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Law and Policy Partnership to End the Commercial Tobacco Epidemic

HAZARDOUS WASTE LAWS & TOBACCO PRODUCT WASTE

What Schools, Businesses, & Others Need to Know

Tobacco product[1] waste, particularly e-cigarettes and vapes, has become ubiquitous in many communities, largely due to aggressive industry marketing and widespread retail availability. What should schools, businesses, agencies, and other entities do with tobacco product waste that accumulates on their premises?

Tobacco product waste, particularly e-cigarettes and related devices, should never be placed in the trash. Commercial tobacco products contain many hazardous components, such as nicotine, batteries, and other components made of toxic chemicals and heavy metals.[2] When these products are about to be discarded, they become subject to federal and state regulation under hazardous waste management laws.[3] Moreover, entities that have these materials on site and need to dispose of them are likely considered "generators of hazardous waste" and must follow the appropriate laws and regulations.

Avoid tobacco product waste by prohibiting smoking and commercial tobacco use

As a preliminary matter, the easiest way for any entity to deal with this issue is to avoid it altogether. For example, both public and private entities in California can prohibit smoking and commercial tobacco use on their premises. They should also educate those who frequent their buildings or grounds about their smoke-free commercial-tobacco free policies, place adequate , signs in visible areas, and provide information about tobacco cessation services.

Please note that California law already prohibits commercial tobacco use in schools, public buildings, and certain workplaces and other structures. In addition, many jurisdictions in California have local laws that go further and apply to both public and private entities, whether indoors or outdoors.[4] Complying with those laws (and where there are none, adopting voluntary measures) results in a reduction of accumulated tobacco product waste.

This resource provides schools, businesses, and other entities in California basic information about the legal requirements for disposing of hazardous tobacco waste. Entities can contact their local hazardous waste management department for specific guidance on how to safely store and dispose of hazardous materials and how to safely transport products to an appropriate hazardous waste disposal facility. California entities can also seek guidance from their local Certified Unified Program Agencies (CUPAs), which are tasked with enforcing hazardous waste regulations for generators at the local level. Finally, the Regulatory Assistance Office of California's Department of Toxic Substances Control (DTSC) can provide additional information and can be reached via email at rao@dtsc.ca.gov.

Note: A summary of key takeaways for schools, businesses, and other entities is available at the end of this resource: **Summary of Hazardous Waste Laws & Tobacco Product Waste**.

Overview of Laws

The federal government regulates the storage and disposal of hazardous waste materials under the Resource Conservation and Recovery Act (RCRA) and related regulations. RCRA explains what counts as hazardous waste and details what generators of hazardous waste must do to properly dispose of it. Under RCRA and California law, nicotine is defined as a hazardous waste, as are many lithium-ion batteries that are commonly found in electronic tobacco products. In fact, nicotine is listed as an acute hazardous waste, meaning that it is likely to cause death or permanent injury or illness even in small quantities, and consequently its storage and disposal are subject to heightened regulatory requirements.[5]

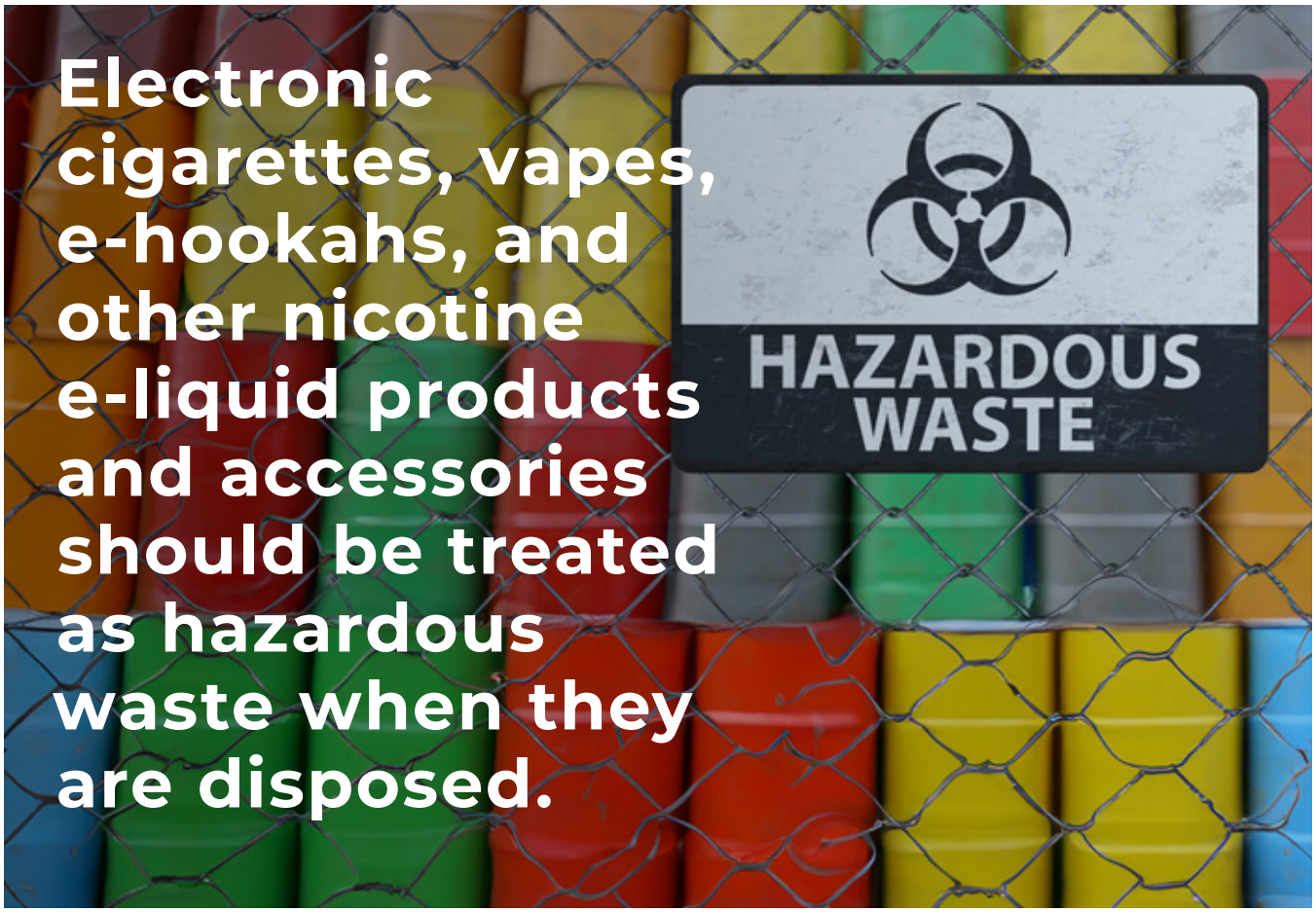
Under the Environmental Protection Agency (EPA), the State of California is authorized to enforce RCRA and its regulations.[6] RCRA also preserves the ability of states to enact more stringent regulations.[7] California's Hazardous Waste Control Act (HWCA) and its related regulations are both stricter and broader than federal hazardous waste management laws.[8] Therefore, even if the federal government does not regulate certain materials or situations, California may still regulate them.

Are tobacco products hazardous waste?

Generally, yes — particularly those products containing e-liquids and electronic components. Keep in mind that there are two major categories of hazardous waste. One category is "characteristic" hazardous waste, or waste that exhibits a minimum threshold of certain hazardous characteristics: corrosivity, toxicity, reactivity, and ignitability.[9] The waste generator generally determines these characteristics on a case-by-case basis. Note that most lithium-ion batteries in electronic tobacco products, such as e-cigarettes or heated cigarette devices, are likely characteristic hazardous waste because of their toxic contents and their reactivity and ignitability.

The other category is "listed" hazardous wastes (that is, listed in RCRA regulations), which are always considered hazardous when discarded and do not require a case-by-case analysis of their hazardous characteristics. The "P" list identifies acute hazardous wastes, which are commercial chemical products so toxic that they can cause death or permanent injury or illness even in small quantities.[10] Nicotine is a "P"-listed acute hazardous waste — EPA Hazardous Waste No. P075.[11] E-liquids that contain nicotine as the sole active ingredient (the ingredient that produces the"kick" people crave) are considered commercial chemical products — therefore they are acute hazardous wastes.[12] Because of this, electronic cigarettes, vapes, e-hookahs, and other nicotine e-liquid products and accessories should be treated as hazardous waste when they are disposed. This applies whether the products are disposed of unused in their original packaging or used up and spent.[13]

The EPA takes the position that cigarettes and cigars are not listed hazardous waste because the nicotine in them is not considered a commercial chemical product, unlike when it is found in e-liquids.[14] However, the EPA emphasizes that it is up to the generator to determine if these items exhibit hazardous characteristics that would subject them to regulation.[15] Notably, studies have shown that discarded cigarette butts are toxic, meaning they may well qualify as "characteristic hazardous waste" under RCRA.[16] Entities may reach out to their local regulatory agency (e.g., their Certified Unified Program Agencies) for guidance on how to test these items and other combustible or smokeless tobacco products. In the interest of public health, the Public Health Law Center recommends that entities that need to discard any tobacco product



waste contact their local hazardous waste management department to inquire how to best dispose of those items, even if they are not currently regulated as hazardous waste.

Note

> Both federal and state hazardous waste regulations exempt nicotine patches, gums, and lozenges that have been approved by the U.S. Food and Drug Administration (FDA) as over-the-counter nicotine replacement therapy product.[17]

Is my school, business, or entity a hazardous waste generator?

If tobacco product waste tends to accumulates on the premises, then the answer is most likely "yes." However, tobacco product waste is not the only type of hazardous waste. A individual or

entity that needs to dispose of any hazardous material is a hazardous waste generator and is subject to regulation under federal and state hazardous waste laws.[18]

The requirements generators must follow depend on the quantity of hazardous waste present at any one location. If an agency or entity owns or manages more than one location, it must calculate the quantity that is held at each location separately, and not count it in the aggregate. For example, each school where vape waste accumulates is a separate generator of hazardous waste, regardless of whether or not they belong to the same school district.

- **Large Quantity Generators** are those that generate 1,000 kg or more of hazardous waste or who generate more than 1 kg (or 2.2 lbs.) of acute hazardous waste in one month.[19]
- **Small Quantity Generators** are those that generate less than 1,000 kg of hazardous waste or 1 kg (or 2.2 lbs.) or less of acute hazardous waste in one month.[20]
- **Very Small Quantity Generators** are recognized federally as those that generate less than 100 kg of hazardous waste and less than 1 kg (or 2.2 lbs.) of acute hazardous waste in one month,[21] and are exempt from some federal requirements, and to a lesser extent, from some state requirements.

As a point of reference, many vapes and vape cartridges contain around 2 ml of liquid nicotine — an acute hazardous waste. This is roughly equivalent to 2 grams of weight, assuming a density similar to the density of water.

Because nicotine is listed as an acutely hazardous substance and many of the lithium-ion batteries found in electronic tobacco products are likely characteristic hazardous waste, entities that periodically dispose of electronic tobacco products or nicotine e-liquids likely qualify as hazardous waste generators.

The main question is whether they qualify as Large or Small Quantity Generators of hazardous waste. This is dependent upon the amount of waste produced in a given month, meaning it can change over time. For example, if an entity produces or needs to dispose of less than 1 kg of acute hazardous waste in June, it may be considered a Small Quantity Generator. But if it produces or needs to dispose of more than 1 kg or acute hazardous waste in July, it would then be considered a Large Quantity Generator.

Important

Under California law, *any amount* of nicotine e-liquid will trigger some hazardous waste disposal requirements for a generator, even if it is less than 1 kg of nicotine e-liquid waste per month.

What can hazardous waste generators do to comply with state and federal law?

Below are some general requirements for entities that need to dispose of tobacco products. **This list is informational only. It is not meant to be comprehensive and should not be taken as legal advice.** For specific guidance, consult with your local hazardous waste management department. For additional information, please visit DTSC Hazardous Waste Generator Requirements.

- **Count the hazardous waste.** Regardless of generator classification, determine how much of the products you will be throwing away count as hazardous waste on site at any given time.
    - All nicotine e-liquids must be counted by weight, including the e-liquid in cartridges that can be separated from the rest of the device, as well as those e-liquids in containers that are embedded in disposable devices and are not designed to be removed.
    - Lithium-ion batteries in tobacco products are likely characteristic hazardous wastes. Generators must determine which ones are regulated and count them by weight.

Warning

> Do not attempt to separate the e-liquid containers from the electronic smoking or vaping device in which they are embedded. This can result in death or serious injury from accidental explosion or nicotine poisoning, because nicotine is absorbed by the skin.

- **Determine your generator classification** based on the amount of hazardous waste or acute hazardous waste on site that month.
    - If you have more than 1 kg (or 2.2 lbs.) of total nicotine e-liquid in any given month, large quantity generator requirements apply that month. If you have less than 1 kg of total nicotine e-liquid, small quantity generator requirements apply. Note that your classification can shift month to month.
    - If you have more than 1,000 kg (or 2,200 lbs.) of lithium-ion batteries that exceed the hazardous characteristic thresholds, large quantity generator requirements will apply.
- **Obtain a generator ID number from the EPA or DSTC.**
- **Follow all onsite regulations based on the generator classification.** These may include, but are not limited to:

- Limits on the **quantity** of and the amount of **time** the hazardous waste can remain on site (e.g., at the retail shop) before being properly disposed.[22] If an entity holds on to the hazardous waste for too long, it could be categorized a Treatment, Storage, and Disposal Facility (TSDF), inadvertently triggering additional regulatory requirements.
- Training for generators and their employees (DTSC provides free training materials.).
- Specific storage, container, and labeling for different types of hazardous waste.
- Contingency plans in case of fires, explosions, or accidental release of hazardous waste.[23]

Note that under both federal and state labor laws, personal protective equipment must be provided to employees who handle hazardous waste.[24]

For a more detailed list of generator storage and disposal regulations, visit https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/05/California-Generator-Chart.pdf.

- **Determine the appropriate disposal facility.** Hazardous waste cannot simply be thrown in the trash or the recycling stream. Instead, entities must identify the proper facility to which to take their hazardous waste.
  - Generators that qualify as very small quantity generators (as explained above) may be able to take limited amounts of hazardous waste or acute hazardous waste to household hazardous waste collection facilities. In California, these facilities are meant primarily for hazardous waste generated in a residence, but California law contains a narrow exception that in certain circumstances can apply to very small quantity generators.[25]
    - Household hazardous waste collection facilities can accept no more than 100 kg of hazardous waste or no more than 1 kg of acute hazardous waste per month from qualifying very small quantity generators.
  - Many schools, businesses, and entities may already have other types of hazardous waste they need to discard (such as lab equipment, cleaning agents, and general e-waste). Disposal facilities they currently use may also be able to receive their tobacco product waste.
- **Contact a licensed hazardous waste transporter.** It is unlawful to transport hazardous waste without a valid registration provided by the DSTC.[26] California has created a database of registered transporters.
  - Note that there is a narrow exception for very small quantity generators that are transporting less than 1 kg of waste to a household hazardous collection facility that will accept the waste.[27]

- Fill out a Uniform Hazardous Waste Manifest — a form that must accompany hazardous waste from the generation point (the entity's building) to its disposal destination and during transportation.

Why is it crucial to comply with hazardous waste management laws?

Hazardous waste management regulations exist for the health and safety of the public and the environment. E-cigarettes and vapes leach several toxic substances that aggregate in animals, soil, and aquatic ecosystems, contaminating drinking water and food sources in communities across the nation.[28] E-cigarettes and vapes are also known for catching on fire even when not activated, and the small lithium-ion batteries have destroyed waste management facility equipment and pose a serious safety risk to waste management workers.[29] Cigarette butts and other smokeable tobacco products also tend to accumulate near popular community areas without adequate smoke-free or commercial tobacco-free protections. These items are known to leach nicotine, other toxic chemicals, and heavy metals for years after being thrown out; such leachates are harmful to people, animals, and plants.[30]

In addition to the environmental and public safety reasons, it makes good business sense to properly dispose of tobacco product waste. Businesses have been fined thousands of dollars

per violation for non-compliance with hazardous waste management regulations.[31] Tobacco product waste that is stored longer than permitted by hazardous waste regulations can trigger several penalties. What's more, these violations may lead to the entity being categorized as a Treatment, Storage, and Disposal Facility (TSDF), and failing to comply with the many TSDF regulations can make entities liable for further penalties. The simplest way for businesses to avoid liability under hazardous waste management laws is to reduce the amount of hazardous waste products (i.e., tobacco products) allowed to be used on site. Short of that, it's still easier and cheaper to follow the rules for properly disposing of hazardous tobacco product waste than to deal with the financial and legal consequences of violating these laws.

Schools in particular are highly motivated to find a solution to the tobacco product waste problem, yet they face unique challenges. Schools already prohibit the possession and use of these addictive products on campus. However, because of the youth vaping epidemic, these prohibitions alone cannot curb the constant influx of hazardous tobacco waste onto campuses. Frequent education for students and parents on the acutely toxic nature of these products and widely disseminated information on cessation resources can complement tobacco-free school policies. For an age group that cares deeply for the environment, learning of the ecological damage caused by tobacco products can motivate many to quit using these products or not try them out in the first place. Schools can also gather data on the amount of hazardous waste collected and disposal cost estimates. This data may help inform local and state policymakers of the need for disposal resources for schools, and for jurisdiction-wide upstream policies that curb the sale of these addictive toxic products in communities.

Please note: a short summary of the information in this resource is available on **page 10**.

Additional Resources

- Business Hazardous Waste Generators, Department of Toxic Substances Control
- DTSC Hazardous Waste Generator Requirements, Department of Toxic Substances Control
- How Do I Find Hazardous Waste Management Facilities in My Area?, U.S. EPA
- Locate your CUPA, Local Hazardous Waste Management Compliance Agency
- *Disposal of E-Cigarettes*, California Department of Public Health
- *Tobacco Product Waste: Frequently Asked Questions (California)*, Public Health Law Center
- *Disposing of E-Cigarette Waste: FAQ for Schools and Others*, Public Health Law Center

Summary of Hazardous Waste Laws & Tobacco Product Waste

Under federal and state law, many tobacco products become hazardous waste when they are going to be thrown away — regardless of whether they are new or used up. Schools, businesses, agencies, and any other entities that need to dispose of these items should be aware of the hazardous waste management laws that require specific disposal. For example:*

E-Tobacco Products Are Likely Hazardous Waste

- **Nicotine in certain forms, like the liquid nicotine in vape e-liquids**, is an acute hazardous waste under the Resource Conservation and Recovery Act (RCRA) and related regulations.
- The **lithium-ion batteries** commonly found in e-tobacco products likely qualify as "characteristic hazardous waste" under RCRA and/or state law.

Entities that End up With Hazardous Waste are "Hazardous Waste Generators"

- A hazardous waste generator is *any* person or entity that needs to dispose of hazardous waste.
- RCRA has different rules depending on how much hazardous waste an entity is throwing away. Entities should count their hazardous waste to determine their "generator status."
  - If you possess more than 1,000 kgs of "characteristic hazardous waste" (e.g. lithium-ion batteries) or more than 1 kg of liquid nicotine that you are planning to discard, you are considered a **Large Quantity Generator** under RCRA. (For example, many vapes and vape cartridges contain around 2 ml of liquid nicotine — roughly 2 grams of weight, assuming a density similar to water).
  - If you possess less than 1,000 kgs of "characteristic hazardous waste," or less than 1 kg of liquid nicotine that you are planning to discard, you are considered a **Small Quantity Generator** under RCRA.

As Hazardous Waste Generators, Entities Must Follow Certain Steps

- **Step 1:** Obtain a Generator ID Number.
- **Step 2:** Follow all onsite regulations for your generator status, including rules for how to: Dispose of hazardous waste in a timely fashion (holding on to waste too long can lead to cascading penalties); train employees on handling hazardous waste; safely store the waste; cand reate contingency plans for fires and other emergencies.
- **Step 3:** Contact a licensed hazardous waste transporter to take the waste to an appropriate hazardous waste disposal facility.
- **Step 4:** Fill out a Uniform Hazardous Waste Manifest for the waste transportation.

Entities Should Inform Themselves and Seek Guidance from Regulators & Attorneys

- Federal and state environmental law can be complicated, and violating environmental regulations can carry civil and criminal penalties.
- Please refer to the Public Health Law Center's publications on this topic, but also seek guidance from your local California Uniform Program Agency (CUPA), the Environmental Protection Agency, and your attorneys.

* This informational resource is not exhaustive and should not be considered legal advice. If you have specific legal questions, consult with an attorney familiar with the laws in your jurisdiction.

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Endnotes

1 The Public Health Law Center recognizes that traditional and commercial tobacco are different in the ways they are planted, grown, harvested, and used. Traditional tobacco is and has been used in sacred ways by Indigenous communities and tribes for centuries. Comparatively, commercial tobacco is manufactured with chemical additives for recreational use and profit resulting in disease and death. For more information visit: http://www.keepitsacred.itcmi.org. When the word "tobacco" is used throughout this document a commercial context is implied and intended.

2 Yogi Hale Hendlin, *Alert: Public Health Implications of Electronic Cigarette Waste*, 108 AM. J. PUBLIC HEALTH 1489 (2018), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6187764; Hye-Bin Choi et al., *The Impact of Anthropogenic Inputs on Lithium Content in River and Tap Water*, 10 NATURE COMMC'NS 5371 (2019), https://www.nature.com/articles/s41467-019-13376-y; Max Krause & Timothy Townsend, *Hazardous Waste Status of Discarded Electronic Cigarettes*, 39 WASTE MGMT. 57 (2015), https://europepmc.org/article/MED/25746178; Thomas E. Novotny & Laila Hamzai, *Cellulose Acetate Cigarette Filter is Hazardous to Human Health*, TOBACCO CONTROL (2023), https://tobaccocontrol.bmj.com/content/early/2023/04/17/tc-2023-057925.

3 Hazardous waste laws regulate all hazardous waste, not only waste derived from tobacco products. However, this resource focuses only on tobacco product waste.

4 Am. Nonsmokers' Rights Found. (2024), *Matrix of Smokefree Outdoor Air Policies in California*, https://pets.tcspartners.org/files/Matrix%20of%20Outdoor%20SHS%20Policies_April%202024.pdf.

5 Code of Federal Regulations (C.F.R.), Title 40, § 261.33(e); California Code of Regulations (C.C.R.). Title 22 § 66261.33(a), (f).

6 Resource Conservation and Recovery Act (RCRA), Department of Toxic Substances Control (ca.gov); 57 FEDERAL REGISTER (FR) 32726.

7 42 U.S. Code (U.S.C.) §6929.

8 CA Health & Safety Code § 25170 (2023).

9 40 C.F.R. §§ 261.20, 261.21, 261.22, 261.23, 261.24, 22 C.C.R. §§ 66261.20, 66261.21, 66261.22, 66261.23, 66261.24.

10 40 C.F.R. § 261.11(a)(2).

11 40 C.F.R. § 261.33(e), 22 C.C.R. § 66261.33(a), (f).

12 E.P.A. comment at 40 C.F.R. § 261.33(d); letter from Barnes Johnson, EPA, to Daniel K. DeWitt (May 8, 2015), https://rcrapublic.epa.gov/files/14850.pdf.

13 A nicotine e-liquid container will be considered an acute hazardous waste unless it meets the definition of "empty" under both RCRA and HWCA. These laws require highly specialized processes to clean a container that held acute hazardous waste. These specialized processes cannot be undertaken without obtaining specific authorization from the Department of Toxic Substances Control (DTSC). 22 C.C.R. § 66261.33(c); 22 C.C.R. § 66261.7(b) and (d).

14 Letter from Barnes Johnson, EPA, to Ann Marie Beattie (July 17, 2017), https://rcrapublic.epa.gov/files/14894.pdf. See also 22 C.C.R. § 66262.11.

15 *Id.*

16 *See, e.g.*, Eli Slaughter et al., *Toxicity of Cigarette Butts, and Their Chemical Components, to Marine and Freshwater Fish*, 20 TOB CONTROL 418 (2011), https://tobaccocontrol.bmj.com/content/20/Suppl_1/i25.

17 *See* Envt'l Prot. Agency, Frequent Questions about the Management Standards for Hazardous Waste Pharmaceuticals and Amendment to the P075 Listing for Nicotine Final Rule, https://www.epa.gov/hwgenerators/frequent-questions-about-management-standards-hazardous-waste-pharmaceuticals-and#nicotine; *see also* Dep't Toxic Substances Control, Hazardous Waste Listing for Nicotine, https://dtsc.ca.gov/section-100-amend-the-p075-hazardous-waste-listing-for-nicotine.

18 40 C.F.R. § 260.10; 22 C.C.R. § 66260.10.

19 40 C.F.R § 260.10.

20 40 C.F.R § 260.10, 22 C.C.R. § 66260.10, California Health and Safety Code (H.S.C.) § 25123.3.

21 40 C.F.R. § 260.10.

22 40 C.F.R. §§ 262.17; 22 C.C.R. § 66262.34(a).

23 40 C.F.R. § 264.50 et al., 22 C.C.R. § 66265.51(a).

24 29 C.F.R. § 1910.132, 8 C.C.R. § 8414.

25 H.S.C. § 25218.3(b).

26 H.S.C. § 25163.

27 H.S.C. § 25218.5.

28 Yogi Hale Hendlin, *Alert: Public Health Implications of Electronic Cigarette Waste*, 108 AM. J. PUB. HEALTH 1489 (2018), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6187764; Hye-Bin Choi et al., *The Impact of Anthropogenic Inputs on Lithium Content in River and Tap Water*, 10 NATURE COMMC'NS 5371 (2019), https://www.nature.com/articles/s41467-019-13376-y; Max Krause & Timothy Townsend, *Hazardous Waste Status of Discarded Electronic Cigarettes*, 39 WASTE MGMT. 57 (2015), https://europepmc.org/article/MED/25746178.

29 U.S. FIRE ADMIN., *Electronic Cigarette Fires and Explosions in the United States 2009–2016* (2017), https://www.usfa.fema.gov/downloads/pdf/publications/electronic_cigarettes.pdf; U.S. ENV'T PROT. AGENCY, *An Analysis of Lithium-Ion Battery Fires in Waste Management and Recycling* (2021), https://www.epa.gov/system/files/documents/2021-08/lithium-ion-battery-report-update-7.01_508.pdf; James Tapper, *Single-use Vapes Sparking Surge in Fires at UK Waste Plants*, THE GUARDIAN (May 2023), https://www.theguardian.com/society/2023/may/13/single-use-vapes-sparking-surge-in-fires-at-uk-waste-plants.

30 Thomas E. Novotny & Laila Hamzai, *Cellulose Acetate Cigarette Filter is Hazardous to Human Health*, TOBACCO CONTROL (2023): https://tobaccocontrol.bmj.com/content/early/2023/04/17/tc-2023-057925.

31 *EPA's 2020 Adjustment to RCRA Civil Penalties*, MCCOY REVIEW (McCoy Seminars, Lakewood, CO), Feb. 12, 2020, https://www.mccoyseminars.com/newsletter/article.cfm?artnum=592.