
HAZARDOUS WASTE RECYCLING GUIDANCE DOCUMENT



**Colorado Department
of Public Health
and Environment**

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Purpose of this Guidance

This is intended as general guidance for generators of hazardous waste and is meant to assist in compliance with the hazardous waste regulations. The guidance is not meant to modify or replace the adopted regulations which undergo periodic revisions. In the event of a conflict between this guidance and adopted regulations, the regulations prevail. Some portions of the hazardous waste regulations are complex and this guidance does not go into details of these complex situations. If a regulatory situation is not described in the guidance or clarification is desired, an official interpretation of a specific hazardous waste regulation can be requested by writing to the Hazardous Materials and Waste Management Division at the address in Section 8.0 of this document.

This guidance is not meant to modify or replace the regulations, which undergo periodic revisions. In the event of a conflict between this guidance and regulations, the regulations govern. This document is not intended and cannot be relied upon to create any rights, substantive or procedural, enforceable by any party in litigation with Colorado. The Department reserves the right to act at variance with this guidance and to change it at any time.

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1.0 INTRODUCTION

The principle objective of hazardous waste regulation is the protection of human health and the environment. Hazardous waste regulation is also intended to encourage the conservation and recovery of valuable materials. The definition of solid waste, which serves as the starting point for Colorado's hazardous waste management system, reflects efforts to obtain the proper balance between these two underlying objectives. Colorado was authorized by the U.S. Environmental Protection Agency (EPA) to implement the hazardous waste program in 1984. The Colorado legislature established the basic program in statute in Title 25 Article 15, while the Colorado Hazardous Waste Regulations laid out the detailed program framework in 6 CCR 1007-3.

According to the hazardous waste regulations, a material must be a solid waste before it can be considered a hazardous waste. The regulatory definition of solid waste, found in the Colorado Hazardous Waste Regulations (CHWR) Section 261.2(a), encompasses: (1) materials that are abandoned; (2) materials that are recycled; (3) materials that are inherently waste-like; and (4) waste military munitions. Materials that do not fall within one of these broad categories are not subject to regulation as hazardous wastes.

Materials that are recycled are a special subset of the solid waste universe. When recycled, some materials may qualify for a conditional exclusion from the State definition of solid or hazardous waste and fall out of hazardous waste regulation, or be subject to less stringent regulatory controls. Based on the material and the type of recycling, the generator of a recyclable solid waste must determine if the waste is subject to reduced requirements or subject to full regulation.

This guidance document explains the range of hazardous waste management standards for different types of hazardous waste recycling, as dictated by Sections 261.4 and 261.6 and Parts 267, 273, and 279 of the Colorado Hazardous Waste Regulations. This range of management - from minimal regulation to full regulation - is essentially based on the type of recycling activity involved and the hazards posed, and demonstrates the Colorado Department of Public Health and Environment's (the Department) intent to encourage recycling while still protecting human health and the environment.

This document is intended to be used as "plain English" guidance on determining if a waste is a solid waste and if it meets any of the exclusions from regulation as a recyclable material. The information in this document is by no means a complete representation of the Department's regulations or policies. This document is not intended and cannot be relied upon to create any rights, substantive or procedural, enforceable by any party in litigation with Colorado.

2.0 DEFINITION OF SOLID WASTE [CHWR SECTION 261.2]

The statutory definition of a solid waste is not based on the physical form of the material, (i.e., whether or not it is a solid as opposed to a liquid or gas), but on the fact that the material is a waste. The Resource Conservation and Recovery Act (RCRA) Section 1004(27) defines solid waste as:

Any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material, resulting from industrial, commercial, mining, and agricultural operations and from community activities.

The regulatory definition of solid waste is any discarded material that is not specifically excluded by CHWR Section 261.4(a) as being a solid waste or that is not otherwise excluded by a variance given by the Colorado Solid and Hazardous Waste Commission. Discarded material encompasses three categories of materials:

- **Abandoned** - A material is abandoned if it is disposed of, burned, buried, or incinerated. In addition, a material that is stored prior to, or in lieu of, one of these activities is also considered to be abandoned. The term abandoned simply means thrown away.
- **Recycled** - A material is recycled if it is used, reused, or reclaimed. These three terms have specific regulatory definitions. A material is reclaimed if it is processed to recover a usable product or if it is regenerated (e.g., regeneration of spent solvents). A material is used or reused if it is either employed as an ingredient in an industrial process to make a product (e.g., distillation bottoms from one process used as feedstock in another process) or if it is employed as an effective substitute for a commercial product (e.g., spent pickle liquor used as a sludge conditioner in wastewater treatment) without being reclaimed first.

Some materials that are recycled are classified as solid wastes, while others are exempt from regulation as wastes. CHWR sections 261.2 (c), (d), and (e) describe the general requirements that determine whether wastes are considered solid wastes when recycled. Section 261.2(c) identifies certain materials that are recycled in particular ways (i.e., used in a manner constituting disposal, burned for energy recovery, reclaimed, or speculatively accumulated). Section 261.2(d) lists inherently waste-like materials that are solid wastes no matter how they are recycled. Other materials that are recycled through use or reuse of the material may qualify for exemptions from the solid waste definition under Section 261.2(e). Section 261.6 describes the regulations that apply to hazardous wastes that are recycled.

- **Inherently waste-like** - Some materials are always considered solid wastes, even if they are recycled in some manner (i.e., they are considered to be “inherently waste-like”). Because these materials may pose a threat to human health and the environment when they are recycled, they do not qualify for any recycling exemptions. Inherently waste-like materials include the chlorinated dioxin- and dibenzofuran-containing listed wastes F020, F022, F023, F026 and F028. Hazardous waste meeting the F021 listing is also considered inherently waste-like unless it is used at the site of generation as an ingredient in a product. In addition, any secondary materials that are characteristic or listed hazardous wastes are considered to be inherently waste-like when they are fed to a halogen acid furnace. This provision was added to ensure that halogen acid furnaces, which burn some of the most toxic wastes generated in this country, would be regulated when burning any type of hazardous waste.

2.1 Definition of Hazardous Waste [CHWR Section 261.3]

A solid waste is a hazardous waste if it has no commercial use or value and:

- It is not specifically excluded from regulation.
- It exhibits any of the characteristics of hazardous waste.
- It is a listed hazardous waste.

- It is a mixture of a solid waste and a hazardous waste.
- It is used oil with more than 1000 ppm total halogens.

A solid waste becomes a hazardous waste when it first meets the listing description in CHWR Part 261 Subpart D, when the waste first exhibits any of the characteristics in CHWR Part 261 Subpart C, or when a listed waste is first added to a solid waste.

2.2 Solid and Hazardous Waste Exclusions [CHWR Section 261.4(a), (b)]

Certain materials are exempt from being a solid waste and therefore cannot be a hazardous waste. Currently, there are 21 of these materials listed in CHWR Section 261.4(a). In addition, certain materials are specifically excluded from being a hazardous waste. Currently, there are 15 of these materials listed in CHWR Section 261.4(b). These exclusions are discussed in detail in Colorado's "Hazardous Waste Exclusions Guidance Document." Because some of these materials are excluded from being solid and/or hazardous wastes when they are recycled in a certain manner, those materials are also discussed in Section 4.0 of this guidance.

3.0 CLASSIFICATION OF RECYCLED MATERIALS

When a material is recycled, its regulatory classification (i.e., whether or not it is a solid waste, and potentially a regulated hazardous waste) depends on two factors: first, what type of secondary material is being recycled; and second, what type of recycling is occurring. Depending on these determinations, a waste destined for recycling may or may not be regulated under the Colorado Hazardous Waste Regulations.

3.1 Secondary Materials

Used or residual waste-like materials are called secondary materials. [TABLE 1](#) in CHWR Section 261.2(c) lists the five types of secondary materials: spent materials, sludges, by-products, commercial chemical products, and scrap metal. All waste-like materials fit into one of these five secondary material categories. Some of these secondary materials are solid wastes when recycled and some are not (FLOWCHART 3). In general, only characteristic sludges, characteristic by-products, and unused commercial chemical products are NOT solid waste when reclaimed. The rest are solid waste with the potential to be hazardous waste.

3.1.1 Spent Materials [CHWR Section 261.1(d)(1)]

Spent materials are those materials that have been used and, as a result of contamination, can no longer serve the purpose for which they were produced without undergoing regeneration, reclamation, or reprocessing. Contamination, as used in this context, includes any impurity, factor, or circumstance which causes the material to be taken out of service for reprocessing. This includes materials removed from service even though they may still have a use, but the generator decided to send the material for reprocessing instead. Examples include spent activated carbon, solvents, catalysts, and acids. All spent materials are solid wastes if reclaimed.

3.1.2 Sludges [CHWR Section 261.1(d)(2)]

A sludge is any solid, semisolid, or liquid waste generated from a wastewater treatment plant, water supply treatment plant, or air pollution control device (e.g., baghouse dust) (CHWR Section 260.10). The definition of sludge in the hazardous waste regulations is very different from common English usage, and can lead to significant misunderstanding if not used properly in determining how

a material is regulated. What is commonly considered “sludge” is actually a by-product under this definition.

TABLE 1 contains two sludge categories: those sludges listed on the F or K lists (e.g., F037 petroleum refinery oil/water/solids separation sludge), and those exhibiting a hazardous characteristic under CHWR Part 261, Subpart C. Sludges listed on the F or K lists are solid wastes if reclaimed, while those that are solely characteristic hazardous wastes are not.

3.1.3 By-products [CHWR Section 261.1(d)(3)]

By-product is a catch-all term, and includes most wastes that are not spent materials or sludges. A by-product is a material that is not intended as one of the primary products of a production process and is not solely or separately generated by the production process. It is essentially what’s left after the desired product is made. Examples of by-products include slags and distillation column bottoms and most things commonly referred to as “sludges.” There are two types of by-product categories in TABLE 1: those listed on the F or K lists (e.g., F008 plating bath residues from cyanide plating), and those exhibiting a hazardous characteristic under CHWR Part 261, Subpart C. By-products that are listed on the F or K lists are solid wastes if reclaimed, while those that are solely characteristic hazardous wastes are not.

3.1.4 Commercial Chemical Products [CHWR Section 261.33]

Commercial chemical products include unused chemical intermediates, off-specification variants, and spill or container residues (e.g., unused sodium cyanide). An intermediate is a chemical that is made during the manufacturing process that is fed directly into the next step of the process. It doesn’t necessarily need to be fed “immediately” into the manufacturing process and can even be sold to a third party, but it must be “directly” fed into the process without treatment or other processing.

The definition of commercial chemical product, which is also part of the hazardous waste identification process for P- or U-listed wastes, is expanded for the purposes of defining a material as a solid waste. For this purpose, the term commercial chemical product also includes chemicals that are not listed in Section 261.33 but exhibit a hazardous characteristic (e.g., off-specification fuel), as well as other unused commercial products that exhibit a characteristic of hazardous waste, even though they are not commonly considered chemicals (e.g. unused solar panels). Unused commercial chemical products are not solid wastes if reclaimed.

3.1.5 Scrap Metal [CHWR Section 261.1(d)(6)]

There are two regulatory categories of scrap metal: scrap metal and excluded scrap metal. Scrap metal is solid waste, but is not regulated as hazardous waste when recycled. Excluded scrap metal is not regulated as either solid or hazardous waste when recycled. Scrap metals are discussed more in section 4 of this document.

3.2 Types of Regulated Recycling [CHWR Section 261.2(c) & 261.1(d)(8)]

Recycling reduces the consumption of raw materials and energy while reducing the volume of waste that must be disposed. It may, however, include the accumulation of large quantities of material prior to processing. Improper storage of these materials may lead to spills, leaks, fires or soil and water contamination. While recycling can be beneficial, it must be conducted in a manner

protective of human health and the environment. The degree to which recycling is regulated is based on the threat it poses to human health and the environment.

There are three types of hazardous waste recycling activities that the Department currently regulates: use constituting disposal, burning waste fuels, and reclamation. In most cases, it is the recycling process that is exempt, not the waste. Therefore, most generators and transporters of recyclable materials that are solid and hazardous wastes are subject to the same regulation as other generators and transporters of hazardous waste.

3.2.1 Use Constituting Disposal [CHWR Section 261.2(c)(1)]

Directly placing wastes or products containing wastes on the land is considered to be “use constituting disposal.” Placement on the land also includes most types of placement in water. Examples include use as a fill or cover material, use for structural support, use as a soil conditioner or dust suppressant, use in a fertilizer, or use as an ingredient in asphalt or concrete.

Recyclable materials that are placed on the land either directly or after mixing with other materials are covered in CHWR Part 267 Subpart C. This type of reuse is regulated as land treatment or landfilling when the material being applied to the land is a hazardous waste or contains a hazardous waste. The Department regulates the placement of hazardous waste on the land due to the similarity of this practice to simple land disposal. Such materials would generally be solid wastes and are regulated because of their potential to contaminate soil or groundwater.

The management of recyclable materials prior to being used in a manner constituting disposal is fully regulated as hazardous waste management. Generators and transporters of these materials, therefore, are subject to Part 262 (generator) and Part 263 (transporter) regulations, and to Part 99 notification procedures. Facility owners and operators that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials are subject to the notification requirements of Part 99, the permitting requirements of Part 100, and applicable facility standards in Subparts A through L of Parts 264/265.

Owners or operators of facilities that use recyclable materials in a manner constituting disposal are subject to the notification requirements of Part 99, the permitting requirements of Part 100, land disposal restrictions of Part 268, and all applicable provisions of Subparts A through N of Parts 264/265. If a material does not meet one of the exceptions in the next paragraph, it must be managed as a hazardous waste when applied to the land, a result which effectively prohibits placement on the land in anything but a hazardous waste landfill.

Commercial hazardous waste-derived products produced for the general public’s use are not regulated as hazardous wastes when applied to the land if the recyclable materials have undergone a chemical reaction so as to be inseparable by physical means and if these products meet applicable Part 268 land disposal restrictions treatment standards for each recyclable material they contain. Examples of such products include some asphalts and cements. Commercial fertilizers produced from mixing recyclable material containing nutrients or micronutrients with other ingredients are also exempt from regulation if they meet the Part 268 land disposal treatment standards for each recyclable material they contain. Zinc-containing fertilizers produced from hazardous waste are specifically exempt from regulation as solid wastes, and thus are not required to meet Part 268 treatment standards, as long as the fertilizer does not exceed the maximum concentration levels for five heavy metals and dioxin in CHWR Section 261.4(a)(21). Finally, if direct placement of a

commercial chemical product on the land is consistent with its normal use, the material is not regulated as a solid waste. For example, heptachlor can potentially be a P-listed waste but this pesticide is not regulated as a solid waste when it is used for its intended purpose.

In addition to the above regulations on use constituting disposal, additional restrictions apply to the placement of certain hazardous wastes on the land. The Hazardous and Solid Waste Amendments of 1984 (HSWA) amended the regulations to prohibit use of waste oil, used oil, or other materials contaminated with hazardous waste for dust suppression or road treatment (CHWR Sections 267.23(b)(7)).

3.2.2 Burning Waste Fuels [CHWR Section 261.2(c)(2)]

Burning hazardous waste for energy recovery and using wastes to produce a fuel are both covered under burning waste fuels. Wastes burned as fuel would generally be solid wastes. For example, used solvents are often burned to produce heat or electricity. This activity is regulated just as any other type of hazardous waste combustion because it has the potential to release harmful constituents and is more “disposal-like” than “recycling-like.” Therefore, combustion units that burn hazardous waste for energy recovery are required to have a permit and meet the standards for boilers and industrial furnaces. CHWR Part 267 Subpart D includes Colorado’s rules for burning waste fuels.

Generators and transporters of hazardous waste fuel are subject to the requirements in CHWR Part 262 (generators) and Part 263 (transporters). Marketers and burners of hazardous waste fuels must notify the Department under Part 99 for their hazardous waste fuel activities, even if they have already notified the Department of their other hazardous waste management activities. They are also subject to the accumulation time limits of Section 262.34, the applicable storage requirements of Subparts A through L of Parts 264/265, the financial assurance requirements of Part 266 and the permit requirements of Part 100. Marketers who ship hazardous waste fuel are subject to the standards for generators of hazardous waste in Part 262. There are also specific notification and recordkeeping requirements in Section 267.34.

Commercial chemical products that are themselves fuels are not considered solid wastes when burned, however, since burning is consistent with the product's intended use. For example, condensate cleaned from natural gas transmission pipelines is not solid waste when it is burned for energy recovery because it is considered off-specification fuel and is itself a fuel.

3.2.3 Reclamation [CHWR Section 261.2(c)(3)]

Reclamation is the regeneration of wastes or recovery of usable materials from wastes (e.g., regenerating spent solvents in a solvent still). Reclamation is, by definition, treatment. CHWR Section 260.10 defines treatment as “any method, technique, or process ... designed to change the physical, chemical, or biological character or composition of a hazardous waste.” Reclamation includes such activities as dewatering, ion exchange, distillation, and smelting. Because Colorado wants to encourage environmentally sound recycling activities, the state hazardous waste regulations contain regulatory reliefs for many types of reclamation activities.

Wastes are regenerated when they are processed to remove contaminants in a way that restores them to their usable condition. Many reclaimed wastes are regulated as solid wastes, though there are exceptions. Sludges and by-products exhibiting a characteristic of hazardous waste and unused commercial chemical products are not solid waste if they are reclaimed. These materials, however,

may not be placed on the land in a manner that constitutes disposal, burned for energy recovery, or accumulated speculatively. (FLOWCHART 3)

3.2.4 Speculative Accumulation [CHWR Section 261.1(d)(8)]

Certain materials are exempt from the definition of solid waste in Section 261.2 when destined for recycling. In order to ensure these materials are actually recycled, a provision was established in Section 261.2 which increases regulation of facilities that recycle insufficient amounts of these materials. This provision designates as solid wastes certain materials that are accumulated speculatively. A material is accumulated speculatively if it has no viable market or if the person accumulating the material cannot demonstrate that 75 percent or more of the material is recycled in a calendar year, commencing on January 1. For example, on December 15, 2008 a facility generates 200 kg of D008 sludge, a characteristic sludge which is normally excluded from the definition of solid waste when reclaimed. The facility has this entire quantity of D008 sludge in storage onsite on January 1, 2009. If by the end of that calendar year (December 31, 2009), less than 75 percent (i.e., less than 150 kg) of the sludge has been reclaimed or sent offsite for reclamation, the sludge has been accumulated speculatively and is no longer excluded from the definition of solid waste. Since it is a solid waste, it must now be managed as a hazardous waste because it exhibits a characteristic. In other words, while providing incentives for recycling by excluding certain hazardous wastes from the definition of solid waste, the regulations ensure that the wastes are being legitimately recycled rather than simply being stored to avoid regulation.

4.0 MATERIALS SUBJECT TO REDUCED REQUIREMENTS WHEN RECYCLED

4.1 Materials That are not Solid Waste When Recycled [CHWR Section 261.2(e)(1)]

Recycling is broadly defined under the hazardous waste regulations. Use constituting disposal, burning for energy recovery, and reclamation are all forms of recycling. The direct use or reuse of a secondary material is also a form of recycling. Section 261.2(e)(1) provides exclusions from the definition of solid waste for materials that are used or reused in one of the following ways:

- Used or reused as an ingredient.
- Used or reused as a product substitute.
- Returned as-is to the production process where they were generated.

4.1.1 Used or Reused as an Ingredient

If a secondary material is directly used as an ingredient in a production process without first being reclaimed (e.g., carbon tetrachloride still bottoms used in producing tetrachloroethylene or bottom ash used as an ingredient in cement), then that material is exempt from hazardous waste management.

4.1.2 Used or Reused as a Product Substitute

If a secondary material is used as an effective substitute for a commercial product without first being reclaimed (e.g., hydrochloric acid by-product from chemical manufacturing used by the steel industry for pickling steel), it is exempt from hazardous waste management. In applying this exclusion, it is important to have sufficient information to show that the secondary material is as effective as the commercial product it is replacing. Effectiveness of the material may be judged on efficiency of using the material (e.g., time to do the job or volume used) and on whether there are deleterious effects on quality caused by its use. The person using the secondary material should be

able to provide a description of the product specifications for the commercial product for which the secondary material is being substituted.

4.1.3 Returned to the Production Process

When a material is returned as-is to the original production process from which it was generated, it is exempt from hazardous waste management. When this exclusion was originally adopted, it applied only to materials returned to a primary production process. This was later modified to include materials returned to secondary processes. This exclusion only applies if the material is used as a raw material or feedstock in the production process and if it is not reclaimed prior to its reintroduction into the system (e.g., emission control dust returned directly to a primary zinc smelting furnace). The material does not have to be returned to the exact unit, but may be returned to any unit associated with the production of a particular product. In the case where the original process to which the material is returned is a secondary process, the material must be managed such that there is no placement on the land.

4.14 Exceptions

There are situations where use or reuse of a material without prior reclamation is still considered to be management of a solid waste. CHWR Section 261.2(e)(2) designates as solid wastes the following materials, even if they are used or reused directly: materials used in a manner constituting disposal or used to produce products that are applied to the land; materials burned for energy recovery, used to produce a fuel, or contained in fuels; materials accumulated speculatively; and dioxin-containing wastes considered inherently waste-like (F020, F021, F022, F023, F026, and F028). For example, an F002 spent solvent is used without prior reclamation in the formulation of a pesticide that is applied to soils. While this particular waste is recycled without reclamation (a condition of CHWR Section 261.2(e)(1)), it would not qualify for this exclusion because the manner in which it is recycled is one of the activities listed in CHWR Section 261.2(e)(2), and this use is not consistent with its normal use. CHWR Part 267 provides some regulatory relief, however, as discussed in the following section.

4.2 Materials That are Solid Waste Even if Recycled [CHWR Section 261.6(a)(2)]

Most recyclable materials are subject to the requirements for generators, transporters, and storage facilities except for the recyclable materials listed in CHWR Section 261.6(a)(2). These specific recyclable materials are subject to CHWR Part 267 and the permitting requirements of Part 100. Part 267 of the Colorado regulations provide special standards for hazardous wastes recycled in certain ways. (FLOWCHART 4B) These materials include:

- Recyclable materials used in a manner constituting disposal.
- Hazardous waste burned for energy recovery.
- Recyclable materials from which precious metals are reclaimed.
- Spent lead-acid batteries that are being reclaimed.

Used in a manner constituting disposal and hazardous waste burned for energy recovery were previously discussed in section 3.2 of this guidance.

4.2.1 Precious Metal Reclamation [CHWR Part 267 Subpart F]

Part 267 Subpart F applies to recyclable materials from which precious metals are recovered (i.e., gold, silver, platinum, palladium, iridium, osmium, rhodium, and/or ruthenium). Generators,

transporters, and storers of recyclable materials intended for precious metal recovery are subject to notification under CHWR Part 99 and manifest requirements under Part 262, Subpart B (for generators), Part 263 (for transporters), and Sections 265.71 and 265.72 (for storers), but these wastes are not counted when making a monthly generator category determination. While hazardous wastes that will be reclaimed for their precious metal content are exempt from much of the hazardous waste regulations, these materials lose any applicable exemptions if they are accumulated speculatively and become subject to all applicable requirements under CHWR Parts 262 and 264/265. The provisions barring speculative accumulation are set out in CHWR Section 267.70(c). To document that speculative accumulation is not occurring, generators must keep records showing the volume of materials on hand at the beginning of the calendar year (commencing on January 1), the amount of materials generated or received during the calendar year, and the amount of waste remaining at the end of the calendar year. The generator must be able to demonstrate that the amount of material that is recycled, or sent offsite for recycling, equals at least 75% by weight or volume of the amount of that material accumulated at the beginning of the calendar year.

Although the storage of recyclable materials that will be reclaimed for their precious metal content is not subject to full hazardous waste regulation, the Department may regulate the accumulation and storage of precious metal wastes on a case-by-case basis under CHWR Sections 260.40 and 260.41 if the wastes are not being stored safely. This case-by-case regulation subjects the generator, storer, or recycler to CHWR Sections 261.6(b) and (c) (full regulation) rather than Part 267 Subpart F.

4.2.2 Spent Lead-Acid Battery Reclamation [CHWR Part 267 Subpart G]

Part 267 Subpart G covers spent lead-acid batteries that will be reclaimed. These provisions apply only to spent lead-acid batteries and focus on storage of the batteries by persons who reclaim the batteries. Persons who generate, transport, regenerate, collect, and/or store spent lead-acid batteries, but are not the one who reclaims them, are not subject to hazardous waste regulation as long as the batteries are actually recycled. According to CHWR Section 267.80(b), owners or operators of facilities that store spent batteries before reclaiming them are subject to certain requirements. Storers must comply with Part 99 notification and all applicable provisions in Parts 264/265, Subparts A through L. The only exceptions are the waste analysis plan and use of the manifest requirements. The permitting requirements of Part 100 and the financial assurance provisions of Part 266 also apply.

4.3 Materials That are not Hazardous Waste When Recycled [CHWR Section 261.6(a)(3), (4)]

Certain recyclable materials are exempt from regulation as hazardous waste when recycled in specific ways. All of these materials meet the definition of a solid waste and hazardous waste, but are exempt from the notification requirements of Part 99, Parts 262 through 268, and Part 100 if recycled according to the provisions in this section. (FLOWCHART 4C)

4.3.1 Industrial Ethyl Alcohol

Industrial ethyl alcohol that is reclaimed is exempted from hazardous waste regulation because the Bureau of Alcohol, Tobacco and Firearms already regulates it from the point of generation to re-distillation.

4.3.2 Scrap Metal

As discussed in Section 3.1.5, there are two regulatory categories of scrap metal – scrap metal and excluded scrap metal (discussed in Section 4.4.10 of this document). Scrap metal is defined as bits and pieces of metal parts that are worn or superfluous (e.g., scrap turnings and wire) (CHWR 261.1(d)). This term may also include products made of metal that become worn out such as whole circuit boards (free of mercury switches, mercury relays and batteries), sheets of metal, lead shielding, and scrap radiators. It does not include other types of wastes that contain metals, like sludges or used solvents. Scrap metal is a solid waste under the definition of hazardous waste, but when these materials are recycled to recover their metal content, they are exempted from hazardous waste regulation.

4.3.3 Waste-Derived Fuels From Refining Processes

Fuels produced by refining oil-bearing hazardous wastes along with normal process streams at a petroleum refining facility are exempt if such wastes resulted from normal petroleum refining, production, and transportation practices. For these wastes to be considered to be "refined," they must be inserted into a part of the process designed to remove contaminants; this would typically mean insertion prior to distillation. Consequently, if a facility takes an oil-bearing hazardous waste and processes it without distillation to produce a fuel, the resulting fuel is not covered by this exemption, but may be covered by the exemption in the following section.

4.3.4 Waste-Derived Fuels and Oils That are not Refined

Fuels produced at a petroleum refinery from oil-bearing hazardous wastes that are introduced into the refining process after the distillation step, or that are reintroduced in a process that does not include distillation, may be exempt under CHWR Section 261.6(a)(3)(iv). Since these hazardous wastes do not undergo a distillation step that would ensure contaminant removal, the resulting fuel must meet the used oil specifications in Part 279 to fall within this exemption. Oil that is reclaimed from oil-bearing hazardous wastes generated by petroleum refining, production, and transportation practices is also exempt. This exemption applies to oil that is burned as a fuel without reintroduction into the refining process, provided it meets the used oil specifications in Part 279.

4.3.5 Used Oil

Used oil that is recycled and that may be a hazardous waste solely because it exhibits a hazardous waste characteristic is regulated under the used oil management standards in Part 279. This includes used oil that is re-refined, reclaimed, burned for energy recovery, or reprocessed. Refer to "Management Standards for Used Oil Generators Guidance Document" for more information.

4.4 Materials That are not Solid or Hazardous Waste When Recycled [CHWR Section 261.4(a)(7)-(21) & 261.4(b)(12), (14)]

A number of wastes are specifically excluded from hazardous waste regulation if they are recycled in a certain manner. These materials are exempt from the notification requirements of Part 99, Parts 262 through 268, and Part 100 as long as all of the requirements of the exclusion are met. (FLOWCHART 4A)

4.4.1 Pulping Liquors

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 from hazardous waste management. They are not covered by this exclusion if they are reclaimed in any other manner or if they are accumulated speculatively.

4.4.2 Reclamation in Enclosed Tanks

This exclusion, 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. These secondary materials are excluded from hazardous waste management if they are reclaimed and returned to the original process(es) provided:

- Only tank storage is involved and the entire process, through the completion of reclamation, is a closed system by being entirely connected with pipes or other comparable enclosed means of conveyance (i.e., the process does not require any human intervention to occur).
- Reclamation does not involve incineration or other controlled-flame combustion (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.

This narrow exclusion applies only to reclaiming activities that are an integral part of an ongoing production process (i.e., those that produce a product). Support processes (e.g., solvent parts washer used to clean production equipment parts) are not covered under this exclusion.

4.4.3 Spent Sulfuric Acid

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 hazardous waste management unless accumulated speculatively. Spent sulfuric acid that is not recycled in this manner may still be excluded from being a regulated waste, however, if it is used or reused as an ingredient or as a product substitute.

4.4.4 Spent Wood Preservatives

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. Because the use of drip pads will not allow this reclamation process to fit the closed-loop exclusion, a separate exclusion was developed for reclaimed spent wood preserving solutions and wastewaters containing spent preservative that are reused for their original purpose. 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. These materials must be managed to prevent releases and the drip pads that collect wood preserving solutions must meet hazardous waste design and operating requirements. Prior to using this exclusion, the facility owner or operator must prepare a one-time notification stating that the facility intends to claim this exclusion. A copy of this document must be maintained in the facility's onsite records until closure of the facility.

4.4.5 Coke By-Product Wastes

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, 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 waste streams.

An exclusion was granted from hazardous waste management for K060, K087, K141, K142, K143, K144, K145, K147, and K148 listed wastes, and any other waste coke by-product wastes which exhibit the toxicity characteristic, if they are recycled in one of the following ways:

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

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. The decision to exclude coke by-product wastes was based on the fact that recycling these wastes does not have a significant effect on the chemical composition of the final products. Further, coke by-product residues are often managed as raw materials rather than wastes because the material has an intrinsic value that promotes its safe management, thereby reducing the risk posed to human health and the environment.

4.4.6 Splash Condenser Dross Residue

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 process, known as splash condenser dross residue. This splash condenser dross residue is typically considered a partially reclaimed secondary material because it contains 50 to 60 percent zinc. Splash condenser dross residue is commonly sent offsite for further reclamation, reused onsite in the high temperature metal recovery process, or reprocessed by the high temperature metal recovery process onsite. The splash condenser dross residue material generated by certain high temperature metal recovery processes does not pose a significant threat to human health and the environment as managed currently and therefore is exempted from hazardous waste regulation. The splash condenser dross residue exclusion applies when the material is used as a source of zinc in zinc recovery operations, provided it is shipped in drums (if sent offsite) and not disposed of on the land at any point prior to further recovery.

4.4.7 Recovered Oil From Petroleum Operations

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. In order to promote recycling of these materials, an exclusion was made 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 and K169-K170), when these materials are reinserted into the petroleum refining process. These secondary materials can be recycled in an onsite refining process or can be sent directly to an offsite petroleum refining facility to be reinserted back into the refining

process. Secondary materials that are excluded from hazardous waste management 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 another listing description, are considered to be F037 listed wastes if intended for, or sent for, disposal.

In addition to the exclusion for secondary materials generated by and recycled within petroleum refineries, oil recovered from secondary materials that are generated within the broader petroleum industry (not just refineries), may be excluded from the definition of solid waste as recovered oil. Recovered oil is a generic term that refers to secondary materials that are primarily oil and that are recovered from secondary materials generated during any phase of petroleum exploration, production, refining, and related transportation (SIC codes 1311, 1321, 1381, 1382, 1389, 2911, 4612, 4613, 4922, 4923, 4789, 5171, and 5172). This includes oil/water separator skimmings from facility wastewaters, slop oil and emulsions, oil skimmed from ballast water tanks, oil from refinery process units, oil recovered from oil and gas drilling operations, and oil recovered from wastes removed from crude oil storage tanks. It does not include listed oil-bearing hazardous wastes (i.e., F037, F038, K048-K052 and K169-K172). This exclusion from the definition of solid waste applies to recovered oil that is inserted into a 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. The exclusion does not apply to water-in-oil emulsions before the oils are recovered or to used oil as defined in the used oil management standards of CHWR Part 279. The original exclusion required the placement of the recovered oil back into the process at a point prior to distillation or catalytic cracking. This exclusion has since been amended 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."

4.4.8 Recovered Oil From Petrochemical Facilities

Under certain conditions, petroleum recovered oil generated at an associated organic chemical manufacturing facility is excluded from the definition of solid waste if the oil is inserted into the petroleum refining process along with normal petroleum refinery process streams. Recovered oil that is hazardous only because it exhibits the characteristic of ignitability and/or the toxicity characteristic for benzene is eligible for this exclusion. The recovered oil must not be speculatively accumulated or placed on the land prior to recycling into the petroleum refining process.

An "associated" organic chemical manufacturing facility is physically co-located with the refinery that provides hydrocarbon feedstocks to the manufacturing facility and recycles its recovered oil. "Petroleum recovered oil" includes secondary materials (like sludges, by-products, or spent materials), that are primarily oil, and that are generated from normal organic chemical manufacturing operations.

4.4.9 Spent Caustic Solutions From Petroleum Refining

Spent caustic solutions from petroleum refining liquid treating processes are excluded from hazardous waste management if they are used as a feedstock to produce cresylic or naphthenic acid. The spent caustics must not be placed on the land or speculatively accumulated prior to use as a feedstock.

4.4.10 Excluded Scrap Metal

As discussed in Section 3.1.5, there are two regulatory categories of scrap metal – scrap metal (discussed in section 4.3.2 of this document) and excluded scrap metal. Excluded scrap metal includes processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal. 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 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.

Excluded scrap metal being recycled is distinct from other secondary materials defined as wastes when recycled because of the established markets for the materials use, inherent positive economic value of the material, the physical form of the material, and the absence of damage incidents attributed to the material. This category of scrap metal is excluded from regulation as a solid or hazardous waste when recycled (CHWR Section 261.4(a)(14)).

4.4.11 Shredded Circuit Boards

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, and batteries. Shredded circuit boards that are not free of these materials are solid wastes (spent materials) when reclaimed. Shredded circuit boards are not considered to be scrap metal because the process of shredding the boards produces small pieces from the board that do not meet the regulatory definition of scrap metal. However, shredding is a common industry practice and is beneficial to the recovery process. This exclusion is justified because of the positive economic value and marketability of the shredded material, as long as they are managed in a manner that minimizes environmental risk. Whole circuit boards meet the definition of scrap metal and are also exempt from regulation when recycled.

4.4.12 Mineral Processing Secondary Materials

All extraction and beneficiation wastes and 20 specific mineral-processing wastes are exempt from hazardous waste regulation in CHWR Section 261.4(b)(7). However, other mineral-processing wastes are potentially regulated as hazardous wastes if they exhibit a hazardous waste characteristic. Spent materials generated within the primary mineral processing industry (other than hazardous wastes listed in Subpart D of CHWR Part 261) are excluded from hazardous waste management if they are reclaimed within the mineral-processing industry and as long as the spent material is legitimately recycled to recover minerals, acids, cyanide, water or other valuable materials, is not accumulated speculatively, and the materials are stored in an appropriate tank, container or building prior to reclamation. The owner or operator must notify the Department of these activities and if there is a change in the type of materials recycled or the location of the recycling process.

4.4.13 Secondary Materials Used to Make Zinc Fertilizer

Certain hazardous secondary materials are excluded from hazardous waste management if they are used to make zinc micronutrient fertilizers. Generators, intermediate handlers and fertilizer manufacturers must store the excluded secondary materials in tanks, containers or buildings

designed to prevent releases to the environment. Each facility must submit a one-time notice to the Department of their activities and maintain shipment records for at least three years. In addition, generators and intermediate handlers must provide written notice with each shipment to the receiving facility that the secondary materials are being managed under this exclusion. Fertilizer manufacturers must submit an annual report to the Department regarding all excluded hazardous material used to manufacture zinc fertilizer or zinc fertilizer ingredients that year. Hazardous secondary materials used to make zinc fertilizers must not be speculatively accumulated. Zinc fertilizers made from hazardous waste are also excluded from the definition of solid waste as long as the conditions of CHWR Section 261.4(a)(21) are met.

4.4.14 Used Chlorofluorocarbon Refrigerants (CFC)

Chlorofluorocarbons (CFCs) released to the atmosphere damage the ozone layer. To decrease the practice of venting used CFCs into the atmosphere in order to avoid regulation as hazardous waste, an exclusion of the toxicity characteristic rule to certain CFCs was made. These include used CFCs from totally enclosed heat transfer equipment including mobile air conditioning systems, mobile refrigeration, and commercial and industrial air conditioning and refrigeration systems that use CFCs as the heat transfer fluid in a refrigeration cycle. This exclusion only applies to CFCs which exhibit the toxicity characteristic for one or more of the 25 new TCLP organic constituents (D018-D043), and only when the CFCs are reclaimed for reuse. It does not include CFCs used as solvents.

An example of this exclusion would be refrigerants containing CFC-11 that are likely to exhibit the toxicity characteristic for carbon tetrachloride or chloroform. If the spent refrigerants exhibited the toxicity characteristic for mercury (D009), a previously identified hazardous waste, they would be regulated as a hazardous waste. If the refrigerants failed the TCLP only for carbon tetrachloride (D019) or chloroform (D020), they would not be subject to hazardous waste regulations, as long as the refrigerants were being sent for reclamation.

Used oil includes heat transfer fluids such as refrigeration oils, which are sometimes contaminated with minor amounts of CFCs. Used oil contaminated with CFCs is not hazardous wastes if managed under the used oil management standards of CHWR Part 279. To be exempt from the rebuttable presumption, the used oil cannot be mixed with used oil from sources other than refrigeration units (CHWR Section 279.10 (b)(1)(ii)(B)).

4.4.15 Used Oil Re-Refining Distillation Bottoms

Used oil re-refining distillation bottoms are excluded from being hazardous waste when the bottoms are used as feedstock to manufacture asphalt paving and roofing materials. The 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.

4.5 Management Standards for Universal Waste [CHWR Section 261.9]

The Universal Waste Rule in CHWR Part 273 streamlined the collection of certain hazardous wastes and was designed to discourage illegal disposal while encouraging recycling by allowing a longer accumulation time and greater accumulation limits to make it more economic to recycle. Hazardous waste batteries, pesticides, mercury-containing devices, electronic devices and components, mercury-containing lighting wastes, and aerosol cans containing hazardous wastes are included in CHWR Part 273. The universal waste rule provides an alternative set of management

standards for these wastes in lieu of full regulation under CHWR Parts 260-268, 99 and 100. It is important to understand that universal wastes are still hazardous wastes. If these materials are not managed in accordance with all of the requirements in CHWR Part 273, they remain subject to full regulation under CHWR Parts 260-268, 99 and 100. Refer to the Universal Waste Compliance Bulletin (www.cdphe.state.co.us/hm/uwrgeneral.pdf) for information on the universal waste management standards.

4.6 Documentation of Claims [CHWR Section 261.2(f)]

A facility owner or operator claiming that a waste is not a solid waste or that a waste is conditionally exempt from regulation must be prepared to demonstrate that the conditions for the exclusion are being met and that the material is being legitimately recycled. They must provide appropriate documentation showing there is a known market or disposition for the material and that the material is being used. This could include such things as contracts showing that a second person uses the material in a legitimate manner. If they are the one conducting the recycling activity, they must show that they have the necessary equipment to do so. See Section 6.0 of this document for more information on legitimate recycling.

4.7 Variances, Non-waste Confirmations and De-listing [CHWR Part 260 Subpart C]

For materials that clearly do not meet any of the regulatory exclusions or partial exemptions included in the hazardous waste regulations, a facility owner or operator may request a variance from classification as solid waste from the Department. The Department may determine on a case-by-case basis that materials that are accumulated speculatively without sufficient amounts being recycled each year, materials that are reclaimed and then reused as feedstock within the original production process in which they were generated, or materials that have been partially reclaimed but must be reclaimed further before the materials are completely recovered are not solid waste based on specific criteria outlined in the regulations. The facility owner or operator must provide sufficient information to show that their waste meets the regulatory criteria in CHWR Section 260.31 in order to obtain a variance.

The hazardous waste regulations provide many exclusions and partial exemptions from regulation for specific wastes and/or if certain conditions are met. These exemptions are meant to be self-implementing, but there may be gray areas where it is not obvious if a particular waste does or does not meet an exemption. Previously, a facility owner or operator could ask the Department for informal assistance in making the determination if their waste met one of the exclusions or exemptions, or they could make the determination on their own while maintaining adequate documentation showing that their waste met the terms of the exclusion or exemption. Though these informal options are still available, a more formal non-waste confirmation process was recently added to the Colorado Hazardous Waste Regulations to provide an administrative process for receiving a written confirmation from the Department that a material is not discarded and therefore, not solid waste when legitimately reclaimed. Explicit criteria to be used as the basis for these determinations were also added to support both the self-determination and formal non-waste confirmation processes. The non-waste confirmation process is voluntary, but it can provide regulatory certainty for both the facility and the Department in cases where there is ambiguity about the status of a particular waste.

In cases where a variance or non-waste confirmation are not applicable, a facility owner or operator may petition the Colorado Solid and Hazardous Waste Commission to exclude or “de-list” a waste or waste-derived material at a particular facility from being defined as a hazardous waste by

demonstrating to the satisfaction of the Commission that their waste doesn't meet any of the criteria under which the waste was listed as a hazardous waste (CHWR Section 260.22). This can be accomplished by demonstrating that their waste doesn't exhibit the relevant characteristic for which the waste was listed, that it doesn't contain the relevant constituent(s) that caused the waste to be listed, or that it doesn't fit any of the criteria used for identifying hazardous wastes.

5.0 MANAGEMENT REQUIREMENTS FOR RECYCLABLE MATERIALS [CHWR SECTION 261.6(B), (C), (D)]

Hazardous wastes that are recycled are known as recyclable materials. When a material is classified as a solid waste and a hazardous waste, but does not qualify for any of the exemptions previously discussed, CHWR Section 261.6 (b), (c), and (d) are used to determine the level of regulation placed on the waste and the recycling activity.

5.1 Management Requirements for Generators and Transporters

Generators and transporters of recyclable materials that are solid and hazardous wastes are subject to the same regulations as other generators and transporters of hazardous waste. Generators of recyclable materials are required to follow all the applicable requirements of Part 262. For example, spent materials that are a hazardous waste and which are accumulated onsite prior to being shipped offsite for reclamation must be managed as a hazardous waste in accordance with the generator requirements of CHWR Part 262. Likewise, transporters of recyclable materials must comply with Part 263 standards. Therefore, spent materials that are a hazardous waste must be shipped to the recycling facility with a hazardous waste manifest. Both generators and transporters of recyclable materials are subject to the notification requirements of Part 99.

Recyclable hazardous wastes that are accumulated prior to onsite reclamation must also be managed as hazardous wastes in accordance with the generator requirements. This means that recyclable materials stored prior to placement in an onsite recycling unit must be managed as any other hazardous waste accumulation tank or container, including labeling and accumulation limits.

While generation and storage of a recyclable hazardous waste is regulated, the recycling process itself is generally exempt from hazardous waste regulation. If the recyclable material is not stored before recycling and is put immediately into the recycling unit, it is not necessary to manage the recycling unit under the generator requirements. Typically, this is only allowed when the recycling unit is a tank or tank system, however. Colorado interprets "immediately" in this case to mean within 24 hours of generation.

5.2 Management Requirements for Treatment, Storage, and Disposal Facilities

Owners or operators of facilities that store hazardous materials prior to recycling are subject to all of the requirements of treatment, storage, and disposal facilities (TSDF). In other words, storage is fully regulated and requires a permit or interim status. An important component to CHWR Section 261.6(c) is that while storage of a hazardous waste is regulated, the recycling process itself is generally exempt from hazardous waste regulation, including permitting requirements. The one exception is that the unit may have to comply with some air emission regulations if located at a permitted or interim status treatment, storage, or disposal facility. Parts 264/265, Subparts AA and BB require air emission controls for specific units that manage waste with a minimum organic content. If recycling units meet these criteria, the units would need to comply with the appropriate

regulations. In addition, other federal or state environmental laws or regulations may be applicable. The Subpart CC air emissions standards do not apply to recycling units.

If the recyclable material is not stored before recycling but put immediately into the recycling unit, a storage permit or interim status is not necessary. Typically, this is only allowed when the recycling unit is a tank or tank system. Colorado interprets "immediately" to mean within 24 hours in this case.

Owners or operators of facilities that recycle recyclable materials must obtain an EPA ID number by notifying the Department of their activity in compliance with Part 99, comply with the use of the hazardous waste manifest when receiving shipments of recyclable materials from offsite under CHWR Sections 265.71-265.72 and, if they have permitted hazardous waste management units that recycle hazardous waste, they must comply with subparts AA & BB of Parts 264/265.

6.0 LEGITIMATE RECYCLING [CHWR SECTION 261.2(F)]

For all recycling activities, the premise is that legitimate reclamation or reuse is taking place. To encourage recycling, the Colorado Hazardous Waste Regulations provide reduced requirements for these activities. Because there are significant economic incentives to manage hazardous materials outside of the hazardous waste regulatory system, there is a potential for some handlers to claim that they are recycling, when in fact, they are conducting waste treatment, storage and/or disposal in the guise of recycling.

Previously, the Department followed guidelines established by US EPA for what constituted legitimate recycling versus activities considered to be "sham recycling." Recently, amendments were made to the Colorado Hazardous Waste Regulations to formalize the criteria used to determine if legitimate recycling is occurring. The four general criteria are: 1) the material provides a useful contribution to the recycling process or to a product or intermediate of the recycling process, and the recycling process produces a valuable product or intermediate; 2) the recycling process yields a valuable product or intermediate that is sold to a third party or is used by the recycler or the generator as an effective substitute for a commercial product or as a useful ingredient or intermediate that is fed directly into a manufacturing process; 3) the material to be recycled is managed as a valuable commodity; and 4) the product of the recycling process does not contain significant concentrations of any hazardous constituents that are not found in analogous products, does not contain significantly elevated levels of any hazardous constituents that are found in analogous products and does not exhibit a hazardous waste characteristic that analogous products do not exhibit.

Although the Department expects that most, if not all, legitimate recycling practices will conform to each of the four criteria, the application of the criteria will require some subjective evaluation. If the Department determines that a process is not legitimate recycling, the activity would be considered waste treatment or disposal subject to regulation under the hazardous waste regulations. The recycler and generator(s) of the recycled material could therefore be subject to enforcement action.

If the Department determines that a particular facility warrants greater oversight of their recycling operations even though the scope of their activities is normally considered legitimate recycling, the Department may make that facility subject to additional portions of the generator, transporter, storage, financial assurance, land disposal, notification and permitting regulations (CHWR 260.40).

This could occur if the facility is not accumulating or storing the material to be recycled in a manner that is protective of human health and the environment.

7.0 SPECIAL ISSUE

7.1 Derived-From Residues

The recycler becomes the generator of a new waste if they generate ion exchange columns, filters or other residues as a result of their recycling activities. They are then responsible for making a hazardous waste determination on these new wastes. Because of the derived-from rule, residues from recycling activities involving listed hazardous wastes are themselves listed hazardous wastes even though the materials that are reclaimed may no longer be regulated as solid or hazardous waste. Residues from recycling any hazardous waste are hazardous waste if the residue exhibits one or more characteristics of hazardous waste. For example, it is possible for heavy metals to accumulate in distillation bottoms, filters or other residues in sufficient quantities to cause these wastes to exhibit a toxicity characteristic. Even if the recycling residue is not regulated as a hazardous waste, all land disposal restrictions that applied to the original waste carry through to the residue.

8.0 CONTACT INFORMATION

24-hour Emergency Spill/Release Reporting Line (toll-free)..... (877) 518-5608
Hazardous Materials and Waste Management Division (303) 692-3300
 Division (toll-free outside 303 area code).....(888) 569-1831
 Customer Technical Assistance Line(303) 692-3320
 Customer Technical Assistance Line toll-free (888) 569-1831 ext. 3320
 For an EPA I.D. Number (303) 692-3360
Pollution Prevention Program(303) 692-2977

National Response Center.....(800) 424-8802

Send Questions in Writing to:

Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530
 OR
FAX (303) 759-5355
 OR
Email address: **comments.hmwmd@state.co.us**

Please provide as much detail as possible regarding your question and the waste or process to which it applies.

Web Sites:

Hazardous Materials & Waste Management Division
www.colorado.gov/cdphe/hm

Colorado Department of Public Health and Environment
www.colorado.gov/cdphe

CHWR SECTION 261.2 TABLE 1 MATERIALS THAT ARE SOLID WASTE IF RECYCLED

	Use Constituting Disposal §261.2(c)(1)	Energy Recovery/ Fuel §261.2(c)(2)	Reclamation §261.2(c)(3)	Speculative Accumulation §261.2(c)(4)
Spent Materials	YES	YES	YES	YES
Sludges listed in CHWR §§261.31 or 261.32	YES	YES	YES	YES
Sludges exhibiting a characteristic	YES	YES	NO	YES
By-products listed in CHWR §§261.31 or 261.32	YES	YES	YES	YES
By-products exhibiting a characteristic	YES	YES	NO	YES
Commercial Chemical Products listed in CHWR §261.33	YES*	YES**	NO	NO
Scrap Metal other than excluded scrap metal (see CHWR §261.1(d)(9))	YES	YES	YES	YES

Once the type of secondary material and the recycling method are known, you can determine whether the material will be a solid waste according to CHWR Section 261.2(c) and therefore possibly a hazardous waste. Materials that are solid wastes when recycled in a particular manner are marked with a “YES” in that column; materials that are not solid wastes when recycled in that manner are marked with a “NO.”

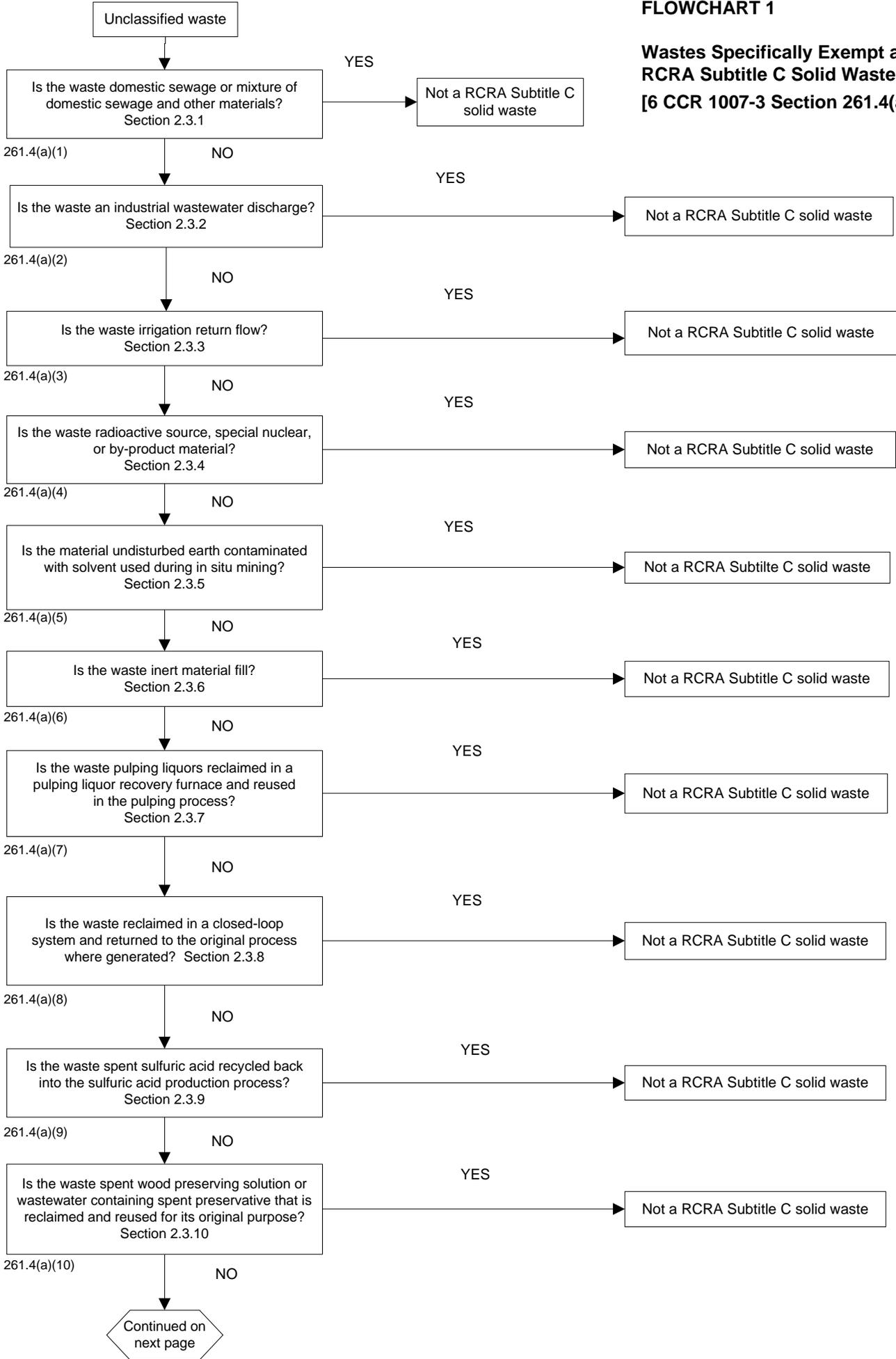
* Commercial products are not solid wastes when applied to the land if that is their normal use.

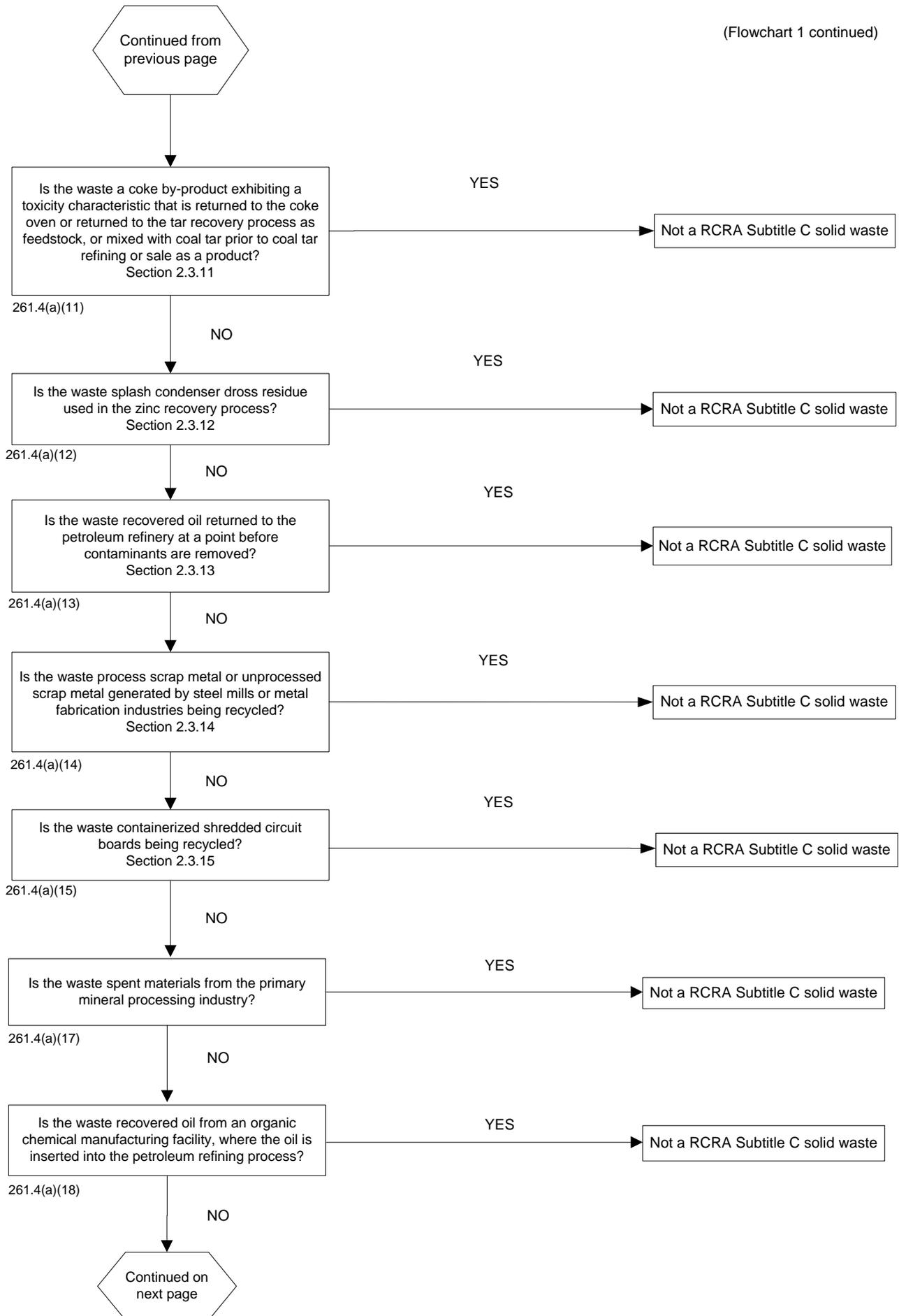
** Commercial products are not solid wastes when burned for energy recovery if they are already fuels or normal constituents of fuels.

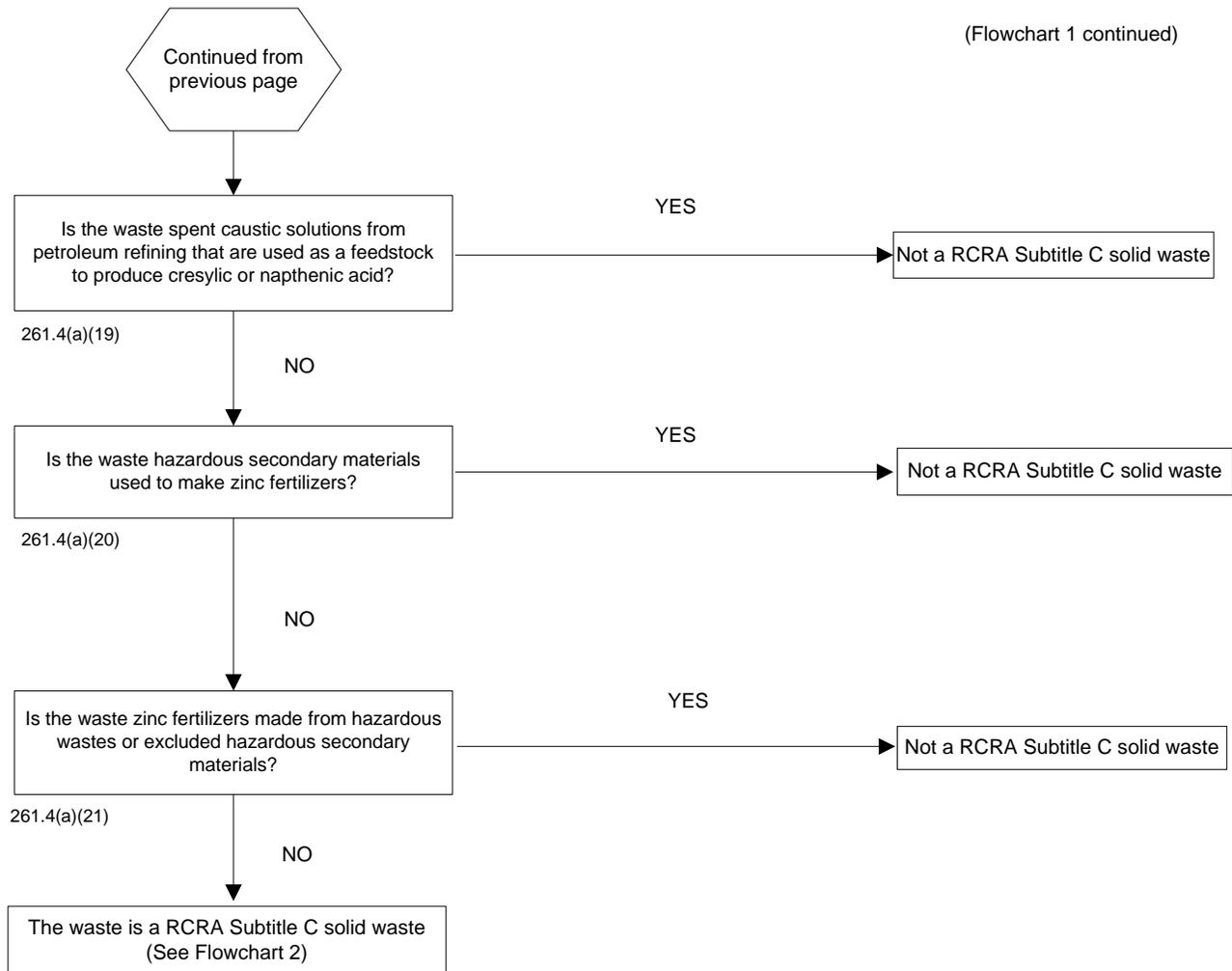
[\(Back to Section 3.0\)](#)

FLOWCHART 1

Wastes Specifically Exempt as RCRA Subtitle C Solid Wastes [6 CCR 1007-3 Section 261.4(a)]







Key

Is the waste an industrial wastewater discharge?
Section 2.3.2

261.4(a)(2)

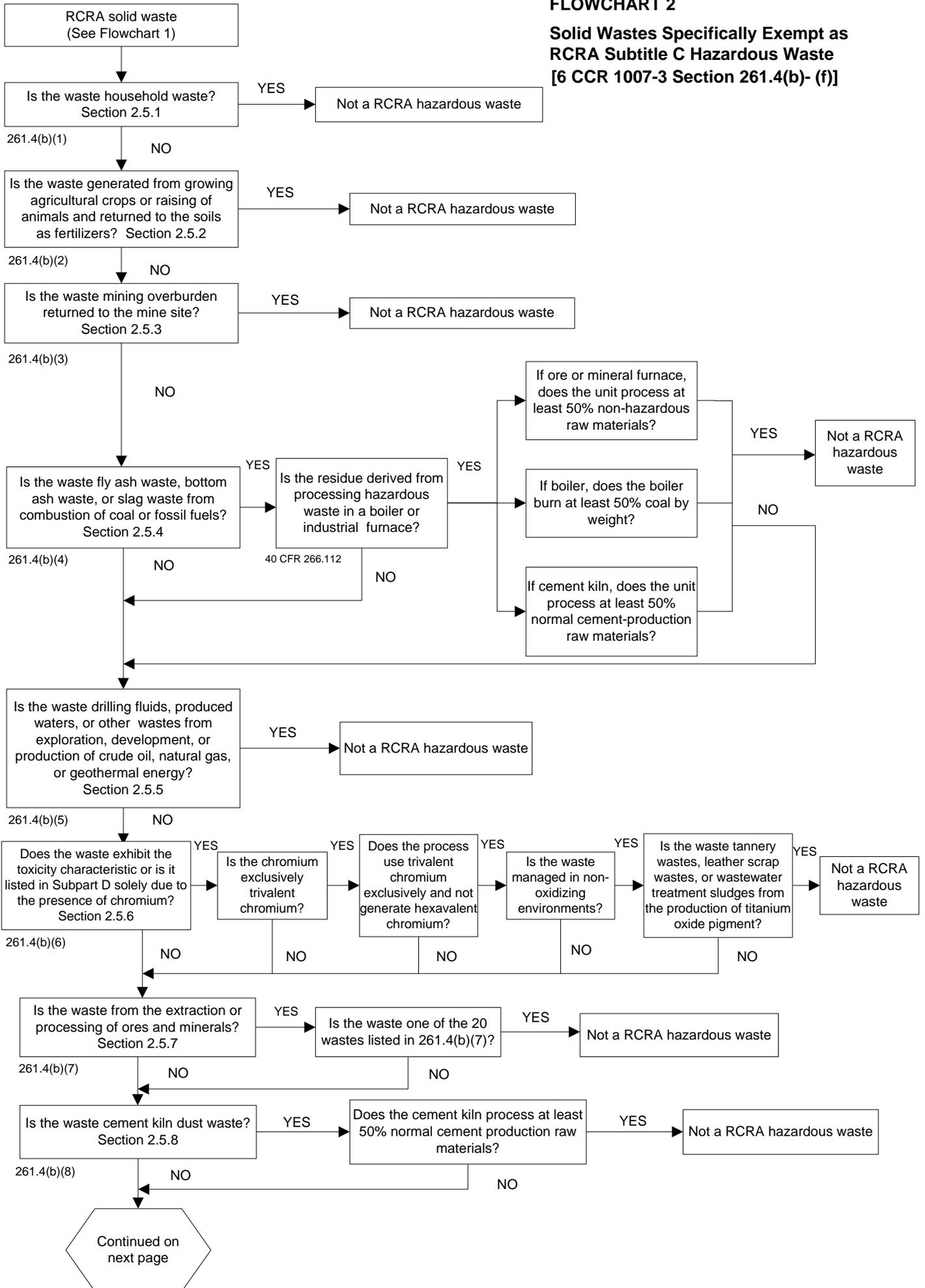
Refers to the Colorado Hazardous Waste Regulations 6 CCR 1007-3

Refers to the "CDPHE Solid Waste Definition and Solid and Hazardous Waste Exclusions Guidance Document"

Note: Wastes that are not regulated as RCRA Subtitle C solid or hazardous wastes may be regulated under other statutes and/or regulations such as the Colorado Solid Waste Regulations, Colorado Water Quality Control Regulations, Colorado Radiation Control Regulations, Atomic Energy Act, and Clean Water Act.

FLOWCHART 2

Solid Wastes Specifically Exempt as RCRA Subtitle C Hazardous Waste [6 CCR 1007-3 Section 261.4(b)- (f)]



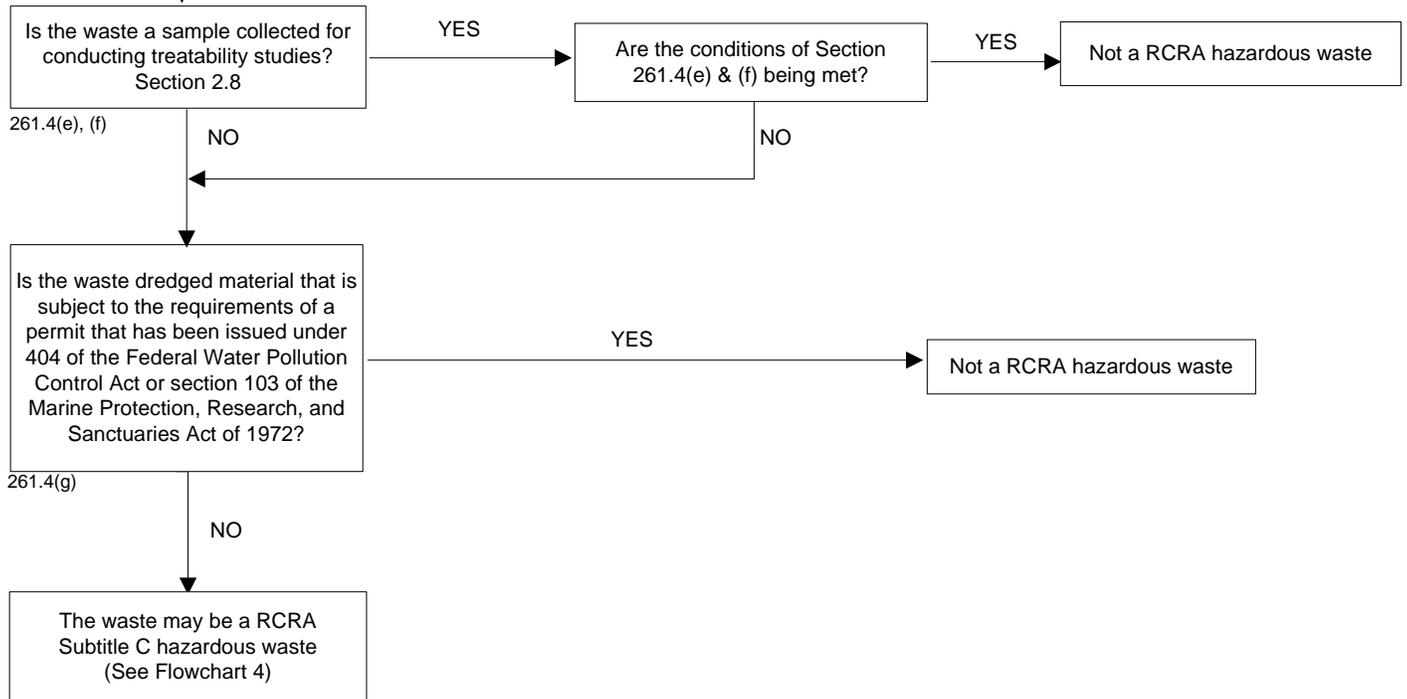
Continued from previous page

(Flowchart 2 continued)



Continued from previous page

(Flowchart 2 continued)



Key

Is the waste cement kiln dust waste?
Section 2.5.8

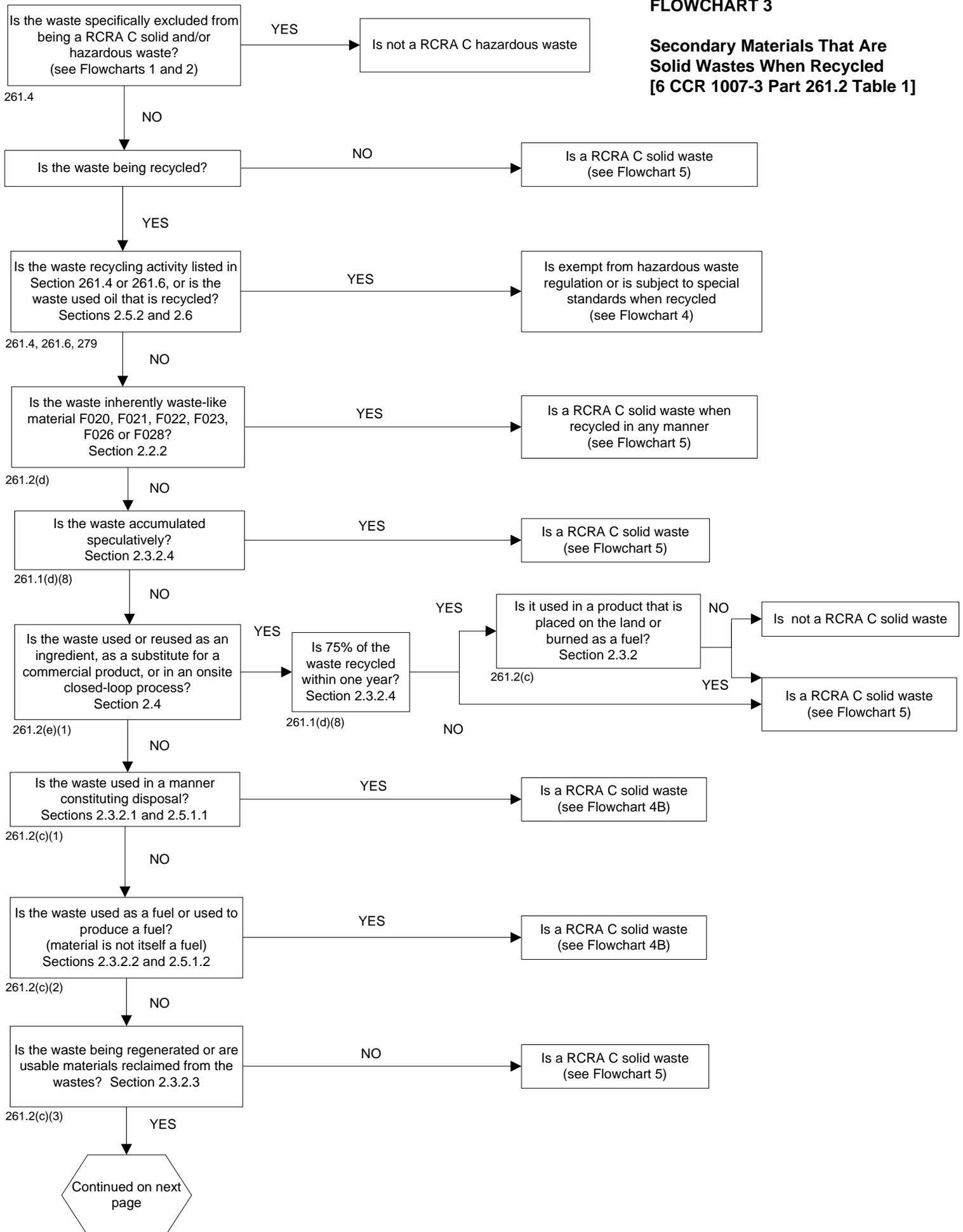
Refers to the "CDPHE Solid Waste Definition and Solid and Hazardous Waste Exclusions Guidance Document"

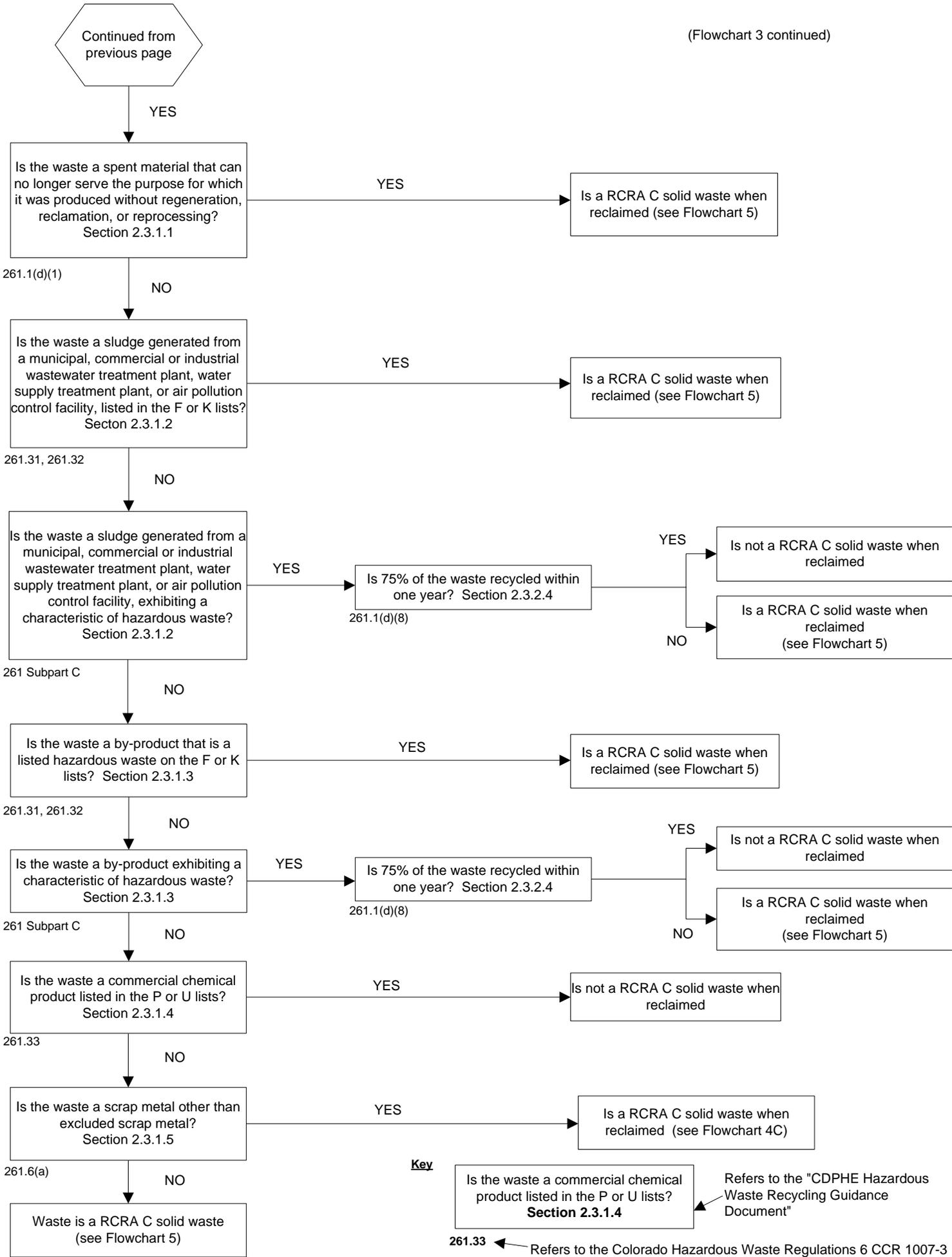
261.4(b)(8)

Refers to the Colorado Hazardous Waste Regulations 6 CCR 1007-3 unless otherwise noted

FLOWCHART 3

Secondary Materials That Are Solid Wastes When Recycled [6 CCR 1007-3 Part 261.2 Table 1]

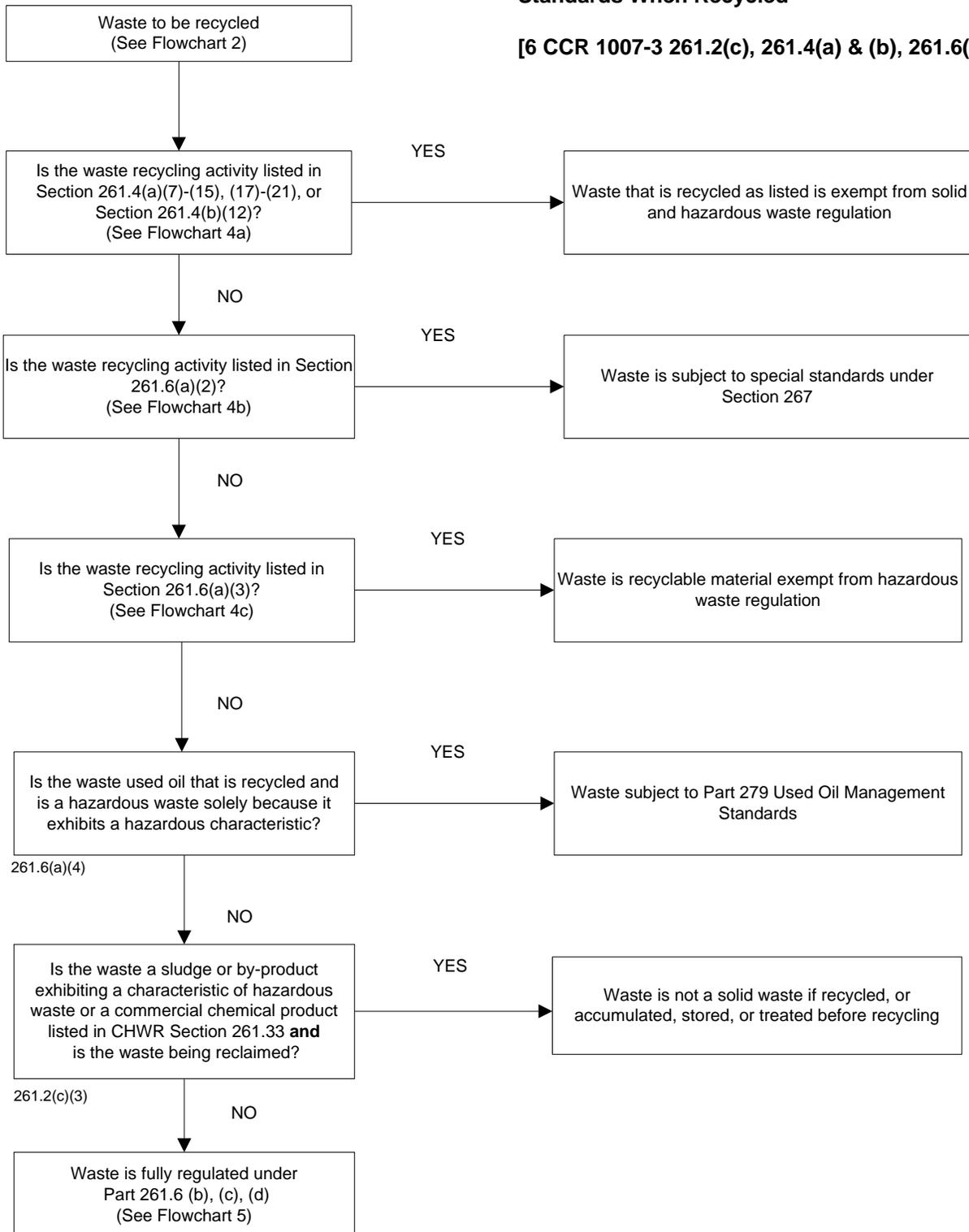




FLOWCHART 4

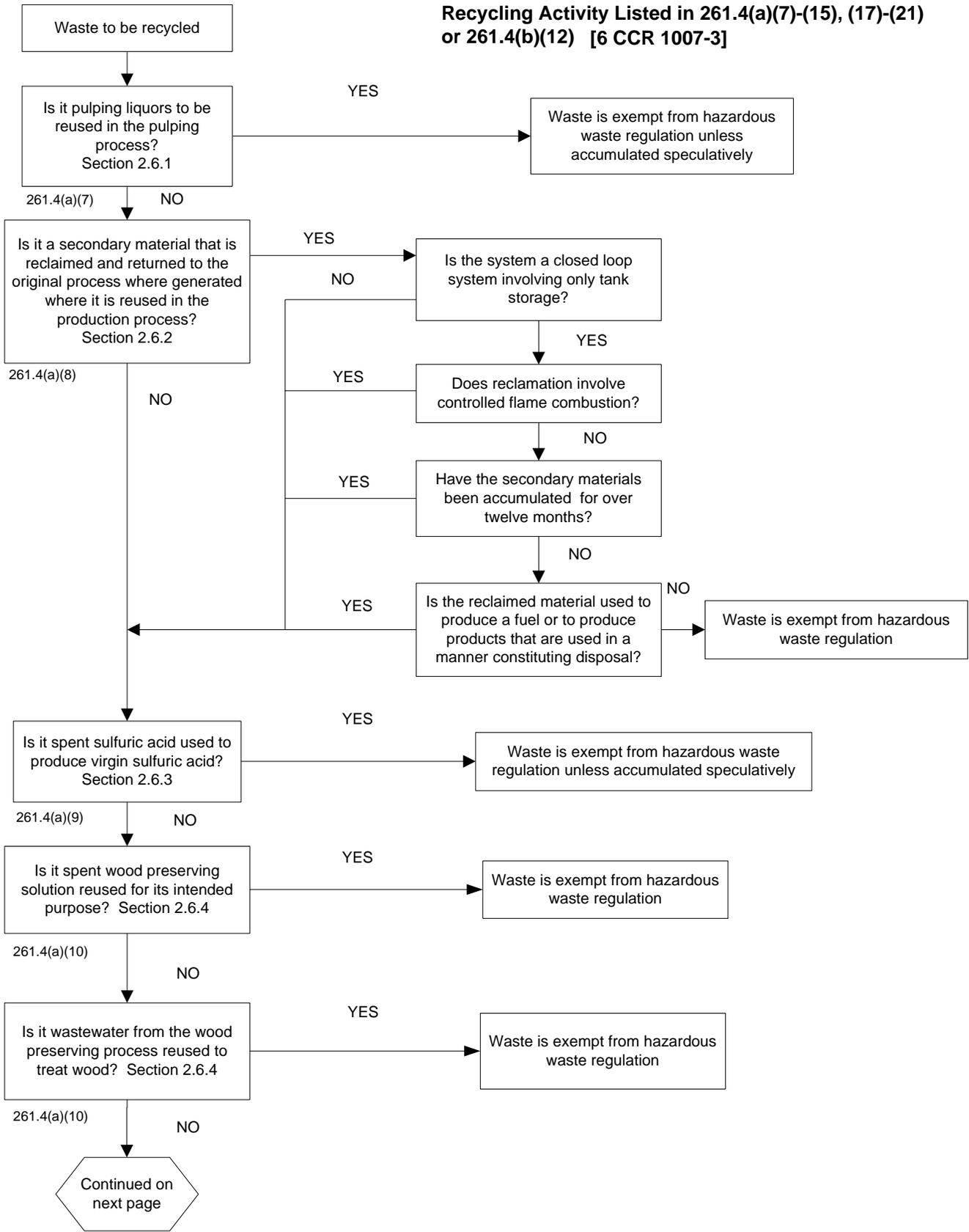
Solid Wastes Specifically Exempt as Hazardous Wastes or Subject to Special Standards When Recycled

[6 CCR 1007-3 261.2(c), 261.4(a) & (b), 261.6(a)]



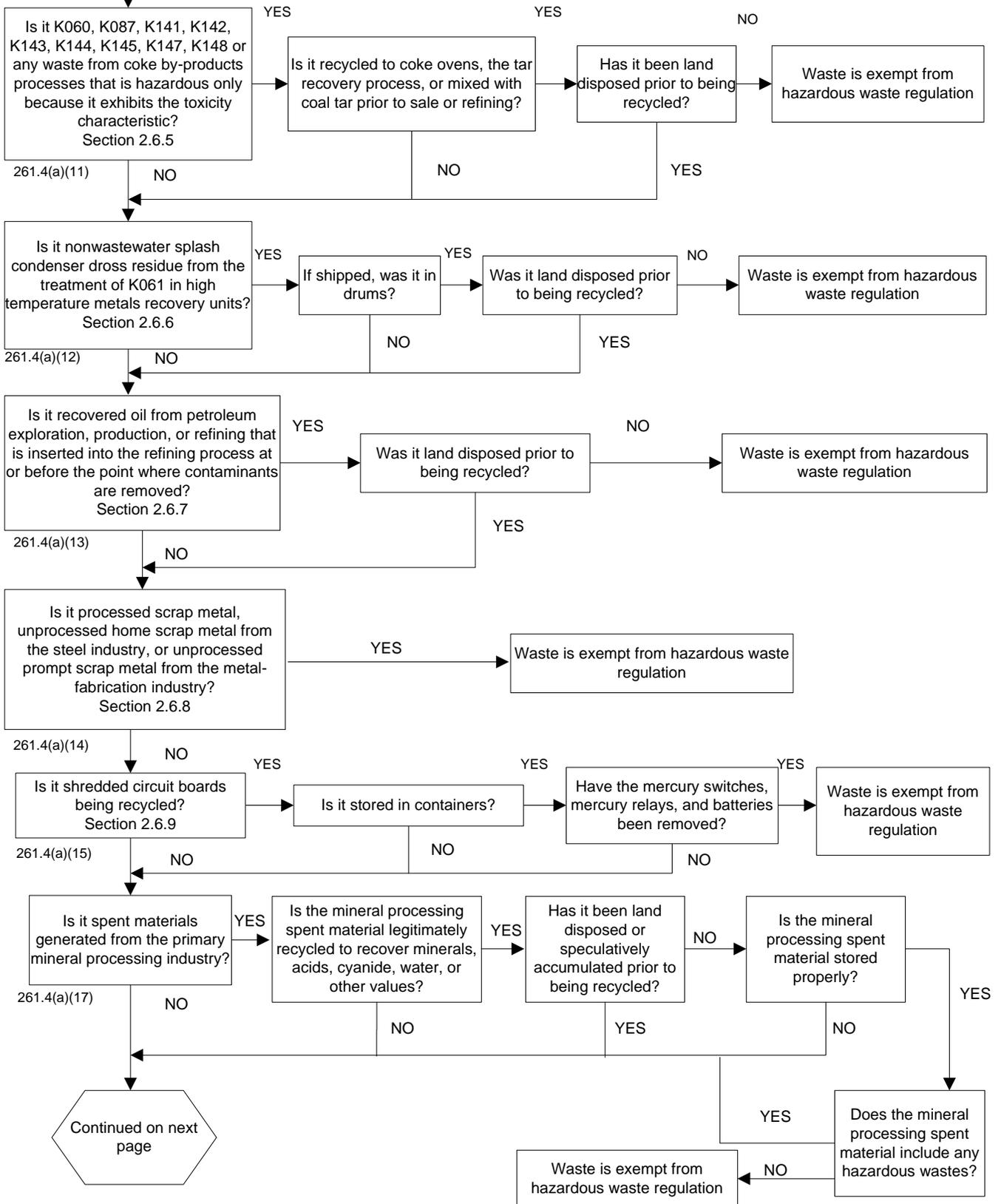
FLOWCHART 4A

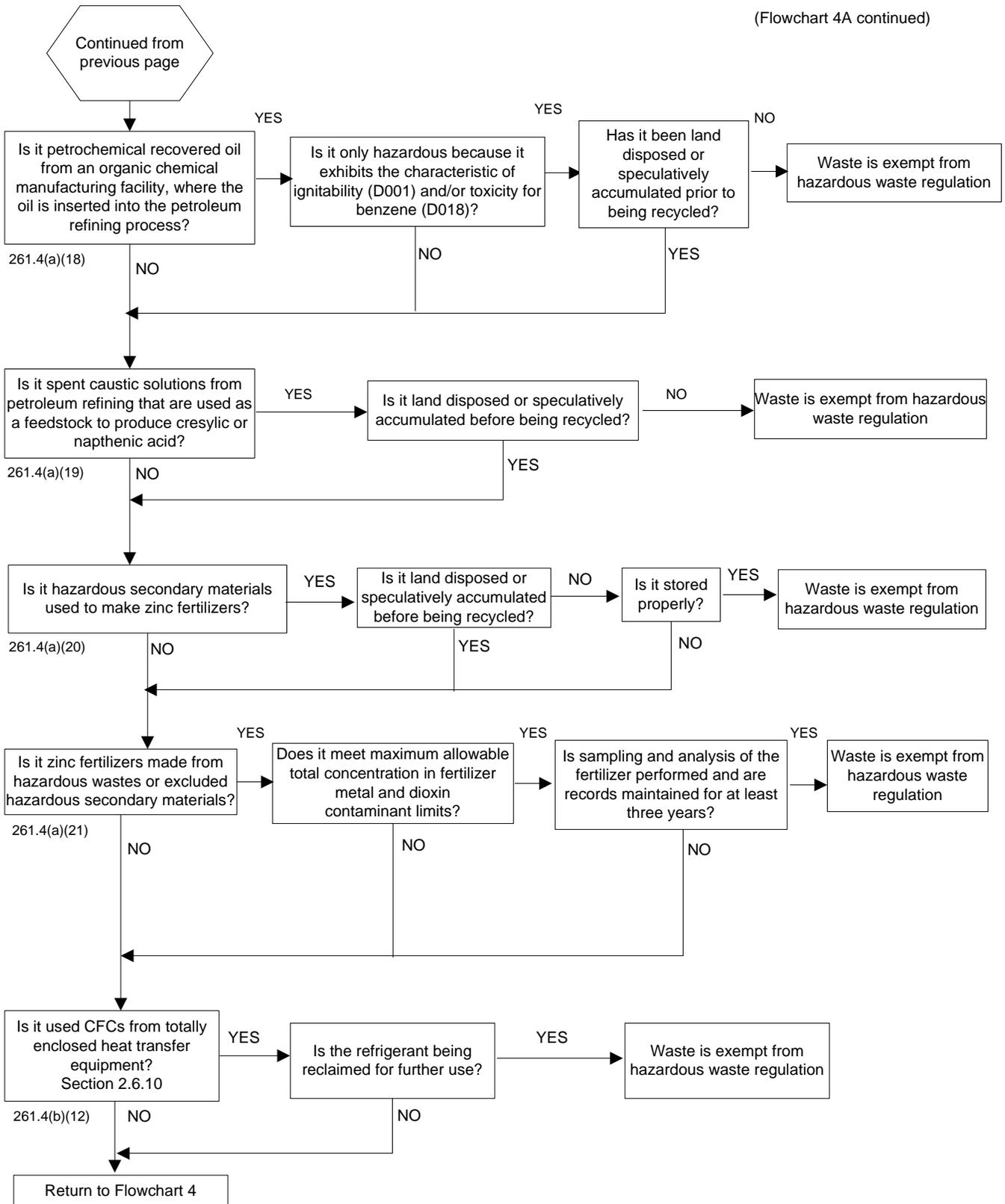
Recycling Activity Listed in 261.4(a)(7)-(15), (17)-(21) or 261.4(b)(12) [6 CCR 1007-3]



Continued from previous page

(Flowchart 4A continued)





Key

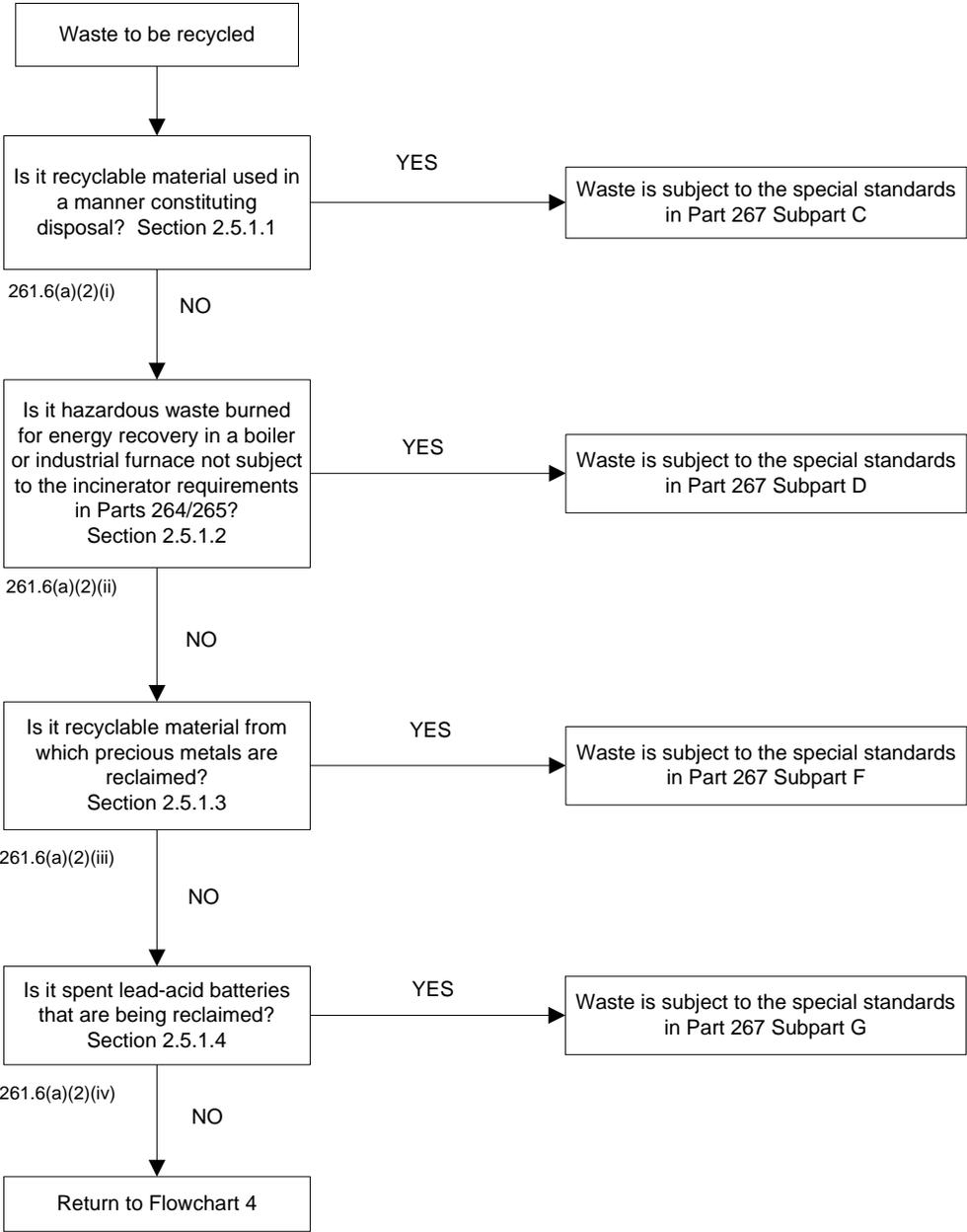
Is it spent sulfuric acid used to produce virgin sulfuric acid?
Section 2.6.3

Refers to the "CDPHE Hazardous Waste Recycling Guidance Document"

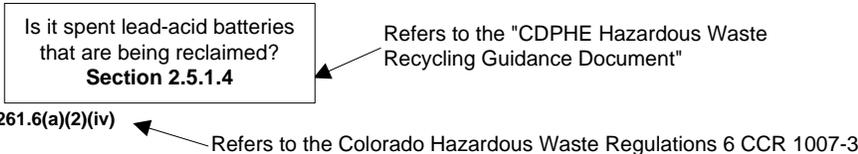
261.4(a)(9) ← Refers to the Colorado Hazardous Waste Regulations 6 CCR 1007-3

FLOWCHART 4B

**Recycling Activity Listed in 261.6(a)(2)
[6 CCR 1007-3]**

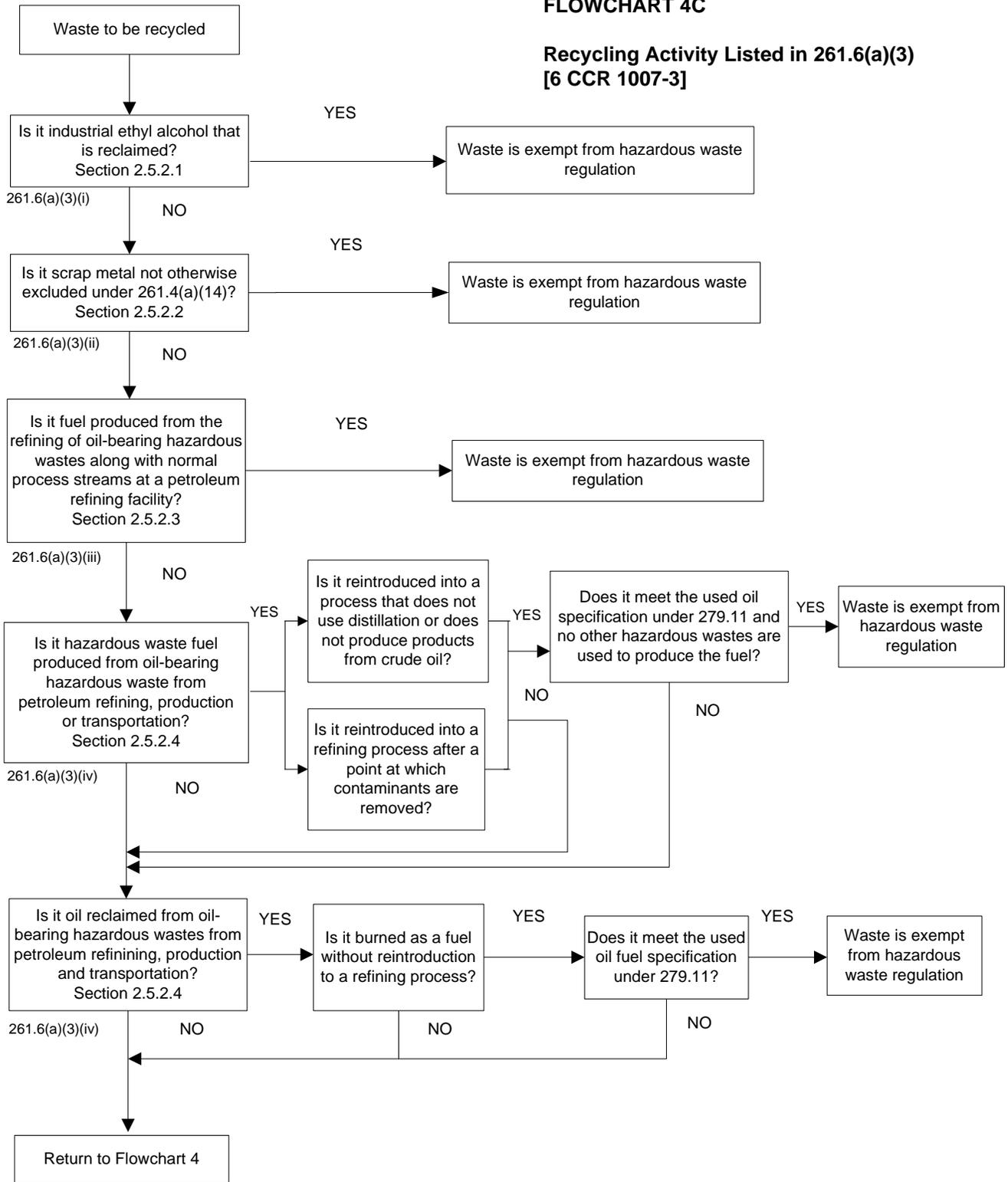


Key



FLOWCHART 4C

**Recycling Activity Listed in 261.6(a)(3)
[6 CCR 1007-3]**



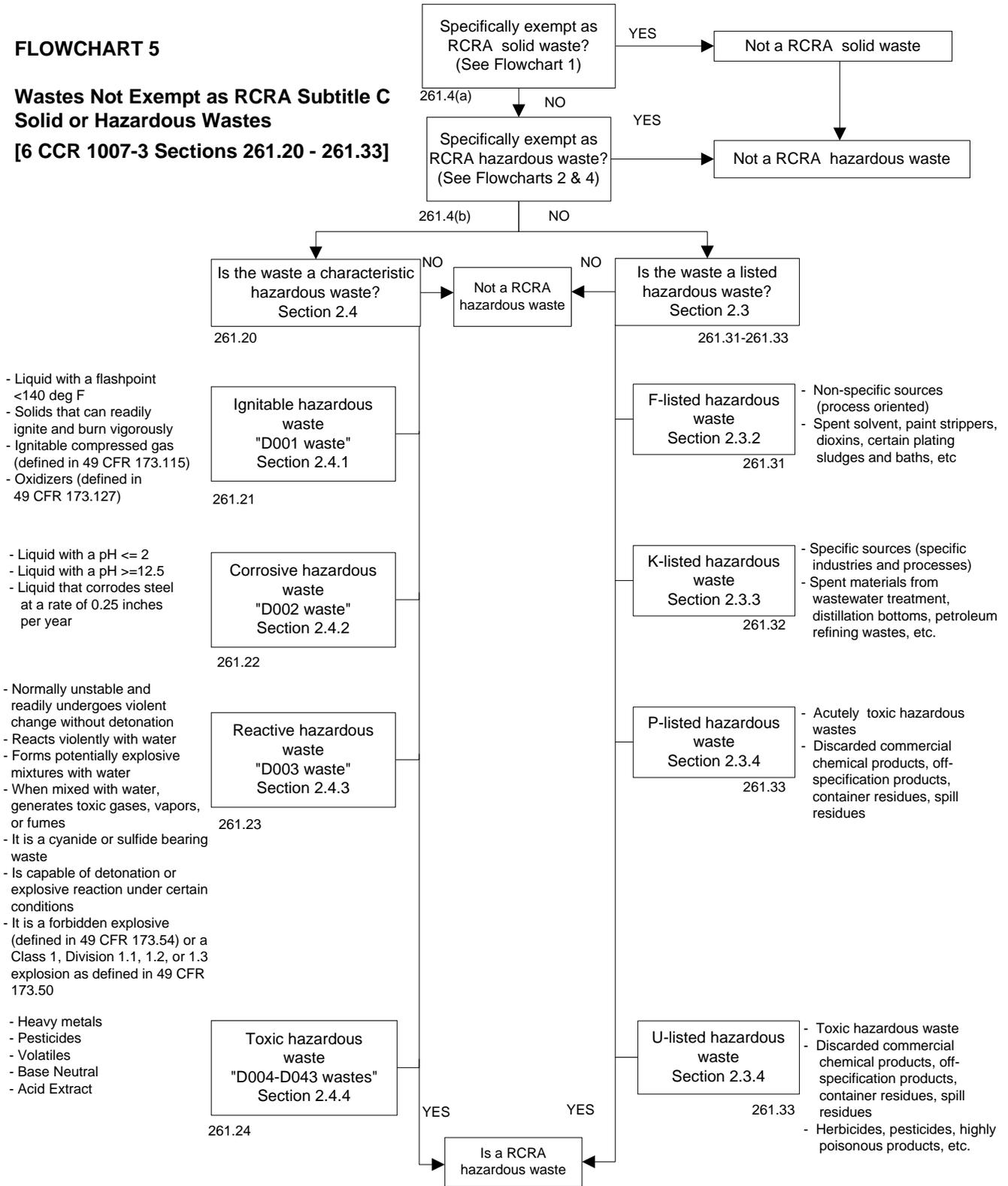
Key

Is it industrial ethyl alcohol that is reclaimed?
Section 2.5.2.1 ← Refers to the "CDPHE Hazardous Waste Recycling Guidance Document"

261.6(a)(3)(i) ← Refers to the Colorado Hazardous Waste Regulations 6 CCR 1007-3

FLOWCHART 5

Wastes Not Exempt as RCRA Subtitle C Solid or Hazardous Wastes
[6 CCR 1007-3 Sections 261.20 - 261.33]



Key

Note: More than one waste code may apply to a single waste.

Is the waste a characteristic hazardous waste? Section 2.4 ← Refers to the "CDPHE Hazardous Waste Identification Guidance Document"

261.20 ← Refers to the Colorado Hazardous Waste Regulations 6 CCR 1007-3