

RCRA, Superfund & EPCRA Hotline Training Module

Introduction to:

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

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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 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 five 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 four categories are conditional exclusions that only apply when the provisions established under each section are met. Section 261.4(c) contains an exclusion for hazardous waste generated in raw material, product storage, or manufacturing units. Section 261.4(d) provides an exclusion for laboratory samples and the §§261.4(e) and (f) exclusions apply to waste treatability studies. Finally, §261.4(g) excludes dredged material from the definition of hazardous waste when permitted under the Marine Protection Research and Sanctuaries Act (MPRSA), or the Clean Water Act (CWA). 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 five 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), or would otherwise be a waste listed in Part 261, Subpart D. Currently there are 19 exclusions under §261.4(a). These materials are excluded for a variety of reasons, including public policy, economic impacts, regulation by other laws, lack of data, or impracticability of regulating the waste. 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.

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 sewage (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 CWA regulations and local restrictions. Note that 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. 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) that are regulated under 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, then the waste is regulated by both 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 in §261.4(a)(9) for reclaimed spent wood preserving solutions and wastewaters containing spent preservative that are reused for their original purpose (55 FR 50450, 50460; December 6, 1990).

Spent wood preserving solutions and wastewaters containing spent preservative are excluded at the point they are generated (prior to reclamation or direct reuse in the wood preserving operations), provided certain conditions are met. To qualify for this exclusion, these materials must be recycled and reused on site for their original intended purpose, and must be managed to prevent releases to land and groundwater. Additionally, the drip pads that collect wood preserving solutions must meet Subtitle C design and operating requirements (63 FR 28556, 28627; May 26, 1998). Finally, a plant owner must notify EPA of an intent to claim that the wastes are exempt from regulation.

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 toxicity characteristic, 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 excluded it from Subtitle C regulation. The 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).

HAZARDOUS SECONDARY MATERIALS FROM THE PETROLEUM REFINING INDUSTRY (§261.4(a)(12))

Hazardous Secondary Materials Generated and Recycled Within the Refining Industry (§261.4(a)(12)(i))

Many hazardous sludges, by-products, and spent materials are generated throughout the petroleum refining process. Often these secondary materials can be recycled back into the refining process to recover their oil content. Under the current regulatory definition of solid waste, secondary materials which are recycled in certain ways are excluded from the definition of solid waste (e.g., characteristic sludges which are being reclaimed) (§261.2). However, secondary materials that are used to produce fuels meet the definition of solid waste (§261.2(e)(2)(ii)). Thus, any hazardous secondary materials generated and recycled within the petroleum refining industry would have to be managed under Subtitle C, since petroleum is by definition a fuel.

In order to promote recycling of these materials, EPA promulgated an exclusion for oil-bearing secondary materials that are generated and recycled by the petroleum refining industry (SIC code 2911). This exclusion applies to any oil-bearing material generated at a petroleum refinery, including oil-bearing wastes commonly regulated as listed hazardous wastes (i.e., F037, F038, K048-K052, K069-K072), when these materials are reinserted into the petroleum refining process, including the coke quenching process (63 FR 42110; August 6, 1998).

This exclusion is limited to secondary materials generated during refining operations and does not extend to wastes generated elsewhere within the petroleum refining industry, such as from petroleum exploration and production sites, bulk crude oil storage, and petroleum industry-related transportation facilities. The secondary materials can be recycled in an on-site refining process or can be sent directly to an off-site petroleum refining facility to be reinserted back into the refining process, including, but not limited to, distillation, catalytic cracking, fractionation, or thermal cracking units (i.e., cokers). However, secondary materials that are inserted into a petroleum coker only qualify for this exclusion if the resulting coke product does not exhibit a characteristic of hazardous waste. Finally, all secondary materials that are excluded from the definition of solid waste under this exclusion cannot be placed on the land prior to recycling and cannot be speculatively accumulated.

Any residues generated from the recycling of oil-bearing hazardous secondary material, which otherwise would have met a listing description, are considered F037 listed wastes if intended for, or sent for, disposal (63 FR 42110; August 6, 1998).

Recovered Oil (§261.4(a)(12)(ii))

In addition to the exclusion for secondary materials generated by and recycled within the petroleum refining industry, secondary materials with significant oil content that are generated during other phases of oil production may be excluded from the definition of solid waste as recovered oil.

Recovered oil is a generic term that refers to materials that are primarily oil and that are recovered from any phase of petroleum exploration, production, refining, and transportation. This term generally 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). Recovered oil does not include listed oil-bearing hazardous wastes (i.e., F037, F038, K048-K052, and K069-K072) because these wastes are generated within the refining industry and can be recycled under §261.4(a)(12)(i). Used oil as defined in §279.1 does not qualify as recovered oil.

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 that these characteristics combined indicate that the above types of scrap metal are sufficiently product-like, making RCRA jurisdiction over these materials unnecessary.

Processed scrap metal is scrap metal that 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 metal that does not meet the conditions of the §261.4(a)(13) exclusion (i.e., all other scrap metal) continues to be exempt from substantive Subtitle C regulation if being reclaimed (§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.

Shredded circuit boards are not considered scrap metal, because the process of shredding the boards produces small fines from the whole board which are dispersible and do not meet the RCRA regulatory definition of scrap metal. However, shredded circuit boards can be considered secondary feedstocks, analogous to raw materials, if they have demonstrated positive economic value and they are managed in a way that reduces environmental risk (62 FR 25998, 26011-26012; May 12, 1997). Because shredding is a common industry practice and is beneficial to the recovery process, the Agency found this exclusion to be justified.

Whole circuit boards can meet the definition of scrap metal provided they are free of mercury switches, mercury relays, lithium batteries, or nickel-cadmium batteries, or have minimal quantities of mercury and batteries and are protectively packaged to minimize dispersion of metal constituents (63 FR 28556, 28630; May 26, 1998). As scrap metal, these whole circuit boards are exempt from regulation when recycled (§261.6(a)(3)(ii)).

PULPING CONDENSATES DERIVED FROM KRAFT MILL STEAM STRIPPERS (§261.4(a)(15))

The kraft pulping process is the most commonly used pulping process today. It utilizes various chemicals to break down wood into pulp. One of the options for controlling emissions from kraft pulping process condensates is to remove the hazardous air pollutants, primarily methanol, from the condensates using an air pollution control device called a stripper. After the hazardous pollutants are removed, a vent gas remains. Many mills then concentrate this vent gas by condensing, and subsequently burning, the liquid methanol as fuel.

The condensed methanol may be ignitable, and therefore would subject the facilities that burn this fuel to RCRA. EPA believes that this particular management practice reduces secondary environmental impacts, and provides cost savings for the mills. Consequently, the Agency promulgated an exclusion from the definition of solid waste for condensates derived from kraft mill steam strippers. This exclusion applies only if the waste is combusted at the mill that generated the condensates (63 FR 18533; April 15, 1998).

COMPARABLE FUELS (§261.4(a)(16))

Hazardous waste-derived fuels that are comparable to fossil fuels are excluded from the definition of solid waste. These exempted fuels have legitimate energy value and hazardous constituent concentrations similar to fossil fuels. Consequently, EPA has classified such fuels as products, rather than wastes. The exclusion promotes RCRA's resource recovery goals without creating a risk greater than that posed by commonly used commercial fuels. Only liquid and gaseous hazardous waste-derived fuels qualify for this exclusion.

In addition, the generator of the comparable fuel is required to comply with sampling and analysis requirements to demonstrate that the fuel is indeed comparable to fossil fuels. EPA sets standards, or specifications, for the level of Part 261, Appendix VIII hazardous constituents contained in the comparable fuel, the flash point, the heating value, and the viscosity of the waste-derived fuel (§261.38). The generator must also certify that the fuel is comparable, notify EPA and the public that a fuel will be burned on site, and maintain records at the facility about the fuel (63 FR 33782, 33783; June 19, 1998).

MINERAL PROCESSING SECONDARY MATERIALS BEING RECYCLED (§261.4(a)(17))

Mining and the recovery of mineral value from ores and minerals are processes that generate many wastes. These wastes fall into three general categories: extraction, beneficiation, and mineral processing. All extraction and beneficiation wastes and 20 specific mineral processing wastes are completely exempt from Subtitle C regulation (§261.4(b)(7)). However, other mineral processing wastes are regulated as hazardous wastes if they exhibit a characteristic.

Common industry practice is to recycle these mineral processing wastes back into the mining process in order to recover additional mineral value from the materials. In order to promote recycling of these secondary materials, EPA created a conditional exclusion from Subtitle C regulation when these secondary materials are recycled as a mineral processing secondary material. Specifically, these wastes must be managed in containers, tanks, containment buildings, or on approved pads. In addition, the materials must be legitimately recycled, they cannot be speculatively accumulated, and a generator claiming the exclusion must submit a notification to their EPA region or state (63 FR 28556, 28580; May 26, 1998).

PETROCHEMICAL RECOVERED OIL (§261.4(a)(18))

On August 6, 1998, EPA finalized an exclusion for recovered oil, generated at certain organic chemical industry facilities, which is inserted into the petroleum refining

process provided certain conditions are met (63 FR 42110). The term “petrochemical recovered oil” includes materials, which are primarily oil, and which are generated at organic chemical industry operations. Only petrochemical recovered oil that is hazardous because it exhibits the characteristic of ignitability or exhibits the toxicity characteristic for benzene (or both) is eligible for this exclusion. Additionally, EPA has clarified that this exclusion applies exclusively to recovered oil from “associated organic chemical manufacturing facilities.” Therefore, only organic chemical manufacturing facilities (primary SIC code of 2869), which are adjacent to a refinery, or whose operations are closely integrated with a petroleum refinery, are eligible for this exclusion. Examples of highly integrated facilities might include instances where a chemical manufacturing facility and refinery share a common wastewater treatment system; share manufacturing units; or have environmental permits that cover both facilities. Similar to the recovered oil exclusion from petroleum production (§261.4(a)(12)(ii)), petrochemical recovered oil can be inserted into the petroleum refinery process with normal petroleum refinery wastestreams. Finally, in order to qualify for this exclusion, the petrochemical recovered must not be speculatively accumulated or placed on the land prior to recycling into the petroleum refining process.

SPENT CAUSTIC SOLUTIONS FROM PETROLEUM REFINING (§261.4(a)(19))

EPA finalized an exclusion from the definition of solid waste for spent liquid treating caustics from petroleum refineries used as feedstocks in the manufacture of naphthenic and cresylic acid products provided the spent caustics are not placed on the land or speculatively accumulated (63 FR 42110; August 6, 1998). EPA believes that spent caustic, when used in this manner, is a valuable commercial feedstock in the production of these particular products, and thus is eligible for an exclusion.

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., ignitability, corrosivity, reactivity, or toxicity characteristic). 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. Currently, there are 14 exclusions under §261.4(b).

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, batteries, 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 (i.e., 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), and (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 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. "Bevill and Bentsen" refers to the two senators who

proposed these statutory exemptions. 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 the remaining wastes; therefore, these wastes continue to be exempt from Subtitle C regulation. 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. The report to Congress on these remaining wastes tentatively concludes to retain the exemption for all of the wastes except for oil combustion waste disposal, and coal combustion wastes when used beneficially in agricultural applications (Report to Congress: Wastes From the Combustion of Fossil Fuels, Volume 1 Executive Summary; March 1, 1999). Until a final regulatory determination is made for these remaining wastes by March 10, 2000 as ordered by consent decree, they remain excluded at §261.4(b)(4).

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))

Under the current provisions of the RCRA mining waste exclusion, solid waste from the extraction and beneficiation of ores and minerals, and 20 specific mineral processing wastes are exempt from regulation as hazardous wastes under RCRA. The mining waste exclusion was established in response to §3001(b)(3) of RCRA, which was added through the 1980 Solid Waste Disposal Act amendments. The Bevill amendment stopped EPA from regulating all wastes from extraction, beneficiation, and processing until the Agency performed a study and submitted a Report to Congress and then determined whether or not the wastes should continue to be excluded from Subtitle C regulation. EPA modified the hazardous waste regulations in November 1980 to reflect this exemption, and issued a preliminary and broad interpretation on the scope of the coverage (45 FR 76619; November 19, 1980).

In 1984, EPA was sued for failing to complete the required Report to Congress and regulatory determination in conformance with the statutory deadline (*Concerned Citizens of Adamstown v. EPA*). The court decision required EPA to address mining wastes according to two schedules, one for completing the required study of extraction and beneficiation wastes and the associated Report to Congress, and the second for issuing a regulatory determination regarding mineral processing wastes.

In 1985, EPA submitted a Report to Congress on waste from mineral extraction and beneficiation. After studying the wastes, EPA concluded that Subtitle C regulation was not appropriate for such wastes primarily because of the high volumes of wastes generated. EPA clarified later that the term beneficiation included only activities outlined in §261.4(b)(7).

EPA failed to meet the deadline for issuing the regulatory determination for mineral processing wastes. As a result, the Agency was sued by a coalition of environmental and special interest groups (*Environmental Defense Fund v. EPA*). In July of 1988, the

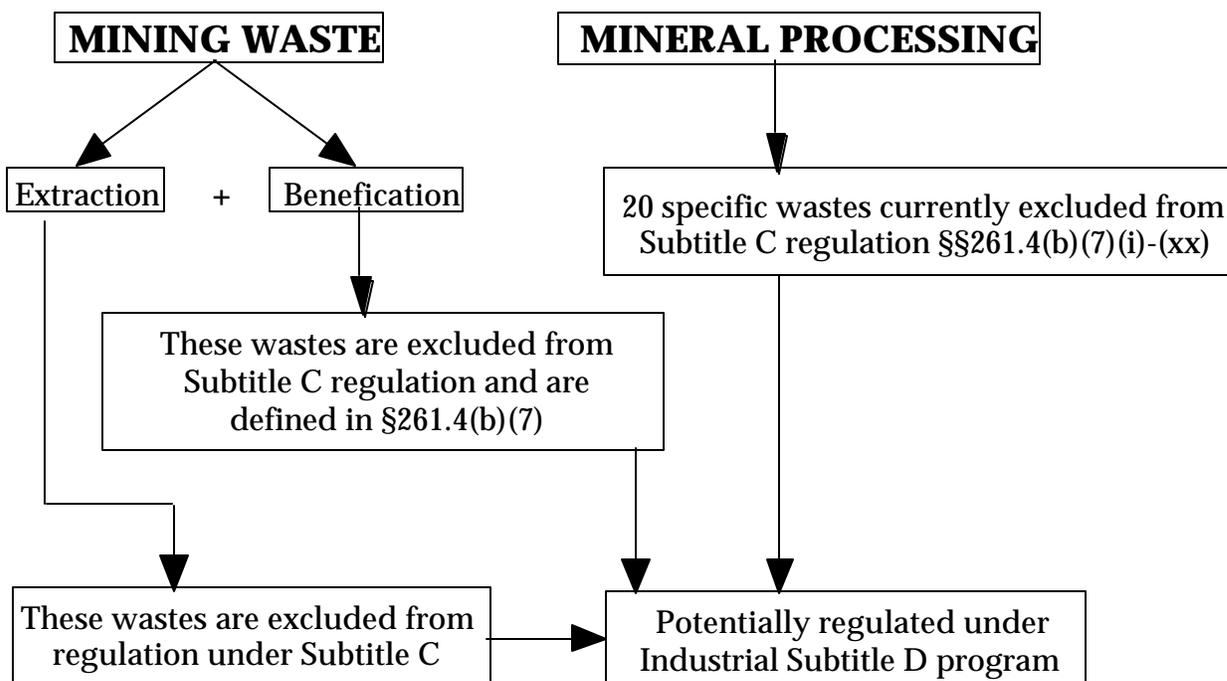
Agency was ordered to restrict the scope of the Bevill exclusion as it applied to mineral processing wastes so it included only "special wastes" which were defined to be of such "high volume" and "low hazard" that management under Subtitle C would be impracticable. During the years following the lawsuit, EPA proposed and promulgated several rules redefining the boundary of the exclusion for mineral processing wastes. In 1991, EPA finalized a regulatory determination limiting the exclusion to 20 specific mineral processing wastes. As a result, all mineral processing wastes not specifically excluded in §261.4(b)(7) are subject to hazardous waste regulations if characteristic.

In addition to the 20 mineral processing wastes specifically listed in §261.4(b)(7), lightweight aggregate air pollution control dust and sludge remains conditionally exempt from Subtitle C regulation. EPA will study this wastestream further before issuing a final regulatory determination (63 FR 28566, 28600; May 26, 1998).

Beneficiation and processing of ores and minerals frequently occurs in industrial furnaces. These furnaces may co-process ores and minerals with hazardous waste as feedstock. Residues from co-processing hazardous wastes with ores and minerals only remain exempt from Subtitle C as long as more than 50 percent of the feedstock is primary ores and minerals, and as long as the hazardous waste portion of the feed does not significantly affect the concentrations of toxic compounds in the resulting residue (§266.112).

In the vast majority of cases, mineral processing wastes are generated from furnaces (e.g., steel, copper, lead, and zinc). These mineral processing wastes may be recycled on or off site if the owner and operator comply with the §261.4(b)(7)(iii). Figure 1 illustrates the three parts of the exclusion.

Figure 1
MINING WASTE AND MINERAL
PROCESSING EXCLUSION



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. On August 20, 1999, EPA proposed that CKD would remain a nonhazardous waste provided that it is managed in landfills that meet groundwater protection and fugitive dust control standards (64 FR 45632). In addition, EPA proposed tailored Subtitle C regulatory standards for CKD that is not managed according to the conditions of the exclusion. EPA also proposed concentration limitations on certain pollutants in CKD that is used for agricultural purposes.

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 does not automatically fall within the scope of the exclusion. The CKD would remain exempt from hazardous waste regulation only if the hazardous portion of the feedstock does not significantly affect the concentrations of toxic compounds in the resulting residue (§266.112).

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

Under §261.4(b)(6), wastes that exhibit the toxicity characteristic for chromium from certain industries are excluded from the definition of hazardous waste. 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 to be 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 (TiO₂) 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 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 that 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 1999.

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 that are recycled (i.e., 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 only for non-terne plated used oil filters that 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 toxicity characteristic and that common industry practices are protective of human health and the environment. EPA codified a corresponding exclusion from the

definition of hazardous waste for this material in §261.4(b)(14) (58 FR 26420; May 3, 1993).

LEACHATE OR GAS CONDENSATE FROM LANDFILLS CARRYING THE K169, K170, K171, AND K172 LISTINGS (§261.4(b)(15))

Landfill leachate and landfill gas condensate derived from previously disposed wastes that now meet the listing description of one or more of the petroleum refinery listed wastes, K169, K170, K171, and K172, are temporarily deferred from the definition of hazardous waste provided their discharge is regulated under CWA. Additionally, they can not be managed in surface impoundments after February 13, 2001, unless the surface impoundment has a double liner and is only used to temporarily store landfill leachate or landfill gas condensate in the event of an emergency (64 FR 6806; February 11, 1999). The exclusion does not apply to leachate or gas condensate that exhibits any of the characteristics of hazardous waste or is derived from any waste codes other than the four petroleum refinery wastes described in the exclusion. Any residue generated from treating excluded leachate or gas condensate must also be evaluated to determine if it exhibits a characteristic.

This exclusion will remain effective while EPA examines the specific aspects of how the landfill leachate and landfill gas condensate are currently managed, whether Subtitle C regulation is appropriate, and the affect of the future CWA effluent limitation guidelines for landfill wastewaters.

2.3 EXCLUSIONS FOR RAW MATERIAL, PRODUCT AND PROCESS UNIT WASTES

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. Although 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 excludes 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, and 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).

2.5 DREDGED MATERIAL EXCLUSION (§261.4(g))

Dredging large volumes of sediment from United States waters is a common practice used to maintain navigable waterways, ports and marinas. Excavated dredged material is currently disposed in the ocean at designated sites in accordance with MPRSA. Additional options for disposing of dredged material exist under CWA including discharge into open waters of the United States, discharge to confined disposal facilities located in the United States, and the use of dredged material for beneficial uses. Prior to the promulgation of this exclusion, if dredged material proposed for disposal in the aquatic environment was contaminated or suspected of being contaminated with hazardous waste, the potential application of both RCRA Subtitle C regulations and the dredged material regulations under CWA or MPRSA complicated efficient assessment and management of dredged material. In order to avoid duplicative regulation, dredged material subject to a permit that has been issued under §103 of MPRSA, or §404 of CWA is excluded from the definition of hazardous waste (63 FR 65874, 65921; November 30, 1998).

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 new exclusions from the definition of solid and hazardous waste. The following is a brief discussion of the proposed exclusions.

4.1 DEFERRAL FROM RCRA FOR THE MANAGEMENT AND DISPOSAL OF LEAD-BASED PAINT DEBRIS

EPA proposed to temporarily suspend the applicability of the toxicity characteristic for lead to lead-based paint (LBP) debris generated at target housing and public and commercial buildings for which management and disposal standards have been proposed under Toxic Substances Control Act (TSCA) Title IV (63 FR 70233; December 18, 1998). EPA studies indicate that under the new TSCA standards, LBP debris will be identified, managed, and disposed of in a less costly and more time efficient manner than current RCRA regulatory requirements permit. EPA expects to publish a final rule in November 2000 (64 FR 21898; April 26, 1999).

4.2 PETROLEUM-CONTAMINATED MEDIA AND DEBRIS FROM NON-USTs

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 which 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.

EPA stated in the final Hazardous Waste Identification Rule for media (HWIR-media), that it plans to continue reviewing the issues addressed in the proposal, but that no final regulatory determination would be taken at the present time (63 FR 65874, 65931-65932; November 30, 1998). Until EPA takes final action in specifically addressing petroleum contaminated media and debris, 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.