity characteristic for lead (D008), and are therefore subject to Subtitle C regulation (i.e., a hazardous waste determination). In addition, used oil that is removed from filters is subject to regulation under the Part 279 used oil management standards. This exclusion was originally codified in §261.4(b)(15) but was moved to §261.4(b)(13) (58 FR 26420; May 3, 1993).

### **USED OIL DISTILLATION BOTTOMS (§261.4(b)(14))**

EPA exempted distillation bottoms from the re-refining of used oil from Part 279 regulation when the bottoms are used as ingredients in asphalt paving and roofing materials (§279.10(e)(4)) (57 FR 41566; September 10, 1992). EPA's decision not to regulate the bottoms is based on data indicating that these wastes do not exhibit the TC and that common industry practices are protective of human health and the

environment. EPA codified a corresponding exemption from the definition of hazardous waste for this material in §261.4(b)(14) (58 FR 26420; May 3, 1993).

### **2.3 EXCLUSIONS FOR RAW MATERIAL, PRODUCT AND PROCESS UNIT WASTES (§261.4(c))**

Under §261.4(c), hazardous waste generated in raw material, product storage, or manufacturing units is excluded from Subtitle C regulation, as long as the waste remains in the unit. These units include tanks, pipelines, vehicles, and vessels used either in the manufacturing process, or for storing raw materials or products, but specifically do not include surface impoundments (45 FR 72024; October 30, 1980).

Once the waste is removed from the unit, the waste is considered to be generated and is subject to regulation. Thus, the generator accumulation standards apply once the waste is removed from a unit, or when a unit temporarily or permanently ceases operation for 90 days.

### **2.4 SAMPLE AND TREATABILITY STUDY EXCLUSIONS**

Because samples are small, discrete amounts of hazardous waste that are essential to accurate characterization and proper hazardous waste management, EPA developed two types of exclusions for lab samples. The regulations distinguish between and create separate requirements for characterization samples (§261.4(d)) and treatability study samples (§§261.4(e) and (f)).

#### **WASTE CHARACTERIZATION SAMPLES (§261.4(d))**

EPA excluded small samples of wastes from the requirements of Parts 262 through 268, 270, 124, and the notification requirements under RCRA §3010, provided that the samples are collected and shipped for the sole purpose of determining hazardous waste characteristics or composition (46 FR 47426; September 25, 1981). Storage, transportation, and testing of the sample are excluded from RCRA regulation even when the lab testing is complete, provided the sample is returned to the generator, and as long as the specific provisions in §261.4(d) are met. When shipping the sample to or from the laboratory, the sample collector must comply with certain labeling requirements, as well as any applicable U.S. Postal Service or Department of Transportation shipping requirements (§261.4(d)(2)).

The lab sample exclusion is intended to apply to small samples (typically under one gallon). Even though the regulations do not specify a size limit, EPA has stated that typically no more than one gallon is needed to completely characterize a sample for purposes of compliance with RCRA or other federal, state, or local regulations.

### **TREATABILITY STUDY SAMPLES (§§261.4(e) and (f))**

Various industry groups and individuals expressed concern that the waste characterization sample exclusion was too restrictive. In response to these comments, EPA developed regulations for waste samples used in small-scale waste treatability studies. Treatability studies are used to determine information such as whether a treatment process is efficient, or what types of wastes remain after the treatment is complete. Section 261.4(e) conditionally exempts persons who generate or collect samples for the sole purpose of conducting treatability studies from the requirements of Parts 261 through 263 and the notification requirements of RCRA §3010, provided the conditions in §§261.4(e)(1) through (3) are met. These requirements include packaging, labeling, and recordkeeping.

Both the treatability samples and the laboratories conducting such treatability studies are excluded from the requirements in Parts 261 through 266, 268, 270, and the notification requirements of RCRA §3010 as long as the provisions in §§261.4(f)(1) through (11) are met. On February 18, 1994, EPA modified the treatability study exclusions by increasing the time and quantity limits for contaminated media and debris (59 FR 8362).

### 3. SPECIAL ISSUES

Although the scope of the exclusions is usually straightforward, there are many issues requiring clarification beyond the regulatory or statutory descriptions of the exclusions. This section discusses a few of these issues that can arise during Hotline calls.

#### 3.1 FEDERALLY OWNED TREATMENT WORKS

The original exclusion for domestic sewage and mixtures of domestic sewage only applied to wastes that passed through a sewer system to a publicly owned treatment works (§261.4(a)(1)); however, the Federal Facilities Compliance Act of 1992 amended RCRA's statutory language in §1004(27) to include solid or dissolved material introduced by a source into a federally owned treatment works. This expanded the scope of the exclusion to include both publicly owned treatment works and federally owned treatment works.

#### 3.2 HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAMS

Based on the exclusion found in §261.4(b)(1), household hazardous wastes are solid wastes that are exempt from the definition of hazardous waste, but are still subject to Subtitle D regulation. This exclusion extends to those who collect household hazardous waste, either in community collection programs or private sector collection programs. Household hazardous waste that is mixed with small quantity or large quantity generator wastes, however, may be subject to full Subtitle C regulation. In addition, CERCLA liability may exist for persons managing household hazardous wastes that contain a hazardous substance as defined by CERCLA, even if it is not within the definition of a RCRA hazardous waste.

#### 3.3 MUNICIPAL WASTE COMBUSTION ASH

Municipal waste combustion ash (MWC) generated by waste-to-energy (WTE) facilities burning household waste and nonhazardous commercial and industrial waste is not exempt from Subtitle C regulations based on a judicial interpretation of RCRA §3001(i). The court stated that even though the waste-to-energy facilities remain exempt from Subtitle C requirements as treatment, storage, or disposal facilities based on RCRA §3001(i), the ash they produce is subject to hazardous waste determination under Subtitle C (60 FR 6666; February 3, 1995). The regulation of municipal waste combustion ash will be discussed in further detail in the module entitled Solid Waste Programs.





## 4. REGULATORY DEVELOPMENTS

In recent years, EPA has proposed several new exclusions from the definition of solid and hazardous waste. The following is a brief discussion of the proposed exclusions.

### 4.1 COMPARABLE FUELS (§261.4(a)(13))

On April 19, 1996, EPA proposed to exclude materials burned for energy recovery from the definition of solid and hazardous waste, provided these materials meet specification levels for concentrations of toxic constituents and physical properties that affect burning (61 FR 17549). Generators that comply with sampling and analysis, notification and certification, and recordkeeping requirements would be eligible for this exclusion. A final rule is expected September 1997.

### 4.2 MINERAL PROCESSING SECONDARY MATERIALS PROCESSED IN BENEFICIATION UNITS (§§261.4(a)(15) and 261.4(a)(16))

On May 12, 1997, EPA proposed that mineral processing secondary materials that are legitimately recycled within another mineral processing operation are not solid wastes provided the storage that precedes the recycling does not entail land placement, unless there is a volumetric necessity to use land-based storage units. If the high volume criterion is met, the land-based unit must meet risk-based performance standards, minimum design criteria, or receive a site-specific determination that the unit is not a disposal unit, in order for the waste to be excluded. Additionally, if the wastes are stored in tanks, containers, or containment buildings, the units must meet certain minimum integrity standards (62 FR 26041, 26048; May 12, 1997).

### 4.3 RECOVERED OIL FROM PETROCHEMICAL FACILITIES

The recovered oil exclusion under §261.4(a)(12) applies to oil recovered from a wastewater treatment system that a refinery shares with a co-located petrochemical facility. However, the exclusion does not apply to recovered oil that is sent to a petroleum refinery for recycling via any route other than a shared wastewater treatment system (e.g., via truck, rail, etc.). EPA proposed on November 20, 1995, to expand the exclusion to cover recovered oil that is sent from petrochemical facilities to co-located or commonly owned refineries for recycling by other means of transport (60 FR 57747, 57755).

#### **4.4 SPENT LIQUID-TREATING CAUSTICS**

EPA proposed on November 20, 1995, to exclude from the definition of solid waste spent liquid-treating caustics from petroleum refineries that are used as feedstocks in the manufacture of naphthenic and cresylic acid products. Without this exclusion, these materials may be considered spent materials being reclaimed which are subject to RCRA regulation (60 FR 57747, 57770).

#### **4.5 PETROLEUM-CONTAMINATED MEDIA AND DEBRIS FROM NON-USTS (§261.4(b)(11))**

The Agency has proposed a separate three-year exclusion for petroleum-contaminated media and debris from non-USTs (e.g., aboveground tanks, pipelines, and transportation vehicles) (57 FR 61542; December 24, 1992). The suspension would only apply in states that certify that they have an effective program in place to compel cleanup of spills and control disposal of these wastes, and that the cleanup is state-supervised, state-approved, or under federal authority.

This proposal was suspended until final action is taken on the Hazardous Waste Identification Rule (HWIR), which is expected to be finalized in June 1998. EPA has stated that if the HWIR-Media Rule is finalized, there will be no need for the exclusion for petroleum-contaminated media and debris from non-USTs (61 FR 18779, 18784; April 29, 1996).

Until EPA finalizes the HWIR-Media Rule, petroleum-contaminated media and debris from non-USTs are subject to hazardous waste regulations if they exhibit a characteristic or contain a listed hazardous waste.

#### **4.6 MINING AND MINERAL PROCESSING WASTES (§261.4(b)(7))**

On May 12, 1997, EPA proposed that wastes resulting from the co-processing of Bevill and non-Bevill materials in a beneficiation unit would no longer meet the conditions of the §261.4(b)(7) exclusion, regardless of whether the non-Bevill material exhibits a characteristic of hazardous waste (62 FR 26041, 26052; May 12, 1997).

#### **4.7 HWIR-MEDIA (§261.4(g))**

On April 29, 1996, EPA proposed that once the implementing agency has made a decision that media with constituents at certain concentrations no longer contain hazardous waste (i.e., "a contained-in decision"), the media may no longer be

regulated as hazardous waste under RCRA (61 FR 18779; April 29, 1996). For further discussion, see the module entitled Hazardous Waste Identification.

#### **4.8 DREDGED MATERIAL (§261.4(h))**

On April 29, 1996, EPA proposed to establish that dredged material disposed in waters in accordance with section 404 of the Clean Water Act (CWA) or section 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) would not be subject to RCRA. This proposal is intended to eliminate potential overlap of RCRA Subtitle C with the CWA and MPRSA programs (61 FR 18779, 18831; April 29, 1996).