

INITIAL STATEMENT OF REASONS
MERCURY WASTE CLASSIFICATION AND MANAGEMENT
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CONTENTS

EFFORT TO AVOID DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS	2
STUDIES RELIED ON	2
ALTERNATIVES CONSIDERED	3
DETAILED STATEMENT OF REASONS	5

EFFORT TO AVOID DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

This proposal would change the way certain mercury-containing wastes are regulated in California. The regulations would designate four categories of discarded products as hazardous wastes. All four categories include products that would not be classified as hazardous wastes under existing federal and State criteria. By listing them, the Department of Toxic Substances Control's (DTSC's) intention is to ensure that all products in each category are identified as hazardous wastes when discarded, regardless of their current regulatory status.

The proposal would also add universal waste management standards for the newly listed hazardous wastes to the existing Universal Waste Rule, as well as standards for several additional waste categories that are already hazardous under current criteria. None of the proposed new universal wastes are included in the federal Universal Waste Rule. However, the addition of these wastes to California's rule is consistent with the federal Universal Waste Rule, which allows petitions to request designation of additional appropriate hazardous wastes as universal wastes.

STUDIES RELIED ON

DTSC has used information from a variety of sources in developing these proposed regulations.

In preparing its *Draft Mercury Report*, released in October 2001, DTSC extensively researched the State's mercury problem. The draft report discusses the nature and extent of mercury contamination in California, as well as the past and present sources of this contamination. It also reviews the toxicology and environmental behavior of important forms of mercury and outlines several options for reducing further contamination by changing the way mercury-containing wastes are classified and managed.

Sources consulted in the preparation of the *Draft Mercury Report* include reports by U.S. EPA and State agencies, Internet web sites of government and academic institutions, scientific journals and books, and related regulatory materials. Many of the materials used in drafting the report were also consulted during the development of these proposed regulations. A list of these references is included in the appendix to this document. Additional information on common mercury-containing devices was obtained from Purdue University's Internet web site at:

<http://pasture.ecn.purdue.edu/~mercury/src/devicepage.htm>.

DTSC also conducted four workshops, in various locations throughout the State, at which the report's findings and regulatory recommendations were presented. Many comments

were received at the workshops, and they were taken into consideration in developing the current proposal.

Also relied on were:

- The State and federal Universal Waste Rules, found in chapter 23 of the California Code of Regulations, title 22, and in part 273 of the Code of Federal Regulations, title 40 (40 C.F.R.), respectively;
- Federal Register notices related to the federal Universal Waste Rule and the later modification to the economic analysis of the Lamps Rule;
- The Initial Study for these proposed regulations, prepared by DTSC under the authority of the California Environmental Quality Act (CEQA);
- The Health and Safety Code section 25150.6 analysis, which is part of this regulations package; and
- The fiscal and economic impact analyses prepared for this regulations package.

ALTERNATIVES CONSIDERED

Chosen Alternative: DTSC selected the option of designating a list of mercury-containing products as hazardous wastes when discarded. The products were chosen based on two criteria: the feasibility of recycling, and the availability of mercury-free substitutes. These criteria are consistent with section 25179.4 of the Health and Safety Code, in which the Legislature directs DTSC to make promotion of source reduction and recycling its two top priorities for the hazardous waste management program. In addition to listing these discarded mercury-containing products as hazardous wastes, DTSC proposes to adopt new standards for managing them. DTSC also proposes new management standards for several categories of discarded mercury-containing products that are hazardous under existing criteria, as universal wastes.

Rejected Alternatives:

1. *Do Nothing.* DTSC rejected this option because it would not support other efforts, in California and nationally, to limit further environmental contamination from mercury, nor would it promote mercury recycling and pollution prevention.
2. *Regulate all mercury-containing wastes.* Under this alternative, all mercury-containing wastes, regardless of their source or mercury concentration, would be classified as hazardous wastes. Discarded products containing mercury would be hazardous waste regardless of the feasibility of recycling their mercury or the availability of non-mercury substitutes.

DTSC rejected this alternative because it would lead to the classification of wastes with extremely low mercury concentrations (posing correspondingly low risks) as hazardous

wastes, due to the sensitivity of modern analytical instruments. Also, like option 1, this option would not effectively promote mercury recycling and product substitution.

3. *Regulate all wastes with intentionally added mercury as hazardous wastes.* As with option 2, this option would not consider the feasibility of recycling the mercury contained in discarded products when designating them as hazardous wastes, nor would it consider the availability of non-mercury substitutes.

DTSC rejected this option because it would have required generators to determine whether any mercury in their waste was intentionally added or naturally-occurring. Further, like option 2, this option would have included wastes that, arguably, pose insignificant risks when managed as nonhazardous waste, due to their very low mercury levels. DTSC believes the chosen alternative provides greater incentives for pollution prevention, the use of less-hazardous alternatives, and recycling. As discussed earlier, these objectives are consistent with section 25179.4 of the Health and Safety Code.

4. *Update hazardous waste thresholds.* Under this alternative, the Soluble Threshold Limit Concentration (STLC) and Total Threshold Limit Concentration (TTLC) regulatory thresholds would be updated, based on current science.

DTSC rejected this option because it would not be effective at promoting the use of less-hazardous alternatives. Products would be classified as hazardous or nonhazardous waste when discarded, without regard to the feasibility of recycling or the availability of non-mercury substitutes.

In evaluating this alternative, DTSC considered the possibility that revising the existing regulatory thresholds might provide an incentive for manufacturers of fluorescent lamps to further lower the mercury content of their products. Currently, only about 20 percent of the spent fluorescent lamps generated in the state are properly recycled. The remaining 80 percent continue to be land disposed. [Lamps generated by households and Conditionally Exempt Small Quantity Universal Waste Generators (CESQUWGs) are temporarily exempt from the Universal Waste Rule's prohibition on nonhazardous disposal.] DTSC believes that listing all mercury-containing lamps as hazardous waste would be more effective in reducing the amount of mercury going into our environment and would provide more of an incentive to recycle the lamps. Ongoing efforts to develop the state's infrastructure for collecting spent lamps from households and conditionally exempt small quantity universal waste generators will play a significant role in this improvement. The sunset of the current temporary disposal exemptions for households and CESQUWGs will also increase lamp recycling rates.

If, as DTSC proposes, all discarded lamps were designated as hazardous wastes, none would be allowed to be managed as municipal wastes. If, instead, the hazardous waste thresholds for discarded lamps were lowered, all lamps with mercury concentrations below

the lower thresholds could be managed as nonhazardous wastes. DTSC has concluded that designating all mercury-containing lamps as hazardous wastes will ultimately result in less mercury being released to the environment.

DETAILED STATEMENT OF REASONS/NON-CONTROLLING PLAIN ENGLISH SUMMARY

Add Section 66260.22 to Article 3 of Chapter 10:

California is a Resource Conservation and Recovery Act (RCRA) authorized state, which means that U.S. EPA has found the State's hazardous wastes regulatory program equivalent to, and no less stringent than, the federal RCRA program, and has authorized the State to implement its program in lieu of the federal program.

In adopting its final universal waste package in February 2002, DTSC decided not to include the federal rule's petition process for adding new universal wastes. This decision was based on the fact that the petition process found in California's Administrative Procedure Act (in Government Code section 11340.6) is essentially equivalent to that in the federal Universal Waste Rule. Although the Administrative Procedure Act's petition process is procedurally equivalent to the RCRA process, adopting a specific process for universal wastes that includes the federal petition process will facilitate U.S. EPA's determination of the equivalence of California's Universal Waste Rule with the federal rule.

DTSC is adopting the federal process in this new section. It allows a person who seeks to add additional universal wastes to chapter 23 to petition DTSC's director. Subsection (b) enumerates the information that must be contained in a successful petition. This section parallels the language found in 40 C.F.R. section 273.80, except that existing provisions for petitioning State agencies to adopt, amend, or repeal regulations are included; these requirements are found in Government Code section 11340.6.

Add Section 66260.23 to Article 3 of Chapter 10:

As part of the RCRA authorization process, DTSC is required to complete authorization checklists. On the checklist for the Universal Waste Rule, several entries address the federal rule's criteria for deciding whether to designate a hazardous waste as a universal waste. These criteria are not currently part of the State's rule.

This new section lists the factors that DTSC's Director will use to evaluate petitions, submitted pursuant to proposed section 66260.22, for addition of new universal wastes to chapter 23. The factors are intended to ensure that proposed universal wastes are appropriate for management under less stringent standards than are other hazardous wastes. Petitions to add hazardous wastes that are generated by a variety of generators in a variety of industries, that are produced in relatively small quantities by individual

generators, and that pose lower risk than other hazardous wastes are most likely to be successful. This section parallels the language found in 40 C.F.R. section 273.81.

Amend Section 66261.1:

This section discusses the purpose and scope of chapter 11. Chapter 11 identifies the wastes subject to regulation as hazardous wastes. Section 66261.1 enumerates the articles contained in chapter 11 and briefly describes their contents. Because this package adds a new article 4.1, a new paragraph (5), which describes the new article, is added to section 66261.1. The former paragraph (5) is renumbered as paragraph (6).

Amend Subsection (a) of Section 66261.3:

This subsection contains the definition of hazardous waste. This section is amended to reflect the addition of a new criterion for classifying wastes as hazardous waste to chapter 11 (namely, the list of mercury-containing hazardous waste in the new article 4.1).

Amend Subsection (b) of Section 66261.3:

This subsection enumerates the events that constitute the generation of a hazardous waste. Paragraph (2) is amended to address the generation of the mercury-containing wastes listed in the new article 4.1. As with the federally listed wastes, the wastes on the State's new 'M' list will be considered generated when they first meet the listing descriptions in article 4.1 of this chapter. In most cases, the listing descriptions in article 4.1 state that the waste is generated "when discarded." The exception is waste M001, motor vehicles that contain mercury switches. The listing description for waste M001 specifies that a listed hazardous waste is generated not when a vehicle that contains mercury switches is discarded, but when the owner decides to crush it for transport, bale, or shred it for recycling.

Paragraphs (3), (4), and (5) of this subsection address mixtures of hazardous and nonhazardous wastes. Under the existing paragraph (2) [which will be renumbered as (3)], mixtures of federally listed hazardous wastes and nonhazardous wastes are regulated as hazardous wastes, and are considered generated when first mixed. In the proposed new paragraph (4), DTSC addresses a different issue. In this case, the concern is with vehicles or other products that are manufactured with removable mercury-containing components. Unlike some industrially generated hazardous wastes, which are uniformly hazardous, the only hazardous constituent of some of the products to be listed under this proposal is contained in a discrete, removable component (e.g., a switch). DTSC's intent in including vehicles from which switches have not been removed in the listing description for M001 is to provide an incentive for dismantlers to remove mercury switches from vehicles prior to crushing, baling, or shredding them. By removing switches, dismantlers can avoid having to manage entire vehicles as hazardous waste, and can prevent the release of the mercury

encapsulated in switches to the environment. Alternatively, dismantlers may choose to manage discarded vehicles containing mercury switches as hazardous wastes. Persons who intend to crush, bale, or shred such vehicles will need to obtain a hazardous waste facility permit prior to doing so.

Amend Subsection (d) of Section 66261.3:

This subsection enumerates the criteria that a waste must meet in order to be classified as nonhazardous. Currently, a waste that does not exhibit a hazardous waste characteristic and is not listed in article 4 of chapter 11 is not a hazardous waste. A new paragraph (3) is being added to address the addition of the new list of hazardous wastes in the new article 4.1 of chapter 11. In order not to be classified as hazardous a waste, in addition to meeting the two existing criteria, may not be listed in the new 'M' list.

Amend Subsection (a) of Section 66261.6:

Hazardous wastes that meet the criteria listed in paragraph (6) of this subsection are exempted from most of the requirements in California Code of Regulations, title 22. Instead, these wastes are subject to special management requirements found in subparts C, F, G, and H of 40 C.F.R. Part 266. The wastes to be listed in article 4.1 will be managed as universal wastes under chapter 23 of the California Code of Regulations, title 22, not under Part 266. A new subparagraph (D) is added, making wastes listed in article 4.1 ineligible for exemption under paragraph (6) of this subsection.

Amend Subsection (a) of Section 66261.9:

Subsection (a) lists the hazardous wastes that may be managed under the standards for universal wastes in chapter 23, in lieu of the general hazardous waste management requirements of the Health and Safety Code and title 22. The subsection is amended to add the ten proposed new universal waste categories to the list.

Add Article 4.1:

Article 3 of chapter 11 contains the characteristics used to determine whether a waste is hazardous. Article 4 contains four lists of hazardous wastes that have been adopted from federal regulations. These proposed regulations will create California's first list of wastes that are hazardous regardless of whether they exhibit any of the hazardous waste characteristics in article 3. A new article 4.1 is added to chapter 11 to contain this new list, and other lists of hazardous wastes that may be adopted in the future.

Add Section 66261.50:

This new section 66261.50 enumerates the wastes that will be listed as hazardous wastes. Most wastes in each of the new listings would not be classified as hazardous waste for mercury under the toxicity characteristic. However, as discussed earlier, their (nonhazardous) management and disposal contribute significant amounts of mercury to the State's environment. The descriptions of some listed wastes include information on when they are considered generated.

M001

Most vehicles are so massive, relative to the weight of the mercury in their switches, that they do not exceed mercury concentration thresholds for classification as hazardous wastes. This is because the thresholds apply to the entire vehicle, not just to the switch itself. DTSC's intent in listing motor vehicles that contain mercury switches as hazardous wastes is to encourage handlers to remove the switches. DTSC estimates that the vehicles shredded annually in California contain between 0.75 and 1.5 tons of mercury. Refining the assumptions to estimate the amount of mercury from vehicle light switches yields approximately 1848 pounds of mercury. Of this amount, approximately 871 pounds finds its way into the nonmetallic waste ("fluff") generated by auto shredders. The remaining mercury is released to other environmental media (presumably, mainly to air). In light of the State's existing environmental contamination, the preventable release of almost one and a half tons of mercury from auto shredders is unacceptable.

This listing covers the mercury switches found in vehicles. It applies to tilt switches commonly used to activate trunk and hood lights, to mercury switches used in antilock brake systems (ABS), and to any other mercury switches found in motor vehicles. Vehicles and portions of vehicles from which switches have not been removed are also hazardous wastes under this listing. To avoid regulating intact vehicles as hazardous wastes, a vehicle that contains mercury switches is considered generated as a listed hazardous waste only when someone decides to crush, bale, shear, or shred it. To encourage the removal of mercury switches, vehicles from which all switches have been removed are not included in the listing description. Discarded vehicles from which all mercury switches are not removed are included in the listing, and could be managed as universal wastes or as fully-regulated hazardous wastes. Anyone intending to crush, bale, shred, or shear such vehicles without a hazardous waste facility permit would first need to remove all mercury switches.

The effective date of the listing is delayed until January 1, 2005, to be consistent with a deadline in Public Resources Code section 15029. This section, which was added by SB 633, prohibits the sale of vehicles containing mercury light switches manufactured after that date. The delay will also allow time to educate the regulated community on the potential

change in the hazardous waste status of vehicles that contain mercury switches, and on the advantages of and procedures for removing switches.

M002

This listing covers all mercury switches other than those in vehicles. It also includes mercury flame sensors, which are used in some gas-powered household appliances to prevent the flow of gas when a flame is not present. A non-inclusive list of switch types is provided to assist the regulated community in identifying the general types of switches covered by the listing. As with the M001 listing, this listing includes products that contain mercury switches and flame sensors, but excludes products from which all mercury switches and flame sensors have been removed. Again, DTSC's intent is to encourage the removal of intact switches from products before they undergo processing that may release their mercury to the environment. Discarded products from which all mercury switches are not removed could be managed as universal wastes or as fully-regulated hazardous wastes. Anyone intending to treat a product that contains one or more mercury switches (for example, by crushing a used washing machine that contains a mercury tilt switch to facilitate recovery of the steel) without a hazardous waste facility permit would first need to remove all switches.

The effective date of the listing is delayed for approximately one year. It becomes effective on February 9, 2004, which coincides with the date of the reduction in the quantity of batteries, lamps, and thermostats that a CESQUWG may dispose (pursuant to Cal. Code Regs., tit. 22, § 66273.8). The purpose of the delay is to provide time for the education of generators and handlers about the changes in the hazardous waste status of, and management requirements for, affected products. The delay will also allow generators time to prepare to properly manage—and ultimately recycle—all products with mercury switches.

M003

This listing covers all mercury-containing lamps, regardless of whether they exhibit a hazardous waste characteristic. DTSC believes that a lamp's mercury content is not a reasonable basis for classifying it as hazardous or nonhazardous. One reason is that the weight of a lamp's glass and metal components can affect whether or not the lamp exceeds hazardous waste thresholds for mercury. For example, compared with the standard T8 fluorescent lamps, smaller diameter T5 lamps use less glass and aluminum in their manufacture. Consequently, a T5 lamp that contains the same amount of mercury as a T8 lamp is more likely to exceed hazardous waste concentration thresholds for mercury than is the T8 lamp. Further, variables other than a lamp's mercury content may affect its impact on the environment. For example, if one type of lamp contains less mercury than another, but also produces less light or has a shorter life, using more of the lower-mercury lamps may not result in a net decrease in the mercury entering the environment.

One alternative to using the current concentration thresholds to classify lamps would be to replace the thresholds with a formula that considers a lamp's mercury dose, light output, and length of life. However, in light of the State's serious mercury contamination problem, DTSC believes that listing all mercury-containing lamps as hazardous wastes will be more protective of public health and the environment. As discussed below, the listing of mercury-containing lamps would be delayed until 2006; until then, some lamps would be classified as hazardous and others would not. Once it becomes effective, the listing will remove any confusion in the regulated community about which mercury-containing lamps are hazardous. It will also avoid the continued release of mercury to the environment that occurs when discarded lamps are broken during handling. The additional requirements for the generators of lamps not currently classified as hazardous wastes will be small; all newly classified hazardous waste lamps will be eligible for management under DTSC's universal waste management standards.

Most waste products that contain lamps are included in this listing description, but products from which all lamps have been removed are not. The listing also does not include liquid crystal displays (LCDs) that are back lit with mercury-containing lamps, or products that contain LCDs. These products are not included because less hazardous alternatives to the mercury-containing lamps in LCDs are not yet widely available. Also, the difficulty of separating a mercury-containing lamp from the rest of the display may make the recycling of the lamps impractical.

Delayed Implementation of the M003 Listing of Mercury-Containing Lamps

Under DTSC's existing Universal Waste Rule, all hazardous waste lamps, batteries, and thermostats generated by households and limited quantities generated by conditionally exempt small quantity universal waste generators (CESQUWGs) are exempt from management as hazardous or universal waste. The exempt quantity for CESQUWGs will be reduced to 30 lamps and 20 pounds of batteries per month, effective February 9, 2004. Both the household and CESQUWG exemptions will be phased out after February 8, 2006. After that date, all hazardous waste lamps will be subject to management as universal waste under chapter 23.

Currently, one of the three major brands of fluorescent lamps has been determined not to be hazardous waste under California's STLC/TTLC criteria. Regardless of who generates them, these waste lamps may be disposed in non-hazardous waste landfills in unlimited quantities. The two other major manufacturers produce lamps that are classified as hazardous waste in this State. Some of these waste lamps must be managed under the standards for universal waste lamps, while others (those produced by households and CESQUWGs) are temporarily exempt, and may be disposed in municipal landfills.

Landfill operators have instituted load checking programs, in which some incoming loads of garbage are checked for the presence of prohibited materials such as hazardous wastes. However, the landfill staff responsible for checking loads may not be able to determine the origin of a load of garbage that contains fluorescent lamps. Further, they may have difficulty distinguishing discarded lamps that are currently classified as hazardous wastes from those that are not. As a result, monitoring compliance by individual fluorescent lamp generators with the requirements that apply to them is currently very difficult.

DTSC proposes to delay the effective date of the listing of mercury-containing lamps as hazardous wastes until February 9, 2006, to coincide with the sunset of the household and CESQUWG exemptions. On that date, all discarded mercury-containing lamps will be classified as hazardous wastes. The delay of approximately three years will allow time to educate the generators of lamps that currently are not hazardous about the change in their status. It will also allow time for generators to prepare for the proper disposition of all mercury-containing lamps and for the development of the collection infrastructure. In typical use, most tubes purchased now will not reach the end of their lives until after the effective date of the hazardous waste listing. Therefore, the delay will not affect most lamps purchased today.

M004

This listing applies to a range of mercury-containing products whose manufacture and sale are banned, effective January 1, 2003, by Public Resources Code section 15027. It becomes effective on January 1, 2004, one year after the effective date of the ban on the manufacture and sale of these products. Some of the products banned by the bill may currently be classified as hazardous wastes, while others are already included in other listed waste categories. Listing M004 is intended to capture any novelty that would not be hazardous for these two reasons.

Mercury-added novelties fall into several categories:

- Novelties with liquid mercury;
- Novelties with mercury switches;
- Novelties with button-cell or other mercury-containing batteries;
- Novelties painted with mercury-containing paint; and
- Novelties with mercury-containing lamps.

Novelties with switches or lamps would be hazardous under listings M002 and M003, respectively; therefore, they are not included in this listing. Novelties with liquid mercury would likely fail the TTLC and be classified as hazardous wastes under the toxicity

characteristic (unless they are quite large¹). However, novelties that contain mercury button-cell batteries or mercury-containing lamps, as well as novelties painted with mercury-containing paint, may not have enough mercury to exhibit the toxicity characteristic.

Delay in Listing Effective Date

This listing will become effective one year after sale, manufacture, and distribution of mercury-added novelties will be banned. This one-year delay will not affect mercury-added novelties classified as hazardous wastes under existing hazardous waste identification criteria; it applies only to novelties with mercury concentrations below current regulatory thresholds. The delay will allow time to educate generators of discarded novelties not currently classified as hazardous waste (most of them households) in the coming changes in how they must classify and manage them.

Chapter 11, Article 5: Categories of Hazardous Waste **Amend Subsection (a) of Section 66261.101:**

This section lists the criteria a waste must meet to be classified as non-RCRA hazardous waste. Mercury-containing wastes listed in article 4.1 of chapter 11 that are not federally hazardous will be classified as non-RCRA hazardous waste. Paragraph (2) of subsection (a) of this section is amended to include the listing of a waste in article 4.1 as a criterion for classification as non-RCRA hazardous waste.

Amend Subsections (b) and (c) of Section 66262.11:

This section specifies the procedure for determining whether a waste is hazardous. After determining, pursuant to subsection (a), that the waste is not excluded from definition of hazardous waste, the generator is required to determine whether the waste is listed in article 4 or in Appendix X of chapter 11. If the waste is not excluded and does not appear on either list, the generator must then determine whether the waste exhibits any of the four hazardous waste characteristics.

These proposed regulations will classify wastes listed in appendix 4.1 of chapter 11 as hazardous whether or not they exhibit a hazardous waste characteristic. Therefore, subsection (b) is amended to require generators to determine whether a waste is listed in article 4.1 prior to determining whether the waste exhibits a characteristic. Subsection (c) is also amended to make clear that the generator of a waste listed in article 4.1 will not be required to determine whether the waste exhibits a characteristic.

¹ A novelty with a single switch containing 1 gram of mercury and weighing less than 110 pounds would fail TTLC; a novelty with one mercury switch and weighing up to 1100 pounds could potentially fail STLC.

Amend Subsection (g) of Section 66264.1:

Chapter 14 contains standards for owners and operators of hazardous waste transfer, treatment, storage, and disposal facilities. Subsection (g) lists persons who are not subject to the requirements of chapter 14. Paragraph (12) of subsection (g) exempts handlers and transporters of a list of hazardous wastes from regulation under chapter 14. Instead, these handlers and transporters are regulated under the universal waste requirements in chapter 23. These regulations will designate ten new universal wastes, and will include all mercury-containing lamps. The treatment, storage, and disposal facilities that receive these new universal wastes will be subject to the requirements in chapter 14, but handlers (including generators and offsite consolidators) and transporters of these wastes will be exempt. Paragraph (12) is amended to list the ten new universal wastes.

Amend Subsection (d) of Section 66265.1:

Chapter 15 contains standards for owners and operators of interim status hazardous waste transfer, treatment, storage, and disposal facilities. Subsection (d) lists persons who are not subject to the requirements of chapter 15. Paragraph (15) of subsection (d) exempts handlers and transporters of a list of hazardous wastes from regulation under chapter 15. Instead, these handlers and transporters are regulated under the universal waste requirements in chapter 23. Like handlers and transporters of the current universal wastes, the handlers and transporters of the ten new universal wastes and mercury-containing lamps designated by these regulations will not be subject to the requirements of chapter 15. Paragraph (15) is amended to add the ten new wastes to the list of universal wastes that are exempt from chapter 15.

Amend Subsection (g) of Section 66268.1, Purpose, Scope, and Applicability:

This subsection is amended by adding subsections (g)(4) through (g)(12). This amendment exempts handlers and transporters of the ten mercury-containing universal wastes and mercury-containing lamps added by these regulations from the land disposal restrictions and requirements imposed by sections 66268.7 and 66268.50. Instead, handlers and transporters of universal wastes are subject to the requirements of chapter 23.

Amend Subsection (c) of Section 66270.1, Purpose and Scope of These Regulations:

This section is amended by revising subsection (c)(2)(E)3 and adding subsections (c)(2)(E)4 through (c)(2)(E)13. These proposed amendments exempt handlers and transporters of the ten mercury-containing universal wastes and mercury-containing lamps added by these regulations from the hazardous waste permit requirements of chapter 20.

Instead, handlers and transporters of these ten new universal wastes are subject to the requirements of chapter 23.

Amend Chapter 23, Standards for Universal Waste Management:

Amend Article 1:

Article 1 contains the scope and applicability of chapter 23, as well as applicable definitions. This proposal amends article 1 to add applicability sections for ten new mercury-containing universal wastes. In most cases, DTSC is requiring recycling of the designated mercury-containing wastes as a condition of universal waste management. (If the wastes are not recycled, they are subject to full hazardous waste management.) This requirement is included for several reasons:

- Recycling conserves the State's resources and avoids mining of new mercury with the attendant mining waste production.
- Each mercury-containing product for which recycling will be required contains from one gram of mercury to, potentially, 100 grams or more.
- Mercury is very difficult to sequester permanently. It does not form stable long lasting, insoluble compounds. This disposal of mercury-containing products in landfills can create long-term problems. The U.S. EPA treatment standard for mercury is recycling – implying that no effective technology in use can permanently sequester mercury from the environment.
- The California Legislature, in Health and Safety Code section 25179.4, states that the second priority for DTSC's program, after source reduction (not producing waste in the first place), is to encourage recycling of the hazardous waste.

Amend Subsection (a) of Section 66273.1, Scope:

This section discusses the scope of chapter 23, which contains standards for universal waste management. Ten new universal wastes are added by these regulations. Subsection (a)(3), which lists lamps regulated under chapter 23, is amended to add a reference to mercury-containing lamps listed in the 'M' list in section 66261.50. Subsections (a)(5) through (a)(14) are added, listing the ten new universal wastes that will be regulated under chapter 23.

Amend Section 66273.5, Applicability—Lamps:

This section lists the lamps that are covered under chapter 23. Section 66261.50 of these regulations will designate all mercury-containing lamps as hazardous wastes, and consequently, all mercury-containing lamps will be subject to regulation under chapter 23. Discarded products that contain mercury-containing lamps are also subject to chapter 23. Currently, subsection (b)(2) exempts lamps that do not exhibit a hazardous waste

characteristic from chapter 23. It is amended to require that a lamp must also not meet the M003 listing description (i.e., it must not contain mercury) to be exempt from chapter 23. Subsection (b)(3) is amended to clarify that lamps not destined for an authorized recycling facility are fully-regulated hazardous wastes.

Add Section 66273.7.1, Applicability—Motor Vehicles that Contain Mercury Switches and Switches Removed from Motor Vehicles:

This section discusses the applicability of chapter 23 to mercury-containing motor vehicle switches and vehicles that contain them. It states that the universal waste management requirements of chapter 23 apply to discarded automotive mercury switches and to discarded vehicles and portions of vehicles that contain mercury switches. Both the switches and the vehicles that contain them are newly listed as hazardous wastes in listing M001 of section 66261.50.

Subsection (a) specifies the switches that are subject to universal waste management. On January 1, 2005, the M001 listing will make discarded mercury-containing motor vehicle switches, and vehicles that contain them, hazardous wastes. From the date these regulations become effective until December 31, 2004, universal waste requirements will apply to mercury switches that are voluntarily removed from motor vehicles. After the M001 listing becomes effective, universal waste management standards will also apply to vehicles and switches covered by the listing. This will ensure that the handlers of the affected vehicles and switches will not have to manage them under full hazardous waste management requirements.

Subsection (b) lists categories of vehicles and switches not covered under chapter 23. These include switches that are not wastes; switches that do not contain mercury; vehicles from which all mercury switches have been removed; switches that will not be recycled; and vehicles from which all mercury switches have not been removed that are crushed, baled, shredded, or sheared. Handlers are given a strong incentive to remove the switches from vehicles prior to processing them, and to recycle removed mercury switches: switches not destined for recycling and vehicles that are processed without having had all mercury switches removed are fully regulated as hazardous wastes.

Subsection (c) discusses when vehicle switches and vehicles that contain them become universal wastes. A used mercury switch becomes a universal waste when a handler removes it from a vehicle and decides to discard it. A vehicle that contains mercury switches becomes a universal waste when a handler decides to crush, bale, shred, or shear it (but, as discussed earlier, it becomes a fully-regulated hazardous waste if it is processed without removing all switches). An unused switch that is destined for recycling becomes a universal waste when the handler decides to discard it.

Add Section 66273.7.2, Applicability—Products that Contain Mercury Switches and Switches Removed from Products:

Non-automotive mercury switches and products that contain them are designated as hazardous wastes elsewhere in these regulations (waste 'M002,' in section 66261.50). As noted earlier, the shredding of large appliances and other mercury-containing products is a significant source of mercury in California's nonhazardous waste stream.

Subsection (a) specifies the non-automotive mercury switches subject to universal waste management. On February 9, 2004, the M002 listing will designate discarded non-automotive mercury switches, and discarded products that contain them, as hazardous wastes. From the date these regulations become effective until February 8, 2004, universal waste requirements will apply to mercury switches and products containing them that are hazardous wastes under existing criteria (i.e., that exhibit the toxicity characteristic). After the M002 listing becomes effective, universal waste management standards will apply to all non-automotive mercury switches and products with such switches.

Subsection (b) lists categories of switches and products not covered under chapter 23. These include:

- 1) switches that are not wastes;
- 2) switches that do not contain mercury;
- 3) products from which all mercury switches have been removed;
- 4) mercury switches not destined for recycling; and
- 5) waste appliances that are crushed, baled, shredded, or sheared from which all mercury switches were not first removed.

Handlers are given an incentive to remove mercury switches from appliances that contain them prior to processing them, and to recycle non-automotive mercury switches: as with vehicle switches, non-automotive mercury switches not destined for recycling and appliances processed without having had all mercury switches removed are fully regulated as hazardous wastes. Crushed, baled, shredded, baled and sheared appliances are singled out from other products with mercury switches for full hazardous waste regulation because, like motor vehicles, they are commonly processed to recover their scrap metal. Aside from appliances, DTSC assumes that products with mercury switches are not typically processed by these methods.

Subsection (c), which discusses when non-automotive mercury switches are considered generated, is based on similar language in the applicability sections for the existing universal wastes. The designation as universal wastes of discarded products from which mercury switches have not been removed is intended to serve as an incentive for handlers

to remove the switches (when feasible), to avoid managing the entire products under chapter 23.

Add Section 66273.7.3, Applicability—Dental Amalgam wastes:

Silver amalgam restorations are widely used by dentists, and DTSC recognizes that the decision to use amalgam or another material is appropriately made by dentists and their patients. DTSC does establish the standards for managing amalgam waste, however, because it is hazardous waste under the TTLC.

Currently, some amalgam waste is exempt from hazardous waste regulation, while other amalgam waste is fully regulated. Larger scraps of dental amalgam that are recycled are exempt, pursuant to section 66261.6, subsection (a)(3)(B). Smaller amalgam fines (less than 100 microns in diameter) are not exempt, and currently may be subject to full hazardous waste regulation. In order to facilitate the proper management of amalgam wastes generated by dental offices, DTSC is designating dental amalgam wastes, as described in proposed section 66273.9, as universal waste. Chapter 23 does not apply to:

- 1) dental amalgam that is not waste as described in chapter 11,
- 2) empty amalgam capsules,
- 3) waste restorative materials that do not contain mercury,
- 4) dental amalgam wastes not destined for recycling (these are instead fully regulated as hazardous wastes).

Subsection (a) lists amalgam wastes that are covered under chapter 23's universal waste requirements; subsection (b) lists wastes to which chapter 23 does not apply. Subsection (c), which discusses when dental amalgam waste is considered generated, is based on similar language in the applicability sections for the existing universal wastes.

Add Section 66273.7.4, Applicability—Mercury-Containing Pressure or Vacuum Gauges:

This proposed section applies the requirements of chapter 23 to persons managing pressure or vacuum gauges, as described in section 66273.9, unless:

- 1) the gauges are not wastes as described in chapter 11;
- 2) the gauges do not contain mercury, or
- 3) the gauges will not be recycled.

This section parallels the language found in the applicability sections for the existing universal wastes.

DTSC proposes to make universal waste management of waste pressure or vacuum gauges contingent on recycling. Persons opting not to recycle waste gauges would be subject to full hazardous waste regulation. This is due to the large amount of mercury contained in each gauge—up to 100 grams or more (equivalent to the mercury in 100 fever thermometers or 10,000 fluorescent tubes). Further, gauges that are RCRA hazardous wastes generated by persons subject to the federal hazardous waste program would be subject to land disposal restrictions and would have to be treated prior to land disposal. One of the required treatment processes for high mercury wastes is retorting—the same process used by mercury recyclers.

Subsection (c), which discusses when waste pressure or vacuum gauges are considered generated, is based on similar language in the applicability sections for the existing universal wastes.

Add Section 66273.7.5, Applicability—Mercury-Added Novelties:

Public Resources Code section 15027 bans the sale of mercury-added novelties, effective January 1, 2003. Mercury added novelties are being designated as hazardous wastes elsewhere in these regulations (waste 'M004,' in proposed section 66261.50). To encourage the proper management of these products, DTSC is designating mercury-added novelties, as described in proposed section 66273.9, as universal wastes.

Subsection (a) specifies the discarded mercury-added novelties that are subject to universal waste management. On January 1, 2004, the M004 listing will designate all discarded mercury-added novelties as hazardous wastes. From the date these regulations become effective until December 31, 2003, universal waste requirements will apply only to discarded novelties that are hazardous wastes under existing criteria (i.e., that exhibit the toxicity characteristic). After the M002 listing becomes effective, universal waste management standards will apply to all mercury-added novelties when they become wastes.

Subsection (b) lists categories of novelties not covered under chapter 23. These include:

- 1) mercury-added novelties that are not wastes, as described in chapter 11,
- 2) waste novelties that do not contain mercury,
- 3) waste novelties that contain liquid mercury and are not destined for recycling (these are instead fully regulated as hazardous wastes).

Subsection (c), which discusses when mercury-added novelties are considered generated, is based on similar language in the applicability sections for the existing universal wastes.

Add Section 66273.7.6, Applicability—Mercury Counterweights and Dampers:

These products contain significant amounts of mercury and are currently classified as hazardous waste and subject to full hazardous waste regulation. This proposed section applies the requirements of chapter 23 to persons managing mercury counterweights and dampers, as described in section 66273.9. Chapter 23 does not apply to:

- 1) counterweights and dampers that are not wastes as described in chapter 11;
- 2) counterweights and dampers that do not contain mercury;
- 3) waste products from which mercury counterweights and dampers have been removed;
or
- 4) counterweights and dampers that will not be recycled.

This section parallels the language found in the applicability sections for the existing universal wastes.

Subsection (c), which discusses when counterweights and dampers are considered generated, is based on similar language in the applicability sections for the existing universal wastes.

Add Section 66273.7.7, Applicability—Mercury Thermometers:

Mercury thermometers contain a gram or more of mercury each—enough to significantly exceed the 20 milligrams per kilogram TTLC for mercury. Mercury thermometers are currently fully regulated as hazardous wastes when discarded. This proposed section applies chapter 23's requirements to persons managing mercury thermometers, as described in section 66273.9. Chapter 23 does not apply to:

- 1) thermometers that are not wastes as described in chapter 11;
- 2) thermometers that do not use the expansion and contraction of a column of mercury to measure temperature, or
- 3) thermometers that will not be recycled.

This section parallels the language found in the applicability sections for the existing universal wastes.

The second condition for management of thermometers as universal wastes (that the thermometer must “use the expansion and contraction of a column of mercury to measure temperature”) is intended to exclude thermometers whose only mercury is contained in a button-cell battery. Button-cell batteries, when discarded, are already hazardous wastes under existing criteria. As such, they may already be managed as universal wastes under chapter 23.

Subsection (c) is necessary, in order to specify when mercury thermometers become wastes. It is based on similar language in the applicability sections for the existing universal wastes.

Add Section 66273.7.8, Applicability—Mercury Dilators:

Like mercury thermometers, mercury dilators contain a relatively large amount of mercury and significantly exceed the TTLC for mercury. In addition, like mercury thermometers, mercury dilators are currently fully regulated as hazardous wastes when discarded. This proposed section applies the requirements of chapter 23 to persons managing mercury dilators, as described in section 66273.9. Chapter 23 does not apply to:

- 1) dilators that are not wastes as described in chapter 11;
- 2) dilators that do not contain mercury, or
- 3) dilators that will not be recycled.

This section parallels the language found in the applicability sections for the existing universal wastes.

Subsection (c) is necessary, in order to specify when mercury dilators become wastes. It is based on similar language in the applicability sections for the existing universal wastes.

Add Section 66273.7.9, Applicability—Mercury-Containing Rubber Flooring:

At least one brand of mercury-containing rubber flooring—used mainly in gymnasiums—was manufactured with intentionally added mercury. (To DTSC's knowledge, mercury is no longer used in the manufacture of rubber flooring.) Some of this flooring has been tested and found to exceed the TCLP threshold for mercury: 0.2 milligrams per liter. Presently, this flooring is fully regulated as hazardous waste when discarded. This proposed section applies the requirements of chapter 23 to persons managing mercury-containing rubber flooring, as described in section 66273.9. Chapter 23 does not apply to:

- 1) mercury-containing rubber flooring that is not waste, as described in chapter 11, and
- 2) rubber flooring that does not contain mercury.

Subsection (c), which discusses when mercury-containing rubber flooring is considered generated, is based on similar language in the applicability sections for the existing universal wastes.

Add Section 66273.7.10, Applicability—Mercury Gas Flow Regulators:

Mercury gas flow regulators significantly exceed the TTLC for mercury and are currently fully regulated as hazardous wastes when discarded. This proposed section applies the

requirements of chapter 23 to persons managing mercury gas flow regulators, as described in section 66273.9. Chapter 23 does not apply to:

- 1) mercury gas flow regulators that are not wastes, as described in chapter 11,
- 2) waste gas flow regulators that do not contain mercury, and
- 3) Mercury gas flow regulators that are not destined for recycling (these are instead fully regulated as hazardous wastes).

Subsection (c), which discusses when mercury gas flow regulators are considered generated, is based on similar language in the applicability sections for the existing universal wastes.

Amend Section 66273.8, Exemptions:

This section currently exempts households from managing universal waste batteries, lamps, and thermostats under the requirements of chapter 23 until February 8, 2006; instead, households may manage these wastes as nonhazardous waste. Beginning February 9, 2006, households would become subject to the labeling, training, and accumulation time requirements applicable to small quantity handlers of universal waste. This amendment would permanently exempt households from all universal waste handler requirements but one: they would continue to be prohibited from disposing of universal waste as non-hazardous waste. Instead, households would be required to transfer their universal waste to a handler or a destination facility.

This proposed change would make the requirements for household generators of batteries, lamps, thermostats, and the proposed new universal wastes consistent with the existing requirements for electronic product generators. Electronic product generators are persons who generate five or fewer CRT devices (primarily televisions and computer monitors) per year; they are exempted by current emergency regulations from most handler requirements. They are required to transfer CRT devices to a CRT material handler or household hazardous waste collection facility, and are prohibited from disposing of or disassembling them.

The rationale for exempting households from handler requirements is that the handler requirements are geared toward businesses and their employees. It will be more effective (and more protective of public health and the environment) to give a single, simple, message to households about these wastes: don't throw them away—get them to an appropriate destination facility.

In addition to the changes discussed above, section 66273.8 is renumbered and reorganized to improve clarity. The temporary disposal exemptions applicable to households and CESQUWGs for specific universal wastes are placed in subsections (a)(1) through (a)(4). The permanent household exemptions are placed in subsection (b);

subsections (b)(2)(A) through (b)(2)(K) enumerate the universal wastes which must be destined for recycling in order to be managed under the household exemption. The former subsection (d) is renumbered as (a)(5); the former subsections (e) and (f) are renumbered as (c) and (d), respectively.

Amend Section 66273.9, Definitions:

This section defines the terms used in chapter 23. Definitions of the wastes for which this proposal is adding universal waste standards are added to section 66273.9.

Amend Article 2, Standards for Small Quantity Handlers of Universal Waste, and Article 3, Standards for Large Quantity Handlers of Universal Wastes:

Articles 2 and 3, respectively, specify universal waste management standards applicable to small and large quantity handlers of universal waste. The waste management standards for small and large quantity handlers are identical. Both articles are amended to add waste-specific management standards for each of the new universal wastes added by this proposal. All of the management standards added by this proposal require universal waste handlers to manage each waste “in a way that prevents releases of any universal waste or component of a universal waste to the environment.”

Universal waste management standards for wastes that contain similar amounts of mercury and pose similar risks during waste management have been consolidated. For the purpose of developing universal waste management standards, wastes have been grouped into categories based on several criteria:

- 1) The amount of mercury they contain;
- 2) The physical state of the mercury they contain;
- 3) Whether the mercury they contain is fully encapsulated within the product, or whether the product contains openings through which mercury could escape; and
- 4) Whether the mercury is encapsulated in glass or another fragile material that, if broken, could result in the release of mercury to the environment.

Add Subsection (d) to Sections 66273.13 and 66273.33:

These new subsections contain management standards for universal waste mercury switches and thermometers. Two categories of discarded mercury switches are designated as hazardous wastes in proposed article 4.1 of chapter 11, while discarded mercury thermometers are already classified as hazardous wastes under existing criteria. Universal waste management standards for all three of these wastes are consolidated in these two subsections, because mercury switches from vehicles, those from other products, and mercury thermometers all contain similar amounts of mercury and pose similar risks during management.

The standards are intended to prevent the release of mercury from switches and thermometers to the environment. Subsection (d)(1) requires a handler to contain broken, damaged, or leaking switches and thermometers in a closed, structurally sound, undamaged, and non-leaking container with packing materials sufficient to protect them from breakage. Similar requirements, in subsection (d)(2), apply to containers used to accumulate mercury thermometers and mercury switches that have been removed from vehicles or other products. The container standards for mercury switches and thermometers are based on the existing standards for mercury thermostats, which are similar in size and contain similar amounts of mercury.

Removal of Mercury Switches from Vehicles and Appliances

Subsection (d)(3) allows, and contains standards for, the removal mercury switches from vehicles and other products. The requirements include:

- Having a mercury clean-up system available;
- Transferring any spilled mercury to an airtight container;
- Removing switches in a well ventilated area that is monitored for compliance with occupational exposure limits for mercury; and
- Formally training employees who remove mercury switches in proper waste handling and emergency procedures.

These requirements are intended to prevent releases of mercury to the environment and to prevent worker exposure to mercury vapors.

Subsection (d)(3)(A) requires handlers who remove mercury switches from vehicles and products keep basic records of switch removal for three years. The information that must be retained is as follows:

1. The number of vehicles destined for crushing, baling, shearing, or shredding;
2. The number of appliances destined for crushing;
3. The number of vehicles or appliances counted in 1 and 2 that contain mercury switches;
4. The number of switches removed from the vehicles and appliances counted in 3; and
5. The number of vehicles counted in 3 that were damaged to the extent that switches could not be removed.

These requirements are intended to document that switches are properly removed. No specific forms or format are specified for the required information, to give maximum flexibility to the universal waste handlers who remove switches in how to document the required information.

Requirement to Remove Switches and Certification of Removal of Switches

On January 1, 2005, the M001 listing in proposed section 66261.50 will take effect. On and after that date, mercury-containing motor vehicle switches and vehicles that contain them will be designated as hazardous wastes. This designation applies to a vehicle that contains mercury switches only when someone decides to crush, bale, shear, or shred it. Effective on the same date, subsection (d)(3)(B) will require that all mercury switches must be removed from a vehicle that contains them prior to processing the vehicle by crushing, baling, shearing, or shredding it. Further, a handler who takes or sends a vehicle or vehicles to another person for crushing, baling, shearing, or shredding will be required, by subsection (d)(3)(C), to certify that all switches have been removed or have been verified to have been removed.

When the M001 hazardous waste listing takes effect, crushing, baling, shearing, or shredding a vehicle that contains one or mercury switches will be considered treatment of a hazardous waste, and will require a permit. These removal and certification requirements will prevent the release of mercury during the processing of scrap vehicles, and will give handlers who process vehicles, or send them to another person for processing, a method of documenting that they are not improperly transporting, treating, or accepting hazardous wastes.

Subsection (d)(4) requires universal waste handlers to determine whether spilled mercury, cleanup residues, and any other wastes generated as a result of handling switches and thermometers exhibit a hazardous waste characteristic. If they do exhibit a characteristic, the wastes are fully regulated hazardous wastes; if they do not, they may be managed as nonhazardous waste, in accordance with federal, State, and local regulations.

Add Subsection (e) to Sections 66273.13 and 66273.33:

These new subsections contain management standards for waste dental amalgam. Because this material is solid at room temperature, it poses different risks than the liquid mercury found in switches, thermostats, and thermometers. These differences are reflected in this subsection's waste management standards for handlers of waste dental amalgam. The standards for amalgam do not require handlers to have a mercury spill kit on hand, for example.

Amalgam fines smaller than 100 microns (or 1/250 inch) in diameter are currently fully regulated as hazardous waste. Due to stringent discharge limits imposed by their Regional Water Quality Control Boards, the providers of sewerage services in parts of the State are requiring dentists to install traps to capture amalgam fines that would otherwise enter the drain. These subsections would allow management of single-use amalgam traps, as well as amalgam fines and sludges removed from reusable traps, lateral lines, etc., as

universal waste. They would also allow management of extracted teeth with amalgam restorations as universal wastes.

Due to mercury's volatility, subsection (e)(1) of these two sections requires handlers to accumulate amalgam waste in airtight containers. Two other prohibitions in the waste management standards are also intended to prevent the release of amalgam waste to the environment. Subsection (e)(2) prohibits handlers of universal waste amalgam from rinsing amalgam traps into a sink, and subsection (e)(3) prohibits them from placing amalgam waste into a medical waste container.

The proposed universal waste management standards for amalgam waste prohibit handlers from placing amalgam into medical waste containers because, in most cases, medical waste is incinerated. While medical waste incinerators are generally equipped with air pollution control devices designed to trap pollutants, some of the mercury in incinerated medical waste inevitably escapes to the atmosphere. Keeping it from being incinerated is a more effective strategy for preventing the release of mercury to the environment than is allowing it to be incinerated and then attempting to trap it.

Add Subsection (f) to Sections 66273.13 and 66273.33:

These new subsections contain standards for the management of universal waste gauges. These products may contain many grams of mercury, and they generally include openings through which mercury could potentially escape. Additionally, the mercury in a universal waste gauge is often found in a glass tube, which can easily be broken, allowing mercury to be released. The proposed management standards for handlers of universal waste gauges were developed with these factors in mind.

Handlers are required, by subsection (f)(1)(A), to close all openings through which mercury could escape, in order to prevent spills or leaks of mercury. As a further precaution, subsection (f)(1)(B) requires that each gauge must be sealed in a plastic bag, which is then placed in a closed, structurally sound, compatible container that contains packing materials adequate to prevent breakage of gauges. Gauges must be kept upright during handling, accumulation, and transportation, in order to minimize the chance of mercury spills.

Subsection (f)(2) gives handlers the option of draining the mercury from universal waste gauges that they have generated (handlers may not drain the mercury from gauges that are received from other handlers, however). Because draining large numbers of gauges at a single consolidation site would increase the risk and potential size of mercury spills, only the handler who generates a universal waste vacuum or pressure gauge would be allowed to drain of mercury from the gauge, and draining could occur only at the site where the universal waste gauge was generated.

Draining mercury from gauges is a fairly common practice. At least one manufacturer of mercury sphygmomanometers offers sphygmomanometer service kits, which include one or more one-pound bottles of mercury. As a part of maintenance, mercury is drained from sphygmomanometers and replaced with fresh mercury from the kit. Because the sphygmomanometer will continue to be used after the mercury is changed, they are not considered wastes under current regulations and the draining activity is not considered hazardous waste treatment. However, a discarded sphygmomanometer would be classified as a hazardous waste, and draining mercury from it would currently be considered hazardous waste treatment requiring a permit.

The draining process itself poses risks of releases of mercury and of worker exposure to mercury vapors. For these reasons, subsections (f)(2)(A) through (f)(2)(J) of sections 66273.13 and subsection (f) 66273.33 require handlers who wish to drain mercury from gauges to comply with a number of requirements:

- 1) Develop and follow written procedures for safely draining mercury;
- 2) Drain gauges over a containment device;
- 3) Keep a mercury spill clean-up kit on hand;
- 4) Transfer drained mercury to an appropriate container;
- 5) Drain mercury in a well-ventilated area and monitor the area for compliance with OSHA mercury exposure levels;
- 6) Train employees in draining procedures, waste handling, and emergency procedures;
- 7) Store drained elemental mercury in an appropriate container, which is placed in a compatible secondary container;
- 8) Keep records of the gauges drained; and
- 9) Not accumulate more than 35 kilograms of drained mercury at any time.

Whether or not they drain liquid mercury from universal waste gauges, handlers are required [by subsections (f)(1)(C) and (f)(2)(C)] to have a mercury clean-up system readily available, and to immediately transfer any spilled mercury to an airtight container. Handlers are required, by subsection (f)(3)(A), to determine whether mercury that spills or leaks from universal waste gauges during management exhibits any hazardous waste characteristic. They must also determine whether absorbent materials used to clean mercury spills, and any other clean-up residues, exhibit a characteristic. If spilled mercury or cleanup residues are found to be hazardous, they are not universal wastes but are instead fully regulated hazardous wastes. However, drained universal waste gauges that exhibit a hazardous waste characteristic may continue to be managed as universal waste; drained gauges that are not hazardous may be managed accordingly.

Add Subsection (g) to Sections 66273.13 and 66273.33:

These new subsections contain management standards for mercury-added novelties. As discussed earlier, the term “mercury-added novelty” is contained in Public Resources

Code section 15025. Public Resource Code section 15027 bans the manufacture and sale of these products, effective January 1, 2003. "Novelties" is a broad category encompassing products containing varying amounts of mercury, which may be in an elemental or an oxidized form. Some mercury-added novelties can appropriately be managed under the standards for one of the other types of universal waste.

These two subsections provide management standards for several categories of novelties:

- Novelties whose only mercury is contained in battery or batteries;

Pursuant to subsection (g)(1), novelties whose only mercury is contained in batteries (and batteries removed from such novelties) will be subject to management under the standards for universal waste batteries in existing subsection (a) of 66273.13 and subsection (a) of 66273.33. After all batteries have been removed, if a novelty is not hazardous for any other reason, it may be managed as nonhazardous waste.

- Novelties that are painted with mercury containing paint;

Spillage or leakage of liquid mercury is not an issue during the handling of novelties that are painted with mercury-containing paint. However, mercury could volatilize from painted novelties, causing potential inhalation risks and the release of gaseous mercury to the environment. Mercury-containing paint may also flake off of painted novelties. For these reasons, subsection (g)(2) of section 66273.13 and subsection (g)(2) of 66273.33 require universal waste handlers to accumulate mercury painted novelties in airtight containers.

- Novelties that contain free liquid mercury; and

Novelties that contain free liquid mercury (i.e., mercury that is not contained in a switch or other encapsulated device), may be fragile and may have openings through which mercury could escape. Because they pose risks similar to those of mercury gauges, the management standards proposed for this type of novelties in subsection (g)(3) are very similar to those for gauges. Handlers are required to pack them in undamaged, closed, structurally sound, and airtight containers with packing materials that are adequate to prevent breakage. Handlers must also keep a mercury cleanup system readily available while handling novelties that contain liquid mercury.

- Novelties that contain mercury switches.

Pursuant to subsection (g)(4), universal waste novelties whose only mercury is contained in a switch or switches are regulated under the standards for universal waste switches and thermometers in proposed subsections 66273.13(d) and 66273.33(d).

Handlers are required, by subsection (g)(5), to determine whether mercury that spills or leaks from universal waste novelties during management exhibits any hazardous waste characteristic. They must also determine whether absorbent materials used to clean mercury spills, and any other clean-up residues, exhibit a characteristic. If spilled mercury or cleanup residues are found to be hazardous, they are not universal wastes but are instead fully regulated hazardous wastes. These requirements are similar to, and are based on, existing standards for handlers of universal waste batteries and thermostats.

Add Subsection (h) to Sections 66273.13 and 66273.33:

These subsections govern the management of universal waste mercury counterweights and dampers, which currently are fully regulated hazardous wastes. These items can contain large amounts of mercury, which is generally fully encapsulated within the product. Mercury counterweights and dampers are often less fragile than other types of mercury-containing products. However, due to the large amount of mercury that these products may contain, as well as the possibility that some may be breakable, a number of management requirements will be imposed on handlers of universal waste counterweights and dampers. Handlers will be required, by subsections (h)(1) through (h)(4), to:

- Recycle counterweights and dampers (no disposal will be allowed);
- Pack them with materials adequate to prevent breakage;
- Pack them in a closed, undamaged, structurally sound container that is compatible with mercury;
- Place leaking, spilling, or damaged counterweights or dampers in a sealed plastic bag in an airtight container; and
- Have a mercury clean-up system readily available.
- Manage spilled mercury and clean up residues that exhibit a hazardous waste characteristic as fully regulated hazardous waste.

These requirements are intended to prevent releases of mercury to the environment and to prevent worker exposure to mercury vapors.

Add Subsection (i) to Sections 66273.13 and 66273.33:

These subsections govern the management of universal waste dilators. Several types of gastrointestinal and esophageal dilators are used in certain medical procedures; some use mercury for weight. These devices may contain many grams of mercury, which is contained in a rubber tube. While not especially fragile, these tubes could rupture, releasing mercury. The standards for universal waste dilators are designed to minimize the possibility of such releases. Damaged or leaking dilators are subject to additional packaging requirements, to ensure that liquid mercury and mercury vapors are contained. The requirements for small quantity handlers, in subsections (i)(1) through (i)(4), include:

- Packing dilators with materials adequate to prevent breakage;
- Packing dilators in a closed, undamaged, structurally sound container that is compatible with mercury;
- Placing leaking, spilling, or damaged dilators in a sealed plastic bag in an airtight container; and
- Having a mercury clean-up system readily available.
- Managing spilled mercury and clean up residues that exhibit a hazardous waste characteristic as fully regulated hazardous waste.

All of these requirements are intended to prevent the accidental release of mercury to the environment during handling and transportation of dilators.

Add Subsection (j) to Sections 66273.13 and 66273.33:

This subsection governs the universal waste management of discarded rubber flooring that contains mercury. Samples of such flooring, which was used in gymnasiums until the late 1970s, were tested and found to exceed the TCLP for mercury, making the flooring hazardous waste when discarded.

Mercury-containing rubber flooring is unlike the other mercury-containing wastes for which new management standards are proposed. Its mercury is not in a liquid form, and is not contained in a discrete component of the waste. Spillage of the mercury is, therefore, less of a concern than for the other new universal wastes. Further, pieces of waste flooring may be generated that are too large to fit in a drum or other common container. Consequently, the waste management standards in this subsection are minimal; they require only that flooring be managed “in a way that prevents releases of any universal waste or component of a universal waste to the environment.”

Add Subsection (k) to Sections 66273.13 and 66273.33:

These new subsections contain standards for the management of universal waste gas flow regulators. These devices, which were attached to older gas meters, may contain 100 grams or more of mercury. They generally include openings through which mercury could potentially escape. The mercury in a universal waste gas flow regulator is usually found in a small cup, which can easily spill during removal. The proposed management standards for handlers of universal waste gas flow regulators were developed with the prevention of such spills in mind. Handlers are required by subsection (k)(1) to keep universal waste gas flow regulators upright during handling. As a further precaution, subsection (k)(2) requires that regulators must be sealed in a closed, structurally sound, compatible container.

Handlers of universal waste gas flow regulators are required, by subsection (k)(3), to have a mercury clean-up system readily available, and to immediately transfer any spilled mercury to an airtight container. Handlers are required by subsection (k)(4) to determine

whether mercury that spills or leaks from universal waste regulators during management exhibits any hazardous waste characteristic. They must also determine whether absorbent materials used to clean mercury spills, any other clean-up residues, and drained gas flow regulators, exhibit a characteristic. If spilled mercury or cleanup residues are found to be hazardous, they are not universal wastes but are instead fully regulated hazardous wastes. If they are not hazardous, they may be managed accordingly.

Amend Sections 66273.14 and 66273.34:

These sections, which parallel language found in 40 C.F.R. sections 273.14 and 273.34, specify waste-specific labeling requirements for universal wastes. Handlers of universal waste are required to label or mark universal waste or the containers of universal waste to clearly indicate the waste description with one of the following phrases: "Universal waste-- ___", "Waste ___", or "Used ___", with the blank filled in with the applicable type of universal waste such as battery(ies), thermostat(s), or lamp(s). These regulations add ten new categories of universal waste to chapter 23. New labeling standards, based on the existing standards for batteries, lamps, thermostats, and CRTs, are added for each new universal waste category. In addition to those for the ten new waste categories, labeling standards for the mercury drained from universal waste gauges are also added.

Amend Section 66273.19:

DTSC proposes to add a requirement to section 66273.19, to require small quantity handlers of the 10 newly-added universal wastes to comply with the same recordkeeping requirements that already apply to large quantity handlers of batteries, thermostats, and lamps. Under California's existing universal waste rules, small quantity handlers (persons who never accumulate 5,000 kilograms of universal waste) are not required to keep records of their shipments or receipts of universal waste batteries, thermostats, and lamps. Large quantity handlers are required to retain such records for three years from the date they ship or receive universal waste.

The requirement is added because most of the wastes in question contain relatively large amounts of mercury (several grams, or more). If even a small percentage of these products is improperly disposed, the mercury released would add to the State's already unacceptable level of environmental contamination with mercury. DTSC believes that this minimal recordkeeping requirement will impose a very small additional burden on small quantity handlers, while making it easier for State and local officials to verify that the affected wastes are being managed properly. The recordkeeping requirement will provide an incentive for handlers to comply with the other requirements in this section.

Add Sections 66273.21 and 66273.41:

These new sections pertain to the siting of universal waste handlers that accumulate mercury-containing universal wastes received from other handlers. Due to potential risks associated with the accumulation of large volumes of mercury-containing wastes at non-permitted consolidation sites, these sections list several criteria for offsite accumulation of the wastes. A universal waste handler who accumulates any of the ten new mercury-containing universal wastes anywhere other than at the site of generation must meet these criteria. The criteria are:

- Compliance with all applicable requirements for handlers of hazardous materials;
- Disclosure that mercury is being handled in all applicable business and use permitting applications;
- Compliance with the standards in section 66265.18, which pertain to locating facilities in a 100-year floodplain;
- Compliance with the seismic precipitation design standards in section 66265.25;
- Accumulation of the wastes only in areas that are zoned for commercial or industrial uses; and
- Accumulation of the wastes at a location that does not pose site specific land use hazards or contain sensitive habitat area, based on a review of state and local planning documents and constraints mapping.

The criteria are intended to prevent accumulation of mercury-containing universal wastes at locations that are inappropriate due to incompatibility of the activity with local land use or zoning, or that are not designed to withstand flooding or earthquakes.