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MEMORANDUM

To: Benjamin Wilcox
Executive Director
Office of the State School Security Marshall

From: Tony Hatton
Commissioner
Kentucky Department for Environmental Protection

Date: 8/2/2021

Re: Vaping Waste Disposal for School Districts

The purpose of this memo is to provide school systems in Kentucky background information and guidance on the requirements, and best practices, for managing and disposing of vaping devices and e-cigarettes. Both the e-liquid cartridges that contain nicotine and the lithium ion batteries commonly found in vaping devices are considered hazardous wastes under federal and state environmental law and have specific handling and disposal requirements that must be followed.

Vaping Devices and E-Cigarettes

Vaping devices and E-cigarettes (vaping devices) contain rechargeable lithium ion batteries with cartridges and bottles that contain various liquid nicotine mixtures. These devices can pose a threat to human health and the environment if they are not handled and disposed of properly, and fall under certain federal disposal requirements concerning hazardous and universal wastes. Vaping devices, their batteries, their liquid waste, and their containers should not be thrown in the regular trash or flushed down a sink. Instead, these items should be taken safely to a hazardous waste facility for proper disposal.

The collection and accumulation of vaping devices typically produce two (2) waste streams:

- The e-liquid, and their e-liquid containers and cartridges (unused, partially spent, and fully spent) containing various nicotine mixtures, and
- Vaping devices that use rechargeable lithium ion batteries and other e-waste.

Nicotine E-Liquid and Containers - Resource Conservation Recovery Act (RCRA) Hazardous Waste Disposal

Under the federal law, vaping devices are subject to RCRA hazardous waste laws for classification, characterization, and disposal when mass collection or confiscation of them, followed by handling and disposal, takes place.

Nicotine and nicotine salts are a P-listed hazardous waste under RCRA. A P-listed waste is classified as an "Acute Hazardous Waste." An acute hazardous waste is a hazardous waste that is fatal to humans at low doses and has a known acute toxicity dose, or is "*otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness.*" Under an acute hazardous waste classification, a generator may only accumulate 1 kilogram (Kg, 2.2 pounds) of P-listed waste before being treated as a "*Large Quantity Generator.*" Under RCRA in the accumulation of a P-listed waste, the entire weight of the container is counted as part of the accumulating hazardous waste weight limits. Accumulation of P-listed hazardous wastes of less than 1 Kg, or even when vaping devices are "empty" or only containing residual amounts nicotine, triggers one as a Very Small Quantity Generator of hazardous waste who have requirements under RCRA. Public schools and other public entities or mass events that accumulate P-listed hazardous waste will need to dispose of collected, confiscated, or accumulated vaping devices as hazardous waste as "generators" of hazardous waste under RCRA, and have responsibilities to ensure that the vaping devices are handled and disposed of in a way that is protective of human health and the environment.

While individual users of vaping devices and residences are exempt from RCRA disposal requirements as consumers or residences, public and mass event entities, such as public schools, under Federal law do not qualify for the consumer/residential exemption.

The following are best management practices and information for the handling of vaping devices:

- Check with your state and local environmental laws for the disposal of e-liquid wastes.
- Turn off the device and remove the rechargeable battery. If the device is not yours have the user do it.
- Store all items in a cool temperature environment and in a container that is sealed and marked "*Hazardous Waste.*"
- Never throw vaping devices or their batteries in the trash or store in desk drawers, office cabinet, or similar places. Keep them in a separate container for hazardous waste.
- Deliver the container of vaping device waste to a local hazardous waste facility at *least* every ninety (90) days.
- Do not rinse the vaping device's containers to remove the nicotine containing liquid/residue. That water would become hazardous waste and then need to be stored and disposed of properly as hazardous waste.

- Handle unused and discarded vaping devices carefully to avoid exposure to unused nicotine. Liquid nicotine can be absorbed through the skin and can cause accidental poisoning.

Lithium-ion Batteries - Universal Waste Rule

Lithium-ion batteries and other E-wastes in rechargeable vaping devices are considered “Universal Wastes” as batteries. Universal wastes are a type of RCRA hazardous waste. Vaping device lithium batteries do not have the same requirements as P-listed wastes under RCRA.

Kentucky adopted the federal Universal Waste Rule on March 12, 1997. The rule encourages recycling, collection, and proper disposal of some common products that contain hazardous wastes. The rule reduces administrative requirements and saves companies compliance costs and on paperwork.

Universal wastes are such things as:

- Batteries,
- Pesticides (e.g. recalled or banned from use, obsolete, damaged, or are no longer needed for their intended use),
- Thermostats containing mercury, and
- Spent Lamps (e.g. incandescent, fluorescent, high pressure sodium, mercury vapor, metal halide, high intensity discharge (HID), and neon bulbs or tubes).

The Following are Basic Requirements for Producers and Handlers Managing Universal Wastes:

Handlers or producers of a universal waste must determine their handler quantity status:

- *Large Quantity Handlers* produce 11,000 lbs. or more (about five to six tons), or
- *Small Quantity Handlers* produce less than 11,000 lbs.

Large and Small Quantity Handlers or producers:

- Must not dispose of a universal waste,
- Must not dilute or treat a universal waste on site,
- Must prevent releases to the environment,
- Must label waste as a "universal waste,"
- May accumulate universal wastes on-site for up to one year, and
- May accumulate universal wastes for more than one (1) year if such activity is solely for the purpose of accumulation of such quantities of universal waste as necessary to facilitate proper recovery, treatment, or disposal

In the proper recovery or disposal of universal wastes, handlers and producers:

- May accept universal wastes from off-site and keep them for up to one year,
- Must train employees on proper handling and emergency procedures,
- Must respond to spills and manage the residue as hazardous waste,
- May self-transport to an authorized destination facility, and
- Must comply with export requirements for foreign shipments.