CALIFORNIA ENVIRONMENTAL QUALITY ACT

INITIAL STUDY

The Department of Toxic Substances Control (DTSC) has completed the following Initial Study for this project in accordance with the California Environmental Quality Act (§ 21000 et seq., California Public Resources Code) and implementing Guidelines (§15000 et seq., Title 14, California Code of Regulations).

I. PROJECT INFORMATION

Project Name: Mercury Waste Classification and Management Regulations (Reference Number R-02-04)

Site Location:

The project is the adoption and implementation of statewide regulations governing the management of mercury-containing hazardous wastes as universal waste. The regulations do not address site-specific conditions and do not require or mandate construction of new facilities or infrastructure (i.e., buildings, roads, or recycling/disposal facilities). A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities), government entities, and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements.

Department Proposing Project:

Department of Toxic Substances Control
Hazardous Waste Management Program
1001 I Street, 11th floor
Sacramento, California 95814

Summary of the Proposed Regulations:

The proposed regulations would list four currently nonhazardous mercury-containing products as hazardous wastes when discarded. These mercury-containing products would be included in the California Code of Regulations, title 22, division 4.5, chapter 11, article 4.1, Additional Lists of Hazardous Wastes[1].

[1] Unless otherwise indicated, all regulatory references in this document are to the California Code of Regulations, title 22, division 4.5.

The proposed regulations would allow three of the newly listed mercury containing hazardous wastes and seven other mercury-containing hazardous wastes to be managed according to the universal waste requirements established in chapter 23, and according to the specific management requirements in the proposed regulations. [Newly listed mercury-containing (fluorescent) light bulbs or tubes are not included in the proposed regulations for management as universal wastes, because all light bulbs or tubes classified as hazardous wastes are already designated as universal waste and can be handled as a universal waste under the current Universal Waste Rule at section 66273.1 et seq. By virtue of being listed as hazardous waste, the newly affected lamps are automatically eligible for universal waste management under the current Universal Waste Rule.] Compared to traditional hazardous waste management standards, universal waste management standards provide simpler storage and shipment rules for well-characterized, lower risk hazardous waste. <u>However, under the proposed regulations, final disposal and recycling of mercury-containing wastes will be fully regulated according to all applicable hazardous waste requirements.</u>

The list below identifies the ten affected wastes, including three of the newly listed hazardous wastes. The proposed regulations designate these wastes as universal wastes, which allows them to be managed under universal waste standards.

1. Mercury-containing motor vehicle switches (newly listed)
2. Non-automotive mercury switches (newly listed)
3. Mercury-added novelties (newly listed)
4. Mercury thermometers
5. Mercury-containing rubber flooring
6. Dental amalgam
7. Mercury pressure or vacuum gauges
8. Mercury counterweights and dampers
9. Mercury-containing dilators
10. Mercury-containing gas flow regulators

The proposed regulations do not address naturally occurring mercury deposits, wastes generated from the mercury mining, or cleanup of mercury spills or contamination not related to management of the specific mercury-containing wastes identified in the regulations.

Background on Mercury

The proposed regulations primarily address the management of wastes containing elemental (metallic) mercury. Mercury is a toxic heavy metal that has been used for hundreds of years because of its physical and chemical properties. Liquid mercury has been used extensively in measurement devices such as

thermometers and barometers because it is a liquid at room temperature, expands at a uniform rate with increasing temperature, is relatively dense, and has a low surface tension. Liquid mercury conducts electricity, and is therefore used in a variety of electrical lights and switches. Mercury also readily forms alloys with many other metals, which is why it has been used in numerous industries to either form malleable metal compounds or extract precious metals bound in other materials. In addition, mercury can form other toxic organic and inorganic mercury compounds. The toxicity of these compounds has led to their use as fungicides and pesticides.

As a result of its long-term, widespread use, mercury has been continuously released into the environment so that varying levels of mercury contamination are found throughout California in air, soil, and water. This contamination is a serious concern because of mercury's (or mercury compounds') toxicity, mobility in the environment, and ability to bioaccummulate, particularly in aquatic organisms. Of significant concern is mercury's neurological and developmental toxicity to humans, who can be exposed to elemental mercury and/or mercury compounds in the environment through inhalation (e.g., breathing mercury vapors), dermal contact (e.g., skin touching elemental mercury or contaminated soil), or ingestion (e.g., eating mercury contaminated fish).

Mercury and Mercury Compounds

The physical, chemical, and toxic properties of mercury (Hg) are largely dependent on its oxidation state: Elemental or metallic mercury (Hg°); monovalent or mercurous mercury (Hg^{+}); or divalent or mercuric mercury (Hg^{++}).

Elemental mercury, also known as quicksilver, is the form of mercury most commonly used in industrial, electrical, and calibration/measurement applications. It is a dark-grayish viscous liquid metal often recognized by the public from its historic use in household thermometers.

Mercury can also bond covalently with carbon to form highly toxic organometallic compounds. The most environmentally significant organomercuric compound is methlymercury, which typically occurs as the salts known as methylmercuric chloride (CH_3HgCl) and methylmercuric hydroxide (CH_3HgOH). Whereas, the most environmentally significant inorganic mercury compounds are mercuric chloride ($HgCl_2$), mercuric hydroxide [$Hg(OH)_2$], and mercuric sulfide (HgS), also known as the mineral cinnabar.

Fate and Transport

Atmospheric transport and deposition of mercury contribute significantly to mercury contamination worldwide. Sources of atmospheric mercury include direct evaporation of elemental mercury or mercury compounds, combustion of mercury-containing materials (e.g., from coal-fired powerplants), and incineration

of mercury-containing materials (e.g., waste incinerators). Atmospheric mercury can occur in gaseous or liquid states (as aerosols or dissolved in rainwater) or as particulates (as soot or dust particles with bound mercury).

Mercury found in soil may be derived from atmospheric deposition; sedimentation, erosion or migration of particles with bound mercury; or direct discharge from chemical or mercury-containing material spills or releases. Of all environmental media, mercury is least mobile in soil because mercury and mercury compounds will tend to form immobile complexes with organic matter and minerals in soil. However, mercury accumulated in soil can also form soluble complexes and be leached out of the soil into runoff or groundwater.

Mercury in water may result from atmospheric deposition, sedimentation, direct discharge to surface water bodies, or from leaching into groundwater. The solubility in water of the various forms of mercury varies widely with the least soluble being elemental mercury and the most soluble being mercuric chloride. While much less soluble than $HgCl_2$, methylmercury is nearly 2,000 times more water-soluble than metallic mercury. The greatest environmental concern comes from mercury in water or saturated soil environments where mercury or inorganic mercury compounds may be subject to a complex process known as methylation, creating the highly toxic methylmercury. Methymercury can then enter the food chain and bioaccumulate, or it can also be released back to the atmosphere by evaporation and volatilization. However, exposure of mercury and methylmercury in water to sunlight has an overall detoxifying effect because the sunlight can break down methylmercury to divalent or elemental mercury. The transformed mercury can then leave the aquatic environment through evaporation, thus reducing the amount of mercury available for methylation and uptake in the aquatic food chain.

Toxicity and Exposure Paths

The toxic effects of mercury depend largely on chemical form and exposure path. Methylmercury is the most toxic form and exposure is usually by ingestion, where it is readily absorbed in the gastrointestinal tract and excreted more slowly than other forms of mercury. Methylmercury affects the immune, genetic and enzyme systems, and damages the nervous system and senses, including coordination, touch, taste, and sight. Of the various forms of mercury compounds, methylmercury is of particular concern because it is an especially bioavailable form of mercury and may be bioaccumulated. People are exposed to methylmercury almost entirely through ingestion of mercury-contaminated fish and wildlife.

Inhalation is the most significant exposure path for elemental mercury, followed by dermal exposure of airborne particles. About 80% of inhaled elemental mercury is absorbed by the body and readily crosses blood, brain, and placental barriers. It causes tremors, gingivitis, and excitability when vapors are inhaled

over a long period of time. [An example of this comes from the historic use of mercury in making hats, where hatters would exhibit these symptoms. The term "Mad as a hatter" developed as a result of the mercury exposure and symptoms.] Elemental mercury may leave the body in exhaled air, perspiration, and saliva. It can also undergo biotransformation in the body where it is oxidized to divalent mercury and may be excreted in feces and urine. Ingested elemental mercury is poorly absorbed in the digestive tract, and most of the ingested mercury is excreted in feces.

Ingestion of other common forms of mercury, such as mercury salts [e.g., mercuric chloride (HgCl2)], which damages the gastrointestinal tract and causes kidney failure, is not likely from environmental sources.

California Universal Waste Rule

The California universal waste requirements currently in place for batteries, thermostats, lamps and cathode ray tubes (CRTs) are based on the federal Universal Waste Rule (UWR). The federal UWR was designed to reduce the amount of hazardous waste in the municipal solid waste stream, and encourage recycling and proper disposal of certain common hazardous wastes. To achieve these goals, the federal UWR streamlines requirements related to notification, labeling, marking, accumulation time limits, training, release response, shipping, tracking, and transportation of specific hazardous wastes. Because the federal UWR is less stringent than existing federal Resource Conservation and Recovery Act (RCRA) requirements, adoption of the federal UWR by states authorized to implement RCRA is optional. States may adopt the entire rule or only portions of the rule, and states may also petition to add wastes to their universal waste programs that are not included in the federal UWR. California adopted permanent universal waste requirements for batteries, thermostats, and lamps in 2001 and emergency regulations for CRTs in 2002[2]. DTSC proposes in this rulemaking to add mercury-containing wastes to the existing California universal waste management program.

The State UWR requires generators to dispose of their universal wastes in hazardous waste landfills or recycle the wastes at authorized recycling facilities, but provides simpler storage and shipment requirements prior to recycling or disposal compared to full hazardous waste management requirements. The ultimate disposition of the waste (disposal or recycling) is fully regulated under hazardous waste facility requirements. The State UWR also allows transportation of universal wastes under a bill of lading or other record, instead of a hazardous waste manifest; and the universal wastes may be transported by common carrier instead of a registered hazardous waste transporter. In addition, to promote collection of the waste for final disposition at a hazardous waste disposal or recycling facility, businesses, government, or other entities and

[2] DTSC is proposing permanent regulations for CRTs in a separate regulation package; DTSC Reference Number R-01-06.

households may operate as offsite waste accumulation points without authorization from DTSC.

Project Objectives

The objectives of the proposed regulations are:

1. to prevent release of mercury to the environment;

2. to promote product substitution; and

3. to promote recycling of mercury.

Following are several reasons why universal waste management will provide superior environmental protection compared to the general hazardous waste management standards. This will occur even though specific regulatory standards for universal wastes are less restrictive than the general hazardous waste management standards:

1. <u>The nature of the wastes themselves</u>:

Universal wastes are a specific subset of hazardous wastes. As such, the risks they pose are well understood. If they are properly managed, the mercury-containing wastes DTSC proposes to designate as universal wastes pose less of a hazard during accumulation and transportation than the highest risk hazardous wastes. But if they are not properly disposed or recycled, these wastes pose serious hazards to public health and the environment. (This is why the UWR does not relax recycling or disposal requirements.) This lower risk results from:

A. The wastes are individually small and contain relatively small amounts of mercury (ranging from a few milligrams to a few hundred grams each). Each mercury switch, for instance, contains only about one gram of mercury. If most or all discarded products that contain mercury switches were managed as nonhazardous wastes, most of all of the mercury in the switches would likely be released during management or in the landfill. In the aggregate, the amount of mercury released would be significant, and would pose an unacceptable risk. However, if most or all of these products were managed as universal wastes (and ultimately recycled or disposed as hazardous wastes), mercury would be released only occasionally, when switches accidentally break. Most accidents occurring during the proper management of discarded switches would result in the release of a relatively small amount of mercury, posing a correspondingly small risk.

B. Universal waste types are individually designated in the regulations so that the sizes, quantities of hazardous constituents, physical properties, and

other parameters are well known and understood. Only those wastes with parameters that are consistent with management under the UWR are designated as universal wastes. The known and limited risks posed by universal wastes stand in stark contrast to the open-ended risks posed by the general class of hazardous wastes. The general hazardous waste management standards must address materials ranging from spent solvents to discarded nerve gas ordnance.

C. The mercury in most of these wastes is contained inside a manufactured product, or is in a state that would prevent it release to the environment (e.g., dental amalgam). Some of the products are composed of glass (in which case, the proposed management standards require careful management to prevent breakage), while others are more robust. If they are properly managed, these wastes would only occasionally break or leak, and only the relatively small amount of mercury contained in an individual product would be released. Further, the regulations would require packaging of fragile discarded products (and shipment of most of the affected products) in closed, compatible, structurally sound containers. Openings through which mercury could escape would be required to be securely closed in discarded products that have them. Cleanup residues and other wastes from leaks or spills of mercury from discarded products would be required to be managed under the general hazardous waste management regulations, providing a strong incentive to protect these wastes from breakage.

D. There are already successful management strategies in place for the existing universal wastes. Rechargeable batteries, for instance, can be dropped off at many retailers or mailed via a prepaid mailer to the Recyclable Battery Recycling Corporation. Under a similar program, thermostats can be sent to the Thermostat Recycling Corporation of America. There are currently two lamp recyclers in the State and a number of others in other states. Some of these lamp recycling firms provide prepaid containers for shipping waste lamps to their facilities. Others accept lamps that are collected and shipped by relamping contractors.

2. <u>The universal nature of their generation</u>:

Over one million California businesses and about 11 million California households generate universal wastes. Some of the specific universal wastes that would be designated by this proposal are generated by many or most of the State's businesses or households (e.g., "low mercury" lamps and mercury fever thermometers). Others are generated by specific types of generators (dental amalgam waste from dental offices; blood pressure gauges, and mercury dilators, from clinics and hospitals; counterweights and dampers from households). Hundreds or thousands of persons and businesses produce even these less commonly generated wastes. Due to the very large number of

generators of universal waste, including the proposed new mercury-containing universal wastes, application of the universal waste requirements (instead of the general hazardous waste control standards now applied to about 74,000 active generators of hazardous waste) will maximize the rate of diversion from the nonhazardous waste stream to hazardous waste recycling and disposal.

3. Business opportunities provided by regulatory simplification:

The ease with which a business can collect and accumulate universal wastes provides opportunities for new businesses to provide a major part of the solution for proper recycling or disposal of universal wastes generated by small businesses and households. Businesses will be created that will, for example, collect universal wastes on a route basis. These businesses would charge a small amount for taking the waste and would then accumulate larger quantities for shipment to recyclers and disposal facilities. Not only would the new businesses profit, but their customers would benefit from the simple and cheap method of properly disposing of the universal wastes.

Consideration of the points above led the U.S. EPA to develop the federal UWR.

4. California Legislative directives:

The California Mercury Reduction Act of 2001 (the Act) [Senate Bill (SB) 633 (Sher), stats. 2001, chapter. 656, Health and Safety Code sections 25212 and 25214.5, et seq.] declared that the identification and elimination of unnecessary sources of mercury that may contaminate the environment is a critical task, especially where the cost of mercury cleanup or removal is far greater than the societal benefits of continuing to use certain mercury-containing consumer products. The Act conditionally bans the future manufacture, use or sale of mercury-added novelties, mercury fever thermometers, and vehicles with mercury switches. It also subjects mercury-containing vehicle light switches to regulation according to the standards in the UWR at chapter 23, section 66273.1, et seq. However, the UWR does not include standards specific to mercury switches. Therefore, although the Act does not specifically require development of regulations, DTSC is responding to the legislative directive by establishing universal waste management standards for mercury switches as part of these proposed regulations.

The Initial Statement of Reasons for the proposed regulations, which is incorporated by reference, contains a detailed description of DTSC's reasons for promulgating the regulations.

Project Description – The Proposed Regulations

The full text of the proposed regulations is incorporated by reference and is available for review on the DTSC Internet site at www.dtsc.ca.gov. Copies of the

proposed regulations are also available from Ms. Joan Ferber, DTSC Regulations Coordinator, at (916) 322-6409.

Listing of Discarded Mercury Products as Hazardous Waste

To help ameliorate California's continuing mercury contamination problems, the proposed regulations amend the hazardous waste identification criteria by specifically identifying, or "listing", four mercury-containing products that will automatically be considered hazardous waste when discarded.

Under existing hazardous waste identification criteria, these wastes are frequently classified as nonhazardous because the concentration of mercury is "diluted" by the total mass of the waste being tested. Consequently, the mercury contained in the waste may be released to the environment because the waste is managed as nonhazardous at facilities not designed to control the release or migration of mercury into the environment. "Listing" the discarded mercury-containing products as hazardous waste will help to ensure that the wastes are disposed or recycled at hazardous waste facilities designed to control potential releases and migration of mercury into the environment.

The products proposed for listing were selected according to the availability of non-mercury alternatives and the feasibility of recycling the product for the contained mercury. By designating these products as hazardous wastes when discarded, DTSC hopes to ensure proper management of the products' mercury content as well as encourage the development and use of non-mercury substitutes.

Table 1 identifies the proposed California hazardous waste number and the currently nonhazardous, mercury-containing products that the proposed regulations would list as hazardous. Table 1 also provides a basis for the proposed listing, further describes the product proposed for regulation, and provides the effective date of the regulation of the product.

Table 1. Proposed Listed Mercury Wastes and Basis for Proposed Listing.

Proposed California Hazardous Waste No.	Proposed Listed Hazardous Waste.	Basis for Proposed Listing.
M001	Mercury-containing motor vehicle switches, and any motor vehicles that contain such switches, when any	This listing in part implements the SB 633 mandate that mercury-containing vehicle light switches removed from vehicles be subject to universal hazardous waste requirements. These switches are about 1½" in size and contain approximately 1 gram of elemental

Proposed California Hazardous Waste No.	Proposed Listed Hazardous Waste.	Basis for Proposed Listing.
	person decides to crush, bale, shred, or shear the vehicle. (Motor vehicles without mercury switches, vehicles with switches removed, or vehicles with switches that cannot be removed due to accidental damage to the vehicle are excluded.)	mercury in a sealed vacuum glass vial. The intent of listing the vehicle switches as hazardous waste is to encourage handlers to remove the switches prior to shredding. When vehicles are shredded or crushed, the enclosed switches are also crushed, releasing elemental mercury into the environment. Requiring hazardous waste management of shredded motor vehicles from which the switches have not been removed further reinforces the intent that switches should be removed from vehicles. DTSC estimates that the vehicles shredded annually in California contain between 0.75 and 1.5 tons of mercury. Of this amount, nearly half of the mercury then contaminates the nonmetallic components of the shredded vehicle waste and the other half gets released into the environment, primarily to air. In addition to the mercury-containing vehicle light switches addressed in SB 633, this listing also covers any other type of mercury switch found in vehicles, including mercury switches used in antilock brake systems (ABS). It should be noted, however, that the effective date of the listing is delayed until January 1, 2005 to be consistent with SB 633 provisions.
M002	Non-automotive mercury switches and products containing such switches. This includes mercury switches from household appliances, relays, silent wall switches, and mercury-containing flame sensors. (Appliances and products from which the mercury switches have been removed are not included in this category.)	Because use of mercury-containing switches is not limited to motor vehicle applications, this listing is being established to address mercury-containing switches found in appliances or used outside of vehicle applications. Smaller products that contain mercury switches may already be considered hazardous waste when discarded. However, a large household appliance, such as a washing machine, containing a single mercury switch might not currently be classified as hazardous waste when it is discarded because the volume of mercury is “diluted” by the mass of the appliance. [For example, a product weighing more than 50 kilograms (110 pounds) and containing 1 gram of mercury (one mercury switch) might not exceed the mercury Total Threshold Limit Concentration (TTLC) regulatory level of 20 mg/kg]. DTSC’s intention in designating non-automotive mercury switches, and products containing mercury switches, as hazardous wastes is to ensure that mercury switches are removed from products prior to crushing or other waste management processing that could cause mercury to be released to the environment. This listing would become effective on February 9, 2004.

Proposed California Hazardous Waste No.	Proposed Listed Hazardous Waste.	Basis for Proposed Listing.
M003	Mercury-containing light bulbs or light tubes from electrical lamps (i.e., fluorescent light tubes).	Mercury-containing "lamps", such as fluorescent light tubes, that exhibit a hazardous waste characteristic[3] are currently eligible for management under the existing California universal waste requirements. However, samples of some currently available fluorescent lamps, while not free of mercury, have not exceeded the hazardous waste toxicity characteristic regulatory level. Therefore these lamps have not been subject to hazardous waste or universal waste management requirements. These lamps are being discarded in the municipal (non-hazardous) solid waste stream in unlimited quantities without consideration for the mercury contained in the waste. Disposal of low mercury lamps in municipal solid waste streams is a concern because the amount of mercury entering the environment could paradoxically increase if people purchase, use, and dispose more lower-mercury lamps because they are considered non-hazardous, even though the lamps still contain approximately 5 mg of mercury per lamp. Therefore, DTSC is proposing to list all mercury-containing lamps as hazardous waste when discarded in order to ensure proper management or recycling of the mercury contained in the lamps. This listing would become effective on February 9, 2006. DTSC considered the possibility that reducing the existing regulatory thresholds might provide an incentive for manufacturers of fluorescent lamps to further reduce 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 disposed in municipal landfills. If the current rate of recycling were to remain constant or improve only modestly, the impact of lamp disposal could be mitigated if lamps entering the municipal solid waste stream contained less mercury. Lowering the hazardous waste thresholds for mercury would, arguably, encourage manufacturers to reduce the mercury content of lamps. DTSC believes, however, that the State's lamp recycling rate will improve significantly in the coming years, and that its 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

[3] Section 66273.9 defines a universal waste lamp as "…the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infrared regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps."

Proposed California Hazardous Waste No.	Proposed Listed Hazardous Waste.	Basis for Proposed Listing.
		improvement. Consequently, DTSC has concluded that designating all mercury-containing lamps as hazardous wastes will ultimately result in less mercury being released to the state's environment.
M004	Mercury-added novelties (such as toys painted with mercury-containing paints, or shoes with mercury switches that light up).	This listing applies to the range of mercury-containing products whose manufacture and sale have been banned in California, effective January 1, 2003, by SB 633. "Mercury-added novelty" means a mercury-added product intended for use as a practical joke, figurine, adornment, toy, game, card, ornament, yard statue or figure, candle, jewelry, holiday decoration, and item of apparel, including footwear. Mercury-added novelties can be divided into the following categories: 1. Novelties with liquid mercury; 2. Novelties with mercury switches; 3. Novelties with button-cell or other mercury-containing batteries; 4. Novelties painted with mercury-containing paint; and 5. Novelties with mercury-containing lamps. Some of the categories of discarded mercury-added novelties would currently qualify as hazardous waste under the existing waste classification system (such as novelties with liquid mercury), while others may not contain enough mercury (relative to the mass of the product) to exceed the regulatory level for a characteristic such as toxicity. Listing mercury-added novelties as hazardous waste when discarded is intended to capture those novelties that may not exhibit a hazardous waste characteristic but that still contain mercury that can be released into the environment. This listing would become effective January 1, 2004.

It should be noted that the "listing" of certain wastes is only an additional mechanism for identification of hazardous waste. **It does not replace the existing waste classification system.** Under the existing waste classification system, any waste that exhibits a characteristic of hazardous waste (by failing applicable tests and/or exceeding the regulatory level for any hazardous constituents) will still be considered a hazardous waste. The main difference between listed hazardous waste and waste otherwise classified as hazardous waste is that generators of "listed" hazardous waste do not have to test the waste or apply knowledge of the waste to determine whether it is hazardous or not.

The waste is automatically considered hazardous waste once discarded – no testing is required.

Regulation of Mercury Wastes as Universal Waste

The proposed regulations would allow ten specific mercury-containing wastes to be regulated according to universal waste requirements (as established in chapter 23 and in the proposed regulations). The ten mercury-containing wastestreams are identified below in Table 2. In addition to wastes already known to be hazardous, the identified wastes include three of the four mercury-containing wastes proposed for listing as part of this rulemaking. (The mercury-containing lamps proposed for listing are not included in this group of ten wastes because, once listed, they would be subject to regulation according to the existing universal waste standards for hazardous waste lamps.)

Table 2. Mercury Wastes Proposed for Management as Universal Wastes.

Mercury Wastestream	Wastestream Description and Management Information
Mercury-containing motor vehicle switches (and motor vehicles containing such switches). (newly listed)	The switches themselves contain approximately 1 gram of mercury and are currently subject to regulation according to full hazardous waste requirements. However, under current hazardous waste identification criteria, vehicles, appliances and products that have not had the mercury-containing switches removed may end up being classified as nonhazardous waste because the concentration of mercury is "diluted" by the total mass of the waste being tested. These wastes are then disposed in municipal landfills where landfill operations (crushing, spreading, and compaction of wastes) may cause the mercury to be released within the landfill. The shredding of vehicles, large appliances and other products with mercury switches is a significant source of mercury in California. (Household appliances are likely the largest contributor.) Management of automotive mercury switches, and motor vehicles that contain such switches, under universal waste requirements will help ensure that the mercury is managed appropriately and also serve as an incentive to remove mercury switches from vehicles prior to disposal.
Non-automotive mercury switches (and products that contain such switches). (newly listed)	Non-automotive mercury switches include switches from household appliances; relays; silent wall switches; float switches; and flame sensors. The switches are essentially the same as those used in motor vehicles and are being proposed for regulation as universal waste for the same reasons.
Dental amalgam wastes.	Dental amalgam is a metallic alloy consisting primarily of mercury, silver, copper, and tin, with mercury comprising around 50 percent of the amalgam materials. Currently, dental amalgam is subject to full hazardous waste management requirements unless the amalgam is recycled. Under current practices, large pieces of amalgam are often captured in drain traps and

Mercury Wastestream	Wastestream Description and Management Information
	recycled along with excess, unused amalgam. However, smaller pieces of extracted or waste dental amalgam may often be either washed down the drain to the sewer or septic system, disposed with biomedical waste destined for incineration, or thrown in the trash and subsequently disposed at a municipal landfill or incinerated. All of these disposal routes allow mercury to be released without control into the environment.
Mercury pressure or vacuum gauges.	Mercury-containing pressure or vacuum gauges are defined as any device in which pressure is measured using the height of a column of liquid mercury (e.g., barometers, manometers, and sphygmomanometers). These gauges may contain 100 grams or more of mercury, are known to exceed the hazardous waste regulatory limit for mercury, and are currently subject to full hazardous waste management requirements. DTSC proposes to make universal waste management of waste pressure or vacuum gauges contingent upon recycling. Waste gauges not recycled would continue to be subject to full hazardous waste management requirements.
Mercury-added novelties. (newly listed)	Mercury-added novelties are defined as a mercury-added products intended mainly for personal or household enjoyment or adornment, including practical joke items, figurines, adornments, toys, games, cards, ornaments, yard statues or figures, candles, jewelry, holiday decorations, or apparel items such as footwear. Because mercury-added novelties may not contain enough mercury to classify as hazardous waste under existing requirements, they are usually disposed in municipal landfills where the mercury from the products can enter the environment. SB 633 banned the sale of mercury-added novelties, effective January 1, 2003. DTSC proposes (as part of this rulemaking) to list mercury-added novelties as hazardous waste when discarded to ensure proper control and management of the mercury contained in the novelties.
Mercury counterweights and dampers.	Mercury counterweights and dampers are enclosed devices that use liquid mercury for weight or dampening, including mercury bow stabilizers used in archery, mercury recoil suppressors used in shooting, and mercury counterweights used in clocks. These products contain significant amounts of mercury (e.g., a bow stabilizer could contain 100 grams or more of mercury) and are therefore currently subject to full hazardous waste management requirements.
Mercury thermometers.	Mercury thermometers are defined as thermometers that use the expansion and contraction of a column of mercury to measure temperature. Mercury thermometers are known to contain a gram or more of mercury. Because they exceed the TTLC for mercury, they are currently subject to full hazardous waste management requirements.
Dilators.	Mercury-containing dilators are flexible mercury-filled tubes used to dilate the gastro-intestinal tract for feeding patients or for specific medical procedures. Types of dilators include bougie tubes, Canter tubes, and Miller-Abbot tubes. Like mercury thermometers, they contain a relatively large amount of mercury,

Mercury Wastestream	Wastestream Description and Management Information
	exceed the TTLC for mercury when tested, and are currently subject to full hazardous waste management requirements.
Mercury containing rubber flooring	At least one brand of rubber flooring (used mainly in gymnasiums) was manufactured with intentionally added mercury (mercury was used as a plasticizer). This flooring has been tested and found to exceed the federal Toxicity Characteristic Leaching Procedure (TCLP) threshold for mercury (0.2 mg/l). While it is believed that mercury is no longer used in the manufacture of rubber flooring, management of any existing mercury-containing flooring waste is currently subject to full hazardous waste management requirements.
Mercury gas flow regulators	Some older residential gas meters (installed prior to 1961) contain mercury gas flow regulators, each of which can contain 100 grams of mercury. The handlers of these meters are, in most cases, gas company employees or their contractors. These gas flow regulators (and the meters containing them) would classify as hazardous waste when discarded due to the large amount of mercury contained in the device. Management of these gas flow regulators as universal waste would facilitate and provide an incentive for proper management and recycling (as opposed to disposal) of the mercury contained in the regulators by streamlining the removal, handling (including draining the mercury from the regulator) transportation, and storage requirements for the waste. (Recycling the mercury contained in the regulators further helps to control the amount of mercury that is potentially released to the environment through disposal or incineration.)

Changes in Management Standards for Mercury-Containing Universal Waste

This section describes how universal waste standards for the mercury containing waste would differ from the full hazardous waste management standards currently in place.

Generator/Handler: EPA identification numbers (ID) are generally required for hazardous waste generators. Under the proposed regulations, EPA ID numbers would only be required for large quantity handlers (those persons accumulating 5,000 kg or more total of universal wastes at any one time). Lack of EPA ID numbers for small quantity handlers would not, however, prevent handler inspection and enforcement because most businesses may be presumed to generate universal wastes, and thereby may be inspected as waste generators. Training requirements under the proposed regulations would be less stringent for handlers than for fully-regulated hazardous waste generators, requiring that employees be “informed” of proper universal waste management rather than

formally trained.[4] Records would not be required for training but would be required for shipments of waste, removal of mercury switches, and draining of mercury, as appropriate. However, draining of mercury gauges may only occur at the site of generation by handlers who generated the waste themselves. A hazardous waste management contingency plan is not required, but handlers must manage the waste to prevent releases, have spill kits immediately available, and develop/implement written procedures (including personal protective equipment) for mercury draining activities.

Households: Under California's UWR, on February 9, 2006 households become subject to the labeling, training, and accumulation time requirements that apply to small quantity handlers of universal waste. This project would permanently exempt households from these universal waste handler requirements. Instead, household generators of batteries, lamps, thermostats, and the ten proposed categories of mercury-containing universal wastes would be subject to the limited requirements that currently apply to electronic product generators under the State's emergency CRT regulations. Electronic product generators (which include most households) are exempt from all handler requirements, provided that they do not treat or dispose of CRT devices, and transfer them to either a handler or a permitted destination facility.

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 universal wastes: don't throw them away—get them to an appropriate destination facility.

Pursuant to section 66262.10 of the California Code of Regulations, household generators of hazardous waste are already subject to reduced requirements compared with most other generators. These reduced requirements apply to virtually all hazardous wastes, including wastes that, arguably, pose significantly higher risks than this project's proposed universal wastes. Further, many of the mercury-containing hazardous wastes proposed for designation as universal wastes by this project are not generated by households. The mercury in those wastes that are likely to be generated by households (mercury-added novelties, products that contain mercury switches, mercury counterweights and dampers) is fully contained and unlikely to be released from the unbroken discarded product.

Storage Requirements: In lieu of prescriptive storage requirements, the proposed regulations require mercury-containing universal wastes to be managed in a way that prevents release and to be stored in structurally sound, closed containers or packages. The regulations require any elemental mercury to be stored in closed, structurally sound containers and placed into a secondary

[4] Training for handling of hazardous materials, including safety, is required by the California Occupational Safety and Health Administration (CalOSHA) and federal OSHA rules. These proposed regulations do not change State and federal OSHA safety requirements.

container that is structurally sound and large enough to accommodate the contents of the primary container in the event of a leak or breakage.

Transport without Manifest: The proposed regulations allow transport of the wastes without use of a hazardous waste manifest. The lack of a manifest will make "cradle to grave" waste tracking more difficult, causing it to be more difficult to identify responsible parties at contaminated sites. However, all handlers of mercury-containing universal wastes would be required to keep records of all shipments of waste sent and received, thereby providing an alternative mechanism for waste tracking. In addition, shipments of mercury-containing universal wastes may be subject to U.S. Department of Transportation (DOT) requirements for hazardous materials, including shipping paper requirements. The DOT shipping papers would provide additional support and information for any necessary waste tracking and load identification.

Transport without a Registered Transporter: The proposed regulations would allow transport of the wastes without use of a registered hazardous waste transporter. Currently, the major benefit of the registered hazardous waste transporter requirement is a higher level of insurance and the ability, through enforcement, to revoke authorization to haul hazardous waste. However, California law requires all drivers, including common carriers, to carry specified levels of insurance when operating a vehicle in California. In addition, DOT requires a hazardous materials endorsement for transport of hazardous materials. As with the registered transporter requirements, the ability to revoke a DOT hazardous materials transport endorsement is available through enforcement of DOT hazardous materials transport requirements. Therefore, the main benefits of the transporter requirements are still addressed under the universal waste standards because insurance is still required via California motor vehicle requirements, and enforcement of hazardous materials (including hazardous wastes) transport requirements, including the hazardous materials endorsement, is available through DOT.

Intermediate Accumulation Points/Facilities: Under full hazardous waste regulation, these facilities would need a hazardous waste storage facility permit. Under the universal waste requirements, intermediate storage and accumulation points would not be subject to hazardous waste transfer and storage facility requirements, but would be subject to the universal waste handler requirements. No facility permit or other grant of authorization would be required. In addition, no public participation process, pre-approval review, or CEQA determination would be conducted by DTSC. Any project review, public notice, and CEQA determinations would be conducted pursuant to site-specific, local agency requirements.

In general, mercury universal waste accumulation facilities would be subject to the universal waste performance standards as opposed to the full set of prescriptive technical standards applicable to treatment, storage, and disposal

facilities under the hazardous waste management standards. Beyond individual waste generators, it is anticipated that collection and storage of mercury-containing products and universal wastes will be conducted at existing businesses or facilities, such as auto dismantling yards, retail stores, or other industrial operation. The proposed regulations require that accumulation of mercury-containing universal wastes received from other handlers be conducted at locations that are in compliance with all applicable hazardous materials requirements; comply with existing facility location and precipitation design standards; are in areas zoned for commercial or industrial uses; and do not pose site specific land use hazards or contain sensitive habitat areas. The facilities would also be subject to all applicable local zoning, building, or other business operation requirements. Facility emergency preparedness and contingency planning issues would be determined by local requirements and the State hazardous material release reporting, inventory, and response plan requirements[5] for any business that handles a hazardous material or waste in quantities equal to or greater than 500 pounds (approximately 227 kg).

Final Disposal or Recycling Destination Facilities: The proposed regulations would not change the existing requirements for disposal or recycling facilities that receive hazardous waste that contains mercury. These facilities would continue to be fully regulated according to existing hazardous waste facility requirements.

A comparison of the existing full hazardous waste management requirements and general universal waste management requirements is given below in Table 3. The general universal waste requirement given in Table 3 apply to all universal wastes, including batteries, thermostats, and lamps. In addition to the general universal waste requirements, universal waste management requirements specific to mercury-containing wastes are being established as part of this rulemaking. Table 4 provides a summary of the mercury waste-specific management requirements. These waste-specific requirements are exclusive to the mercury wastes and are designed to ensure that management of mercury wastes within the universal waste program is safe, low-risk, and appropriate to each individual mercury wastestream.

Table 3. Comparison of Full Hazardous Waste Management Requirements and General Universal Waste Management Requirements.

Type of Waste Handler	Hazardous Waste Management Standards	General Universal Waste Management Standards
Generator	Classify waste.	Classify waste.

[5] California Code of Regulations, title 19, division 2, chapter 4, article 4, sections 2729, et seq.

Type of Waste Handler	Hazardous Waste Management Standards	General Universal Waste Management Standards
	Notify/obtain an EPA ID number.	Obtain EPA ID number only if more than 5000 kg of UW onsite.
	Formal employee training, records retention.	Ensure that employees are trained.
	Contingency plan for hazardous waste areas.	No contingency plan.
	90/180/270 day accumulation time limit depending on generation rate and location.	Accumulation time limit of 1 year.
	Label according to waste and accumulation start time.	Label as universal wastes.
	Storage area standards – signs, separation of incompatibles.	Storage area signs not required.
	Container management standards – condition of containers, closed containers.	Protect universal wastes from breakage (release).
	Use of manifest for shipping and use of a registered hauler.	Manifest or registered hauler not required.
	Send only to permitted facility.	Do not dispose onsite. Take/send to intermediate handler, authorized disposal facility, or recycling facility. * Mercury-waste specific requirement: Handlers must keep records of all waste shipments sent and received for a minimum of three years.
Transporter	Registration – application, insurance.	No registration required.
	Take to permitted facility.	Unauthorized disposal (i.e., roadside dumping) prohibited. Transport to intermediate handler, authorized disposal facility, or recycling facility.
	Clean up releases.	Clean up releases.
	Use manifest.	No manifest but must keep some record (e.g., bill of lading, shipping paper, etc.)
Transfer facility – Exempt	Keep waste only 10 days in areas zoned industrial, six days in all other areas. No repackaging, pumping, or other treatment.	Keep only 10 days in areas zoned industrial, six days in all other areas. No repackaging, pumping, or other treatment.

Type of Waste Handler	Hazardous Waste Management Standards	General Universal Waste Management Standards
Transfer facility – Non-exempt	Need hazardous waste facilities permit or other grant of authorization (see facility standards for discussion of requirements).	No authorization required. Same standards as universal waste generator.
Intermediate accumulation facility	Hazardous waste storage facility permit or other grant of authorization (see facility standards below for discussion of requirements.	Same standards as universal waste generator (see above). No authorization required. * Mercury specific requirement: Handlers accumulating mercury wastes received from other handlers must meet the following conditions: 1. Accumulation at a given location must: a. be consistent with local land use zoning or land use patterns; b. comply with hazardous materials requirements; c. be disclosed on applicable business and use permitting applications; d. comply with location standards in CCR section 66265.18; e. comply with precipitation design standards in CCR section 66265.25; f. be located only in areas zoned for industrial or commercial use; and g. be located only in an area that does not pose site specific land use hazards or contain sensitive habitat. 2. Handlers must comply with all applicable hazardous materials requirements. 3. Handlers must disclose in all business license applications, land use permits, or other business forms that managing mercury and mercury-containing wastes.
Disposal or recycling facility	Hazardous waste disposal or recycling facility permit or other grant of authorization required. Permit process with public notice and comment, hearings, appeal rights. Pre-review and approval for all facility plans and documents prior to authorization.	Hazardous waste disposal or recycling facility permit or other grant of authorization required – same requirements as those shown under general hazardous waste management standards.

Type of Waste Handler	Hazardous Waste Management Standards	General Universal Waste Management Standards
	Hydrogeologic assessment and monitoring for some facilities. Individual CEQA determination. Extensive facility technical standards for security, waste analysis, waste acceptance, container and tank management. Priority for surveillance and enforcement by DTSC.	

Table 4. Summary of Mercury Waste Specific Universal Waste Requirements[6].

Mercury Waste Specific Universal Waste Management Requirements	Types of Universal Waste								
	Switches	Thermometers	Dental Amalgam	Gauges	Novelties (* with liquid Hg)	Counterweights and Dampers	Dilators	Rubber Flooring	Gas Flow Regulators
Manage wastes according to the general universal waste requirements established in Title 22, CCR, Chapter 23.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Households are exempt from hazardous waste and universal waste management requirements provided the wastes are transferred to another handler of universal waste or to a destination facility, and the waste is managed in a manner that prevents releases to the environment. **(X)** indicates wastes not likely to be generated by households.	**X**	**X**	**(X)**	**(X)**	**X**	**X**	**(X)**	**(X)**	**(X)**

[6] An "**X**" within a cell means the proposed regulations impose the specified management requirement on the particular waste.

Mercury Waste Specific Universal Waste Management Requirements	Types of Universal Waste								
	Switches	Thermometers	Dental Amalgam	Gauges	Novelties (* with liquid Hg)	Counterweights and Dampers	Dilators	Rubber Flooring	Gas Flow Regulators
Manage waste in a manner that prevents releases to the environment.	X	X	X	X	X	X	X	X	X
Contain leaking or damaged waste in sealed bag or container within a closed, structurally sound container.	X	X		X	X*	X	X		X
Label waste containers as universal waste, waste, or used and identify type of waste (e.g., mercury switches, gauges, etc.).	X	X	X	X	X	X	X	X	X
Record each shipment of wastes received or sent, and keep records for a minimum of three years. (Records may be in the form of a log, invoice, manifest, bill of lading, shipping paper, or other shipping document.)	X	X	X	X	X	X	X	X	X
Transporters are subject to applicable DOT requirements for hazardous materials.	X	X	X	X	X	X	X	X	X
Mercury from the wastes must be recycled in order to manage the wastes under universal waste requirements.	X	X	X	X	*	X	X		X
Pack outer container with compatible materials to prevent breakage of wastes during storage, handling, or transportation. (Similar to lab-packed container.)	X	X		X	*	X	X		
Securely close any openings and store upright.				X					X

Mercury Waste Specific Universal Waste Management Requirements	Types of Universal Waste								
	Switches	Thermometers	Dental Amalgam	Gauges	Novelties (* with liquid Hg)	Counterweights and Dampers	Dilators	Rubber Flooring	Gas Flow Regulators
Remove switches or drain mercury (generators only) only in accordance with conditions established in regulations:									
1. Remove mercury component in a manner that prevents breakage.	X								
2. Clean-up system readily available.	X			X					
3. Immediately transfer spilled or leaking mercury to airtight container within lab-pack like container.				X					
4. Drain mercury over or in a containment device sufficient to collect and contain any spills. (Onsite only.)				X					
5. Written draining protocol, appropriate tools, procedures, and protective equipment.				X					
6. Ensure employees are trained in and have access to appropriate tools, procedures, and protective equipment.	X			X					
7. Accumulate waste housings (e.g., switches, gauges, etc.) in closed, non-leaking containers lab-packed to prevent breakage during storage, handling, or transportation.	X			X					
8. Ensure area well ventilated and monitored for compliance with OHSA and Cal-OSHA requirements.				X					

Mercury Waste Specific Universal Waste Management Requirements	Types of Universal Waste								
	Switches	Thermometers	Dental Amalgam	Gauges	Novelties (* with liquid Hg)	Counterweights and Dampers	Dilators	Rubber Flooring	Gas Flow Regulators
9. Immediately transfer to, store, handle, and transport liquid mercury in a closed container in good condition, within another container.				X					
10. Document date of accumulation of liquid mercury, amount drained, and source.				X					
11. Accumulate no more than 35 kilograms of liquid mercury at any one time.				X					
12. Keep records of switch removal.	X								
Determine if any clean-up residues or other wastes generated from management of the mercury-containing universal wastes are hazardous. If hazardous, manage under full hazardous waste requirements. If non-hazardous, manage according to solid waste requirements.	X	X		X	X	X	X		X
Rinsing of traps, filters, or devices with discharge to sewers, wastewater treatment systems, septic systems, water, or land is prohibited.			X						
Disposal or management as medical waste prohibited.			X						

Agencies Having Jurisdiction Over the Project/ Types of Permits Required:

DTSC has the authority to adopt regulations governing the identification and management of hazardous wastes. The regulations are subject to review and

approval by the California Office of Administrative Law (OAL). However, OAL's review is limited to determining whether the regulations comply with the standards for regulations set forth in the California Government Code, and does not address the technical or policy aspects of the regulations or potential hazardous waste management impacts.

Implementation and enforcement of the hazardous waste generator regulations is conducted at the local level in large part by local agencies known as Certified Unified Program Agencies (CUPAs). CUPAs implement the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) and are responsible for inspection and enforcement related to hazardous waste generators, including universal waste hazardous waste generators. CUPAs also enforce requirements under Health and Safety Code section 25500, et seq. for business plans for businesses that handle hazardous materials. DTSC performs these functions in counties without CUPAs.

II. DISCRETIONARY APPROVAL ACTION BEING CONSIDERED BY DTSC

- ❑ Initial Permit Issuance
- ❑ Permit Renewal
- ❑ Permit Modification
- ❑ Closure Plan
- ■ Regulations
- ❑ Removal Action Plan
- ❑ Removal Action Workplan
- ❑ Interim Removal
- ❑ Other (Specify)

_____

Program/ Region Approving Project:

Hazardous Waste Management Program, DTSC Headquarters

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III. ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The boxes checked below identify environmental resources which were found in the following ENVIRONMENTAL SETTING/IMPACT ANALYSIS section to be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact".

- ❑ Aesthetics
- ❑ Agricultural Resources
- ❑ Air Quality
- ❑ Biological Resources
- ❑ Cultural Resources
- ❑ Geology And Soils
- ❑ Hazards and Hazardous Materials
- ❑ Hydrology and Water Quality
- ❑ Land Use and Planning
- ❑ Mineral Resources
- ❑ Noise
- ❑ Population and Housing
- ❑ Public Services
- ❑ Recreation
- ❑ Transportation and Traffic
- ❑ Utilities and Service Systems
- ❑ Cumulative Effects

IV. ENVIRONMENTAL IMPACT ANALYSIS

Existing Conditions: The Baseline for this Analysis

This analysis addresses the baseline for analyzing the impact of allowing ten wastes to be managed as universal waste.

The existing conditions for this analysis are not consistent for all ten affected wastes. For the seven wastes that are currently identified as hazardous wastes, the baseline for analyzing the impacts of the project is full hazardous waste management, with all the protections built into the system, including inspection and enforcement. For the three wastes that are not currently hazardous, the baseline for the analysis is nonhazardous waste management and disposal.

The actual situation is that many of the seven proposed universal wastes already regulated as hazardous wastes are often not disposed in hazardous waste landfills or sent to hazardous waste recyclers, as required by law. Few persons

accumulate unwanted mercury fever thermometers in a special, segregated area labeled with “danger, hazardous wastes” signs, for example. Few ship discarded mercury thermometers, mercury-added novelties, or products with mercury switches using a uniform hazardous waste manifest and a registered hazardous waste hauler.

Currently, California’s UWR temporarily exempts hazardous waste batteries, lamps, and thermostats generated by households from all universal waste management, recycling, and disposal requirements. Households may dispose of unlimited quantities of these wastes in nonhazardous municipal landfills until February 9, 2006. On that date, households become subject to the labeling, training, and accumulation time requirements applicable to small quantity handlers of universal waste. [These regulations propose a permanent exemption, provided the household meets certain conditions.]

The State’s emergency CRT regulations do not contain a similarly temporary disposal exemption for households. Instead, households that generate five or fewer CRT devices (primarily televisions and computer monitors) per year are regulated as “electronic product generators.” Electronic product generators are exempt from most handler requirements, provided they transfer CRT devices to a handler or household hazardous waste collection facility, and do not dispose of or disassemble them.

Households generate some of the mercury-containing wastes that these regulations propose to designate as universal waste. Most of these wastes are not currently identified or regulated as hazardous wastes (e.g., vehicles and other large products that contain mercury switches, certain “low mercury” fluorescent lamps, and certain “mercury added novelties”). Others are not commonly generated by households (e.g., mercury-containing motor vehicle switches, dental amalgam, mercury gauges, mercury dilators, mercury containing rubber flooring, and mercury gas flow regulators).

Under the full hazardous waste requirements, household hazardous waste generators are currently exempt from many of the requirements that apply to other generators. Consequently, small quantity handlers of universal waste are subject to more stringent requirements than are household generators of fully regulated hazardous wastes, including training requirements, labeling/marking requirements, and accumulation time limits.

Either these proposed Mercury Waste Classification and Management regulations will be adopted, or an attempt will be made to enforce full hazardous waste management standards for all generators of the affected mercury-containing hazardous wastes. This analysis must examine the two competing schemes for regulating the very large universe of generators of these wastes and determine if universal waste management would have significant impacts on the

environment compared to full regulation under hazardous waste management standards.

Regulatory Baseline for the Specific Wastes Affected by this Project

Mercury-containing motor vehicle switches:

When removed, these switches contain enough mercury to be classified as hazardous wastes. While they are still in a discarded vehicle, the vehicle in its entirety is considered to be a waste. The amount of mercury in a switch is generally not sufficient for a vehicle's mercury content to exceed the regulatory thresholds for hazardous waste classification. Scrapped vehicles that contain mercury switches are typically crushed, sheared, baled, and/or shredded while they still contain the switches. Because the vehicles are not hazardous wastes, these processing activities are not considered hazardous waste treatment. Nevertheless, virtually all of the mercury from the switches is released to the environment. Some is emitted directly to air, while some remains in the nonmetallic residue (known as "fluff") that is generated during shredding. Even after separation of the ferrous and nonferrous metals, the mercury concentration of shredder fluff does not typically exceed hazardous waste thresholds. Shredder fluff is often used as daily cover in nonhazardous waste landfills. Vehicles that are legally crushed, baled, sheared, and shredded in California each year have been estimated to contribute between 0.75 and 1.5 tons of mercury to the State's environment. This project would subject vehicles with mercury switches to standards that are more stringent than those that currently apply.

Non-automotive mercury switches:

A variety of products besides vehicles contain mercury switches. One of the largest categories of such products is certain older household appliances, which contain mercury off-balance switches, lid switches, or tilt switches. Some larger appliances that contain a mercury switch do not exceed hazardous waste thresholds for mercury. Nevertheless, statute requires the removal of their mercury switches "prior to crushing for transport or transferring to a baler or shredder for recycling." However, landfill operators who receive discarded appliances and find that recycling them is not economically feasible may dispose of the appliances as nonhazardous wastes, without first removing their mercury switches. Once removed, the switches are fully regulated as hazardous wastes. Other products that contain mercury switches are smaller, and are already classified as hazardous wastes. This project would provide reduced management requirements prior to disposition for mercury switches removed from appliances and other products, and for smaller discarded products from which mercury switches have not been removed. The proposed regulations would require proper recycling or disposal.

Mercury thermometers:

These products are currently classified as hazardous wastes when discarded. Mercury thermometers are widely used, and often are not disposed until they accidentally break. In many cases, broken thermometers are discarded improperly, in the nonhazardous waste stream. This project would provide reduced management requirements for discarded mercury thermometers prior to disposal or recycling, but would require proper disposal or recycling of these wastes.

Dental amalgam waste:

Dental amalgam fragments are currently exempt from hazardous waste regulation when recycled. Smaller fines often pass through the coarse traps in cuspidors and enter the sewer. However, many dentists are installing amalgam traps in their offices, which allow them to capture smaller amalgam "fines." These small particles are classified as hazardous waste and, unlike larger amalgam fragments, are not exempt from regulation as hazardous waste. This project would provide reduced management requirements for amalgam fines, as well as discarded single-use amalgam traps that contain such fines. The proposed management standards would preclude dental offices from rinsing amalgam traps down drains or placing discarded single-use traps into medical waste bags (which typically are destined for incineration).

Mercury pressure and vacuum gauges:

These products, which are mainly used in laboratories and health care facilities, contain relatively large amounts of mercury and are classified as hazardous wastes when discarded. Like thermometers, they would normally be expected to remain in use until they accidentally break. Mercury from broken gauges may often end up in sinks or in the nonhazardous waste stream. This project would provide reduced management requirements for discarded mercury gauges prior to disposition, but would require proper disposal or recycling of these wastes.

Mercury-added novelties:

This "catch all" category of discarded products includes "any item intended for use as a practical joke, figurine, adornment, toy, game, card, ornament, yard statue or figure, candle, jewelry, candle, holiday decoration, and item of apparel, including footwear." As can be seen from the list, these are products that would be expected to be generated almost exclusively by households. Some of these products contain enough mercury to exceed hazardous waste thresholds, while some may not. Those that are hazardous wastes would be subject to regulation as such. However, because the generators are households, they are exempt from many hazardous waste generator requirements. Households may currently transport mercury-added novelties and other hazardous wastes to a household hazardous waste (HHW) collection facility without the use of a

registered hazardous waste hauler or uniform hazardous waste manifest, for example. However, many or most of the mercury-added novelties generated by households likely are improperly disposed in the nonhazardous waste stream. This project would provide reduced management requirements prior to final disposition for households that generate mercury-added novelties. Mercury added novelties would be exempted from hazardous waste and universal waste management requirements, provided they are not disposed as nonhazardous waste and are transported to a universal waste handler or destination facility for proper recycling or disposal as hazardous wastes.

Mercury counterweights and dampers:

These products are primarily generated by households. They include bow stabilizers used in archery, recoil suppressors attached to some shotguns, and counterweights used in some clocks. All contain relatively large amounts of mercury (sealed inside) and are classified as hazardous wastes when discarded. As with mercury-added novelties, the households that typically generate these items are exempt from many hazardous waste management requirements. As is true for novelties, the proposed regulations allow households to self-transport counterweights and dampers to a HHW collection facility without a registered hazardous waste hauler or manifest. The project would exempt universal wastes, including mercury counterweights and dampers, from hazardous waste and universal waste management requirements prior to disposition, provided they are not disposed as nonhazardous waste and are transported to a universal waste handler or destination facility for proper recycling or disposal as hazardous wastes. This project would provide reduced management requirements for discarded mercury dilators, but would require proper management of these wastes.

Mercury dilators:

These items are generated exclusively by healthcare facilities. They contain a relatively large amount of mercury (sufficient to exceed the hazardous waste concentration thresholds). As hazardous waste generators, healthcare facilities that generate mercury dilators are subject to full hazardous waste management requirements. Many of these facilities are classified as small quantity generators of hazardous wastes, and as such may accumulate dilators and other hazardous wastes onsite for up to 180 or 270 days.

Mercury-containing rubber flooring:

Some rubber flooring installed in the 1970s has been determined to be hazardous waste when discarded. It is generated exclusively by gymnasiums and similar facilities, many of which are associated with schools, colleges and universities. Currently, this flooring is subject to full hazardous waste management. The mercury it contains is not in a liquid state, and would not be expected be readily released to the environment. This project would provide

reduced management requirements for discarded mercury-containing rubber flooring prior to disposition, but would require its proper disposal or recycling.

Mercury gas flow regulators:

These products were used in some residential gas meters until approximately 1962. To the extent that they are still in use, they are generated exclusively by utility companies that provide municipal gas service. While they are currently classified and fully regulated as hazardous wastes, they are likely self-transported by gas company personnel without use of a registered hazardous waste hauler or manifest. This project would provide reduced management requirements for discarded mercury-containing gas flow regulators prior to disposition in order to facilitate their proper recycling or disposal by gas company personnel.

Resource Impact Analyses

The following pages provide a brief description of the physical environmental resources that exist within the area affected by the proposed project and an analysis of whether or not those resources will be potentially impacted by the proposed project. Preparation of this section follows guidance provided in DTSC's California Environmental Quality Act Initial Study Workbook [Workbook]. A list of references used to support the following discussion and analysis are contained in Attachment A and are referenced within each section below. Controls incorporated in the proposed regulations which either avoid or reduce impacts to a level of insignificance are identified in the analysis within each section.

1. Aesthetics

Project activities evaluated for potential environmental impact:

- Regulate ten (10) specific mercury-containing wastestreams according to the universal waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, mercury-containing universal waste handlers will be located in urban, commercial, and/or industrialized areas throughout the state. Universal waste management activities or storage of wastes may be visible depending on individual site conditions.

Regulatory Setting:

Local agencies have the authority to establish land use, zoning, or building requirements that address the visual or aesthetic impacts of development. These requirements will vary statewide according to the local jurisdiction.

Visual aesthetics associated with development near designated state highways are addressed by the California Scenic Highway Program. This program is overseen by the California Department of Transportation (CalTrans) Office of State Landscape Architecture, and is implemented by local governments. The goal of the program is to preserve and enhance the natural beauty of California. Once a highway is designated, the local jurisdiction must adopt a program to protect the scenic corridor surrounding the designated highway segments. The local zoning and land use along the highway must meet the program minimum standards including prohibition of off-site billboards and permit controls and approvals on development density, design, and appearance of structures and equipment.

CalTrans also addresses scenic vistas constructed as part of or adjacent to highways in California. Scenic vistas are often associated with officially designated Scenic Highways, but may also be included in other roadway construction projects where there are outstanding points of scenic interest.

Analysis of Potential Impacts:

Beyond individual waste generators, collection and storage of mercury-containing products and universal wastes is primarily expected to be conducted at existing businesses or facilities, such as auto dismantling yards, retail stores, and other industrial operations. [For example, a retail business selling light fixtures may opt to accept and store waste mercury-containing lamps generated by its customers as a service to its customers.] These businesses usually have a physical infrastructure already in place (such as buildings and pavement) that dominates the visual and aesthetic impact of the site. Because universal waste management activities would be incidental to the main business activity onsite, management of the wastes at these businesses is not expected to significantly impact the visual or aesthetic impact of the site.

New businesses that might be established specifically to collect, manage and store universal wastes would be subject to local zoning, planning, and building requirements that address visual and aesthetic impacts in the area. Significant adverse aesthetic impacts are therefore not expected from these potential businesses because the buildings or sites would have to meet local land use criteria or building requirements or they would not be approved for construction or operation.

The following is a description of the extent to which project activities would:

a. Have a substantial adverse effect on a scenic vista; and

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.

The proposed regulations do not require or encourage activities that would cause adverse changes to scenic vistas or scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway. Businesses operating or planned for operation in the line of sight of a scenic vista or within a scenic corridor would be subject to requirements established by the local jurisdictions and/or the California Scenic Highway Program to protect the scenic resources. A business handling universal waste in accordance with the proposed regulations would not be expected to have a substantial adverse effect on a scenic resource or vista because the business would not be allowed to operate if it did not meet local zoning, building, and business requirements, including visual or aesthetic impact requirements.

c. Substantially degrade the existing visual character or quality of the site and its surroundings.

Local land use and building requirements, plus the waste management requirements established in the proposed regulations (e.g., wastes must be managed in a way that prevents releases and stored in closed containers in good condition), will help ensure that universal waste management will not substantially degrade the existing visual character or quality of a site or business. Therefore, existing sites should experience no significant visual degradation in response to adoption and implementation of the proposed regulations.

d. Create a new source of substantial light of glare which would adversely affect day or nighttime views in the area.

Existing facilities or business that could potentially handle universal waste usually already have established infrastructure (such as buildings, pavement and cemented areas) that represent the main sources of glare onsite. Any additional glare generated from universal waste containers stored outside, for example, would be insignificant compared to the glare generated from any existing buildings or pavement.

A new facility planned to be built specifically to handle universal waste as an intermediate collection or storage facility would need to meet local land use and building requirements, including visual impact requirements. Any such facility that did not meet local requirements would presumably not be approved and therefore would not create a new source of glare.

References:

Guidelines for the Official Designation of Scenic Highways, March 1996, State of California, Business, Transportation and Housing Agency, Department of Transportation. http://www.dot.ca.gov/hq/LandArch/scenic/shpg1.htm.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

2. Agricultural Resources

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the universal waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, mercury-containing universal waste handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory Setting:

Cities and counties have the authority to establish zoning and land use requirements within their jurisdictions. Usually, local area land classifications and land use designations for existing and future developments are identified in area planning documents, zoning ordinances and/or general plans. The California Department of Conservation, Division of Land Resource Protection, provides information and assistance to local jurisdictions to guide land use planning decisions to conserve farmland and open space resources.

Analysis of Potential Impacts:

The proposed regulations address the statewide listing and management of certain mercury-containing hazardous wastes. They do not address site-specific conditions and do not mandate or require construction of new facilities or additional infrastructure that would cause farmland to be converted to non-

agricultural uses. In addition, existing facilities, and any new facilities that might be established, that collect, manage, store, or transport mercury-containing universal wastes would be subject to local zoning, land use, planning, and building requirements. These local zoning and land use requirements address farmland designations and land uses.

Because the proposed regulations do not require new construction, and any facilities must comply with local zoning and land use requirements (including use of agricultural land), implementation of the proposed regulations will have no impact on agricultural resources.

The following is a description of the extent to which project activities would:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;

b. Conflict with existing zoning or agriculture use, or Williamson Act contract; and

c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural uses.

The proposed regulations do not address site-specific conditions and do not require new construction that would impact farmland or agricultural resources. In addition, existing and new facilities would have to comply with local zoning and land use requirements, including requirements for use of agricultural land. Therefore, implementation of the proposed regulations will not conflict with existing zoning or agricultural use or cause changes to the existing environment that could result in the conversion of farmland to non-agricultural use.

References:

Department of Conservation, Division of Land Resource Protection website for general information on assistance available to local agencies on agricultural land use designation and preservation: http://www.consrv.ca.gov/dlrp/index.htm.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

3. Air Quality

Project activities for potential environmental impact:

- Regulate ten (10) specific mercury-containing wastestreams according to the universal waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, mercury-containing universal waste handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory Setting:

Air quality issues for California statewide are overseen by the California Air Resources Board (CARB). CARB implements the federal air quality requirements and establishes health-based ambient air quality standards appropriate for California. Currently, standards have been established for nine criteria pollutants, including ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM –10), sulfates, lead, hydrogen sulfide, and visibility-reducing particles.

Air quality is also regulated at the regional or local level by Air Quality Management Districts (AQMDs) or Air Pollution Control Districts (APCDs). While mercury is not included as a statewide criteria pollutant, it is considered a toxic air contaminant. In general, however, air quality standards for regulation of mercury are focused on incineration, power generation, industrial process, and internal combustion vehicle emissions. These emission standards will vary according to local conditions and processes. For indoor or accidental exposure standards, CARB and the local air districts generally rely upon the California Occupation Safety and Health Standards Administration (CalOSHA) Permissible Exposure Limits (PELs) for worker exposure to airborne contaminants, including mercury. These requirements are found in Title 8, Chapter 4, California Code of Regulations, section 5155. The PEL for mercury (metallic and inorganic compounds) is 0.025 mg/cubic meter of air.

Analysis of Potential Impacts:

The main air quality impact from implementation of the proposed regulations is the potential for volatilization of any liquid mercury released from products during removal of the mercury or through spills or releases during management or transportation of the waste. However, any potential air quality impacts will have

a less than significant impact because, in addition to the general universal waste requirements, the following mercury-specific management controls have been built into the regulations:

- Any mercury-containing wastes that show evidence of leakage, spillage, or damage must be contained in closed, structurally sound, compatible containers. This requirement will prevent volatilization of mercury from leaking, broken, and damaged wastes.

- Mercury-containing wastes must be accumulated in closed, non-leaking containers and packed in materials to prevent breakage during storage, handling, and transportation. This requirement will prevent volatilization of stored mercury during handling and transport.

- Removal or onsite draining of mercury from switches, instruments, or products must be done by trained employees, in a manner designed to prevent breakage. This requirement ensures that employees are trained to properly manage the wastes so that mercury volatilization or exposure during removal or draining will be minimized.

- Removal of mercury can only occur in areas that are well ventilated and monitored to ensure compliance with applicable OSHA and CalOSHA exposure levels for mercury. This requirement ensures that universal waste handlers and employees are not exposed to mercury vapors in excess of established health standards.

- Spills must be cleaned-up immediately and released mercury placed in airtight containers. This requirement ensures that mercury spills and releases are not exposed for long periods of time, thereby minimizing the potential for increased volatilization of the exposed mercury with time.

- Mercury or mercury residue from spill cleanup must be managed according to full hazardous waste requirements, including manifests and registered transporters, if the waste meets the criteria for hazardous waste under the established hazardous waste classification system. This requirement provides the incentive for handlers to prevent spills since management of spill residue according to full hazardous waste requirements will be more costly and time-consuming than management of waste under universal waste requirements. Spill prevention and reduction means less mercury is exposed to air and potentially volatilized.

- No more than 35 kilograms (less than 6 pints) of elemental mercury can be accumulated at any one time. This requirement limits the volume of mercury that could potentially be spilled at any one time, thereby limiting the amount of mercury available for volatilization in the event of a spill.

Realistically, some spills and breakage of mercury-containing waste during generation, handling, or transportation of the waste can be expected. However, given the waste management controls established in the proposed regulations, and the economic incentives to not spill or release mercury, a less than significant impact on air quality is expected from implementation of the regulations as proposed.

The following is a description of the extent to which project activities would:

a. Conflict with or obstruct implementation of the applicable air quality plan.

The proposed regulations require that mercury wastes be appropriately contained; that any mercury from broken product housing be transferred immediately to air-tight containers; that removal of mercury switches and gauge draining be done in monitored, well-ventilated areas; and that any spills be cleaned-up and managed according to full hazardous waste requirements as necessary. These requirements will ensure compliance and consistency with applicable air quality plans or standards for mercury (e.g., the CalOSHA PEL).

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

As noted in a. above, the proposed regulations require that mercury wastes be appropriately contained; that any mercury from broken product housing be transferred immediately to air-tight containers; that removal of mercury switches and gauge draining be done in monitored, well-ventilated areas; and that any spills be immediately cleaned-up and managed according to full hazardous waste requirements as necessary. These requirements will help ensure that air quality standards for mercury (e.g., the CalOSHA PEL) are not violated and that management of mercury under the proposed regulations will not contribute to any existing or projected air quality violation.

c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

While mercury is a toxic air contaminant, it is not one of the nine criteria pollutants. Therefore, implementation of the proposed regulations and any mercury releases occurring from wastes managed according to the proposed regulations, will not impact air quality criteria pollutant concentrations in the state.

d. Expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are generally defined as sensitive human populations, such as children, seniors, sick, or infirm persons. Individual households or businesses

that generate and handle mercury-containing wastes may include sensitive receptors. The proposed regulations would not significantly change the management standards that apply to households; households are already exempt from many hazardous waste management requirements. The waste management requirements established in the proposed regulations for other handlers (including training, containment, and spill cleanup requirements) will help ensure that sensitive receptors are not exposed to substantial concentrations of mercury as a result of the management of mercury wastes in accordance with the proposed regulations.

e. Create objectionable odors affecting a substantial number of people.

The mercury wastes identified for management under the proposed regulations are not known to emit objectionable odors, and treatment of the waste that might cause an odor (such as chemical treatment) is not allowed under the proposed regulations. Therefore, no objectionable odors will be created or generated.

References:

California Air Resources Board website for information on criteria pollutants and mercury toxic air contaminant information: http://www.arb.ca.gov/.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

4. Biological Resources

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the universal waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory Setting:

Protection of wildlife habitat and designated threatened and endangered species is overseen by the California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (in federal jurisdictions). Local agencies may also establish and enforce policies, ordinances, or plans for wildlife protection, preservation, or habitat conservation.

Discharges of pollutants to surface and ground waters and discharges to land that may impact water resources are regulated by the State Water Resources Control Board and nine Regional Water Quality Control Boards. Discharges of dredge and fill materials and construction impacts to waters of the United States, including federal wetlands, are regulated by the United States Army Corps of Engineers according to Section 404 of the federal Clean Water Act.

Analysis of Potential Impacts:

The project is the promulgation and statewide implementation of regulations governing the management as universal wastes of specific mercury-containing hazardous wastes. The regulations do not address site-specific conditions and do not require or mandate construction of new facilities or infrastructure (i.e., buildings, roads, or disposal facilities) that would impact biological resources. Because the proposed regulations do not address site-specific conditions or construction projects that would directly impact biological resources, any potential impacts would likely be indirect impacts resulting from spills or releases of elemental mercury from mercury-containing universal waste. The proposed regulations address management of elemental mercury. The form of mercury most toxic to biological resources is methylmercury, which may form from the methylation of elemental mercury in aquatic or water saturated soil environments. To ensure that any impacts from implementation of the regulations would be less than significant, the regulations include the following discharge prohibitions and controls. These conditions are designed to prevent releases of elemental mercury to air, soil, or water that might impact biological resources or indirectly lead to production of methylmercury.

- While the proposed regulations do not mandate or require construction of new facilities, it is possible that new waste accumulation facilities might be built or existing facilities might expand in response to promulgation of the proposed regulations. In these cases, facility siting and construction activities would be subject to local land use, zoning, business, building, and environmental review requirements. In addition, the proposed regulations requires accumulation of mercury-containing universal wastes received from other handlers to: be in compliance with all applicable hazardous materials requirements; comply with existing facility location, seismic, and precipitation design standards; be located in areas zoned for commercial or industrial uses; and be located in areas that do not pose site specific land use hazards

or contain sensitive habitat areas. Construction discharges would also be subject to all applicable requirements imposed by state and federal agencies, including construction activities and discharges that might impact wildlife or habitat.

- Discharges to water and land are prohibited under the proposed regulations. This discharge prohibition ensures that mercury is not released to water or saturated soil environments during routine management of mercury wastes as universal wastes. This requirement should prevent the potential for methylation of elemental mercury and creation of highly toxic and bioaccumulative methylmercury.

- Wastes must be managed in a manner that prevents releases to the environment. This performance standard helps ensure that mercury is not released from wastes managed according to the proposed universal waste requirements.

- Any spills or releases must be immediately cleaned-up and managed appropriately. This requirement ensures that any impacts from non-routine or accidental spills of mercury from universal wastes are time-limited and minimal, so that any release of mercury to the environment is de minimis.

- Wastes must be stored in closed, structurally sound containers and packed to prevent breakage of wastes during storage, handling, or transport. The waste containment and closed container requirements included in the regulations help ensure that mercury is not released to the environment and that the mercury wastes do not generate air emissions that would impact biological resources or wildlife.

- No more than 35 kilograms (less than 6 pints) of elemental mercury can be accumulated at any one time. This requirement limits the volume of mercury that could potentially be spilled at any one time, thereby limiting the amount of mercury available for release (or methylation) in the event of a spill.

Realistically, spills and breakage of some mercury-containing wastes can be expected during generation, handling, or transportation of mercury-containing universal wastes. However, this is true even under the existing hazardous waste management requirements. Therefore, implementation of the proposed relations does not represent a change with respect to the potential for spills. Consequently, given the waste management controls established in the regulations, and the economic incentive to not spill or release mercury, a less than significant impact on biological resources is expected from implementation of the proposed regulations.

The following is a description of the extent to which project activities would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The proposed regulations prohibit discharges to water and land and do not require or mandate construction of new facilities or infrastructure. Any new construction undertaken in response to the proposed regulations would be subject to local land use, zoning, building, construction, and State and federal environmental requirements. In particular, any new construction would be subject to discharge prohibitions and controls established by State and federal agencies implementing the provisions of the federal Clean Water Act, including National Pollutant Discharge Elimination System (NPDES) discharge and stormwater permits, and Section 404 permits regulating construction dredge and fill activities.

The proposed regulations require accumulation of mercury-containing universal wastes received from other handlers to: be in compliance with all applicable hazardous materials requirements; comply with existing facility location and precipitation design standards; be located in areas zoned for commercial or industrial uses; and be located in areas that do not pose site specific land use

hazards or contain sensitive habitat areas. In the event of an accidental release of mercury, any spill cleanup activities would be time-limited and small in scale due to the spill cleanup requirements and limit on accumulation of elemental mercury drained from gauges. Therefore, there would be no substantial adverse impact on species, habitat, natural communities, federally protected wetlands, or migratory corridors from implementation of the proposed regulations. In addition, implementation of the proposed regulations would not conflict or impede any local policies, ordinances, or adopted conservation plans.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

5. Cultural Resources

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory Setting:

Identification, preservation, and protection of California cultural and historical resources (such as archaeological or paleontological remains, historic buildings, traditional customs, tangible artifacts, and historical documents) is overseen by the California Office of Historic Preservation. In addition, every local government in California has the authority to adopt local ordinances applying regulations to historic properties. However, local requirements will differ because every local community has different types of historic resources, populations, and development pressures.

Analysis of Potential Impacts:

Beyond individual waste generators, collection and storage of mercury-containing products and universal wastes is primarily expected to be conducted at existing

businesses or facilities, such as auto dismantling yards, retail stores, or other industrial operations. [For example, a retail business selling light fixtures may opt to accept and store waste mercury-containing lamps generated by their customers as a service to their customers.] Universal waste management activities would likely be incidental to the main business activity onsite. These existing businesses would be subject to local zoning, land use, and building requirements, including any public health or cultural and historic resource conservation requirements. New businesses that might be established specifically to collect, manage and store universal wastes would also be subject to local zoning, planning, and building requirements that address cultural and historic resources.

Because facilities managing mercury-containing universal waste would be subject to federal, State, or local requirements addressing cultural or historic resources, and the proposed regulations do not mandate construction of new facilities, implementation of the regulations will not impact cultural resources in the state.

The following is a description of the extent to which project activities would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5;

b. Cause a substantial adverse change in the significance of an archeological resource pursuant to 15064.5;

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and

d. Disturb any human remains, including those interred outside of formal cemeteries.

The proposed regulations do not address site-specific conditions and do not require new construction that would cause adverse changes to historical, archeological, and paleontological resources, or human remains as described above. In addition, existing and new facilities would have to comply with local zoning, land use, and building requirements, including requirements for protection and preservation of historical, archeological, and paleontological resources and necessary actions in the event human remains are found. Therefore, implementation of the proposed regulations will not cause any adverse change in historical, archeological, or paleontological resource, or disturb any human remains.

References:

California Office of Historic Preservation website for State and local government information on cultural and historical resources: http://ohp.parks.ca.gov/.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

6. Geology and Soils

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

California exhibits a very broad diversity of geologic environments, with human development superimposed on each. A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state, but the wastes may be generated and handled in all areas of the state, irrespective of the geologic conditions.

Regulatory setting:

Regional or local agencies establish zoning and building requirements necessary to address the geologic conditions within their jurisdictions, including building siting criteria and structural requirements.

In addition, the California Department of Conservation, California Geologic Survey (CGS), oversees programs related to geologic conditions statewide, including geologic hazards assessments and mapping, including the Seismic Hazards Mapping Act and the Alquist-Priolo Special Studies Zones Act. These programs provide the scientific information, such as maps and studies, necessary for individuals and local agencies to comply with established laws and regulations. The main purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to prevent the construction of buildings used for human occupancy on the surface trace of sufficiently active and well-defined faults in the State. The

Seismic Hazards Mapping Act of 1990 requires the State to establish regulatory zones that encompass areas prone to liquefaction (ground failure in water saturated soil) and earthquake-induced landslides and provide that information to local jurisdictions for use in planning and controlling construction and development. Currently, 63 official Seismic Hazard Zones have been established statewide, affecting six counties and 115 cities.

Analysis of Potential Impacts:

The proposed regulations address the statewide listing and management of certain mercury-containing hazardous wastes. The regulations do not address site-specific conditions and do not mandate or require construction of new facilities or additional infrastructure to manage the wastes. Existing facilities that may collect, manage, store, or transport mercury-containing wastes would be subject to any local land use and building requirements related to geologic conditions in the area, including local seismic concerns and soil conditions. In addition, the regulations require both existing and new facilities accumulating mercury-containing universal wastes received from other handlers to: be in compliance with all applicable hazardous materials requirements; comply with existing facility location[7] and precipitation design standards[8]; be in areas zoned for commercial or industrial uses; and be in a location that does not pose site specific land use hazards or contain sensitive habitat areas.

Any new structures that might be built to manage and accumulate mercury universal wastes would also be subject to the local business and building requirements established to address local geologic conditions. The structures would also have to comply with State requirements under the Alquist-Priolo Act and local requirements established in accordance with the Seismic Hazard Zones Act. The Alquist-Priolo Act prohibits locating structures for human occupancy[9] within the trace of a fault that has ruptured (displaced) during the last 11,000 years and requires the structure to be set back from the fault (usually 50 feet or more). Local construction, development, and seismic design criteria will

[7] Section 66264.18 requires that facilities not be located within 200 feet of a fault that has had displacement within Holocene time; and that facilities located in 100-year floodplains be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood or maximum tide.

[8] Section 66264.25 requires that facilities be designed to function without failure when subjected to capacity, hydrostatic and hydrodynamic loads resulting from a 24-hour probable maximum precipitation storm.

[9] A “structure for human occupancy” is defined in the California Code of Regulations, title 14, division 2, section 3601(e) as any structure used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year. In effect, this means that, along with non-exempt residential structures, any industrial or commercial structure that is staffed 40 hours per week, 50 weeks per year would be subject to the prohibitions in the Alquist-Priolo Act.

vary according to local conditions, but will usually include location and design criteria based on maximum credible or expected earthquake impacts.

Because the proposed regulations do not address site-specific conditions and do not require new construction, there should be no direct impact on geologic resources or conditions from implementation of the regulations. In addition, any existing structures or new construction that might be built or used to manage mercury-containing universal wastes would be subject to local zoning, planning, and building requirements, so no indirect impact on geologic conditions from existing structures or new construction is expected from implementation of the proposed regulations.

The following is a description of the extent to which project activities would:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42)*
- *Strong seismic ground shaking*
- *Seismic-related ground failure, including liquefaction*
- *Landslides;*

b. Result in substantial soil erosion or the loss of topsoil;

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; and

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of water.

The regulations do not site specific facilities and do not mandate or require construction of new facilities or additional infrastructure that would expose people or structures to adverse effects from fault rupture, seismic-related ground failure, liquefaction, or landslides; impact soils; or be located on unstable or expansive

soil. Disposal of mercury waste to wastewater treatment systems is prohibited under the proposed regulations, so there is no impact related to sewers or septic systems. Existing facilities that may collect, manage, store, or transport mercury-containing wastes would be subject to any local land use and building requirements related to geologic conditions in the area, including local building seismic design and soil foundation requirements.

The proposed regulations require existing and new facilities accumulating mercury-containing universal wastes received from other handlers to: be in compliance with all applicable hazardous materials requirements; comply with existing facility location and precipitation design standards; be located in areas zoned for commercial or industrial uses; and be located in areas that do not pose site specific land use hazards or contain sensitive habitat areas.

Construction of new structures that would accumulate universal waste and have workers onsite the equivalent of 2,000 hours per year would be subject to any local requirements established according to the Alquist-Priolo Earthquake Fault Act. In addition, construction of new structures where universal waste may be accumulated would also be subject to local building seismic design requirements and any local requirements established according to the Seismic Hazards Mapping Act of 1990.

References:

Department of Conservation, California Geological Survey website for Alquist-Priolo Earthquake Fault Zoning Act and Seismic Hazards Mapping Act requirements: http://www.consrv.ca.gov/CGS/index.htm.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

7. Hazards and Hazardous Materials

Project activities evaluated for potential environmental impact:

- List four (4) mercury-containing products as hazardous wastes when discarded.

- Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory setting:

Hazardous wastes that contain mercury (except batteries, thermostats, and lamps) are currently subject to full hazardous waste requirements, including generator accumulation time limits, identification numbers, and transport with a manifest and registered hazardous waste hauler (see Table 1 in the project description for a summary of full hazardous waste management requirements). The current hazardous waste regulatory level for mercury is 0.2 mg/L using the TCLP or California waste extraction test (WET), or 20 mg/kg using the TTLC. Regulatory oversight of hazardous waste programs is provided at the State level by DTSC. The U. S. EPA has also delegated authority to DTSC for implementation of the provisions of RCRA governing hazardous waste management. Oversight of hazardous waste generators is also provided by local agencies known as CUPAs.

Analysis of Potential Impacts:

<u>Waste Listing</u>

The four mercury-containing wastes proposed for listing as hazardous waste when discarded are frequently managed as non-hazardous waste even though the products may contain anywhere from 5 mg to over 1 gram of mercury. This is because the concentration of mercury may be "diluted" by the total mass of the waste being tested. Listing the wastes as hazardous waste ensures that the wastes will be managed as hazardous waste (or universal waste, which is a subset of hazardous waste), independent of the hazardous waste testing limitations. Listing also ensures they will be disposed or recycled in a way that controls or mitigates the potential for release of the mercury contained in the waste. This requirement is effectively more stringent than the existing requirements because it removes the potential that a non-hazardous test result due to dilution of mercury during the testing process would enable the waste to be managed and disposed as non-hazardous. Thus, the listing ensures that the mercury-containing wastes will be managed appropriately. Therefore, DTSC has determined that implementation of this aspect of the proposed regulations will not have an adverse impact on human health and safety or the environment.

Management as Universal Waste

The existing hazardous waste generation, management, and transportation requirements were originally adopted to address management of large volumes of industrial wastes and establish a mechanism to control and track the wastes from generation to final disposal. One goal of the hazardous waste regulatory system is to prevent illegal or inappropriate disposal of highly toxic industrial wastes. However, the generation and intermediate management of the identified mercury-containing wastes represent lower management risks than the industrial wastes originally targeted for regulation as hazardous waste. Consequently, the proposed requirements have been tailored to the lower risks associated with the intermediate management of the wastes. At the same time, the regulations retain full hazardous waste management requirements for the higher risk disposal and recycling aspects of managing the wastes.

The mercury-containing wastes proposed for management under the universal waste requirements are well-characterized, low management risk wastes that are usually generated in small volumes by many businesses and households. In general, elemental mercury is the constituent of concern for the mercury wastes proposed for universal waste management (the mercury in the rubber flooring, non-liquid mercury novelties, and dental amalgam is effectively bound and not readily available for release to the environment when properly managed). The risks associated with management of elemental mercury are relatively low because elemental mercury is a well-characterized metal that only exhibits the hazardous waste characteristic of toxicity. It is not a reactive or ignitable substance and it doesn't exhibit other chemical characteristics that would lead to fire, explosion, deadly gas formation, or other hazardous upset. The physical, chemical, and toxic properties of elemental mercury are well known and the management controls to prevent release and exposure are not complicated or difficult to implement. Elemental mercury is 13.53 times as dense as water so the actual volume of waste managed is often less than other types of wastes. (For example, a pound of mercury equals only about 7 teaspoons full of mercury.)

The packaging and design of the mercury-containing waste also helps to make management of the waste low risk because the packaging helps contain and control any potential release of mercury during handling, storage and transport of the waste. For example, mercury switches are small sealed glass vials that are surrounded by a metal housing and mercury thermometers also contain the mercury within a glass vial. In both cases, the glass containment is fairly strong and sufficient to contain the mercury when managed properly.

When considering the risks associated with generators draining mercury from gauges, it is important to note that draining the mercury is a common practice when the items are in use. Therefore, draining the mercury after the product is discarded poses no extra risk. For example, mercury-containing blood pressure

gauges (known as sphygmomanometers) are used extensively in hospital and medical offices, as well as homes throughout the state. The mercury in these gauges is routinely drained as part of device maintenance and replaced with "fresh" mercury. At least one gauge manufacturer offers sphygmomanometer service kits for this very purpose.

As discussed earlier, household hazardous waste generators are exempt from many of the requirements that apply to most generators. Those of the proposed new mercury-containing universal wastes that are currently generated by households and are currently classified as hazardous wastes may already be managed under these reduced requirements. Household-generated universal waste lamps, batteries, and thermostats are exempt from universal waste management and disposal requirements, and households may discard them in the nonhazardous waste stream in unlimited quantities. The proposed exemption of households from most universal waste handler requirements would not, therefore, reduce the stringency of the requirements that apply to households, and would not result in additional risks to public health and the environment.

In addition, both existing and new facilities accumulating mercury-containing universal wastes received from other handlers are restricted to locations that are in compliance with all applicable hazardous materials requirements; comply with existing facility location and precipitation design standards; are in areas zoned for commercial or industrial uses; and do not pose site specific land use hazards or contain sensitive habitat areas.

A summary of the changes in waste management standards from existing hazardous waste requirements to management under universal waste requirements is provided in the project description.

The following is a description of the extent to which project activities would:

a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials.

Safe handling and transport of the mercury-containing wastes is assured through the waste containment, packing, labeling, and clean-up elements of the proposed regulations. Waste management controls established in the proposed regulations include the following requirements:

- The wastes are required to be kept in closed containers that are in good condition, packed to prevent breakage, and labeled to identify the waste.

- Mercury clean-up systems must be available and any spills immediately cleaned-up and properly managed.

- Waste handlers must be trained in how to safely handle and the wastes, including emergency procedures.

- Waste accumulation is limited to one-year to prevent uncontrolled storage that may effectively become onsite disposal.

- The volume of elemental mercury drained from gauges and managed onsite at any one time is limited to 35 kilograms to prevent large-scale releases in the event of mismanagement or upset.

- Tracking of the wastes is provided through handler recordkeeping requirements for all shipments of waste and DOT hazardous materials shipping paper requirements.

- Final disposal or recycling of the wastes remains fully regulated under existing hazardous waste management requirements.

Given the controls established in the proposed regulations, implementation of the regulations will not create a significant hazard to the public or the environment during routine handling, storage, or transport of the waste.

f. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

The proposed regulations include management controls to prevent/minimize hazards caused by spills, accidents, or damage to wastes that might cause a release of mercury to the environments. Applicable controls include requirements for accumulation site locations, waste management, and containment; having mercury clean-up systems on hand; immediate clean-up and management of any spills or releases; employee training in safe waste management, handling, and emergency response procedures; and elemental mercury storage volume limits. The requirements established in the proposed regulations will ensure that the public and the environment are not significantly impacted by upset or release of mercury from management of mercury-containing universal wastes.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

The proposed regulations do not site facilities or require construction that would impacts schools, but schools may be generators or handlers of the mercury-containing wastes proposed for regulation as universal wastes. However, the proposed regulations include requirements to control emissions and ensure safe handling of the wastes, including requirements for management of the wastes in

closed, airtight containers to prevent creation or escape of mercury vapors, and spill prevention and response requirements.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment.

The proposed regulations do not site facilities or require construction at identified hazardous materials sites, but existing hazardous waste sites may also be generators or handlers of the mercury-containing wastes proposed for regulation as universal wastes. However, the proposed regulations include requirements to control emissions and ensure safe handling of the wastes so that generation or handling of mercury-containing universal wastes at existing hazardous waste sites will not create a significant hazard to the public or environment.

e. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

The proposed regulations require that handlers ensure that employees are trained and familiar with emergency procedures. The regulations also require handlers to comply with hazardous materials management requirements and any other applicable local, State, and federal laws. Finally, the regulations do not site specific facilities. Thus, it would be speculative to attempt to analyze physical interference with emergency response or evacuation plans.

References:

California Environmental Quality Act Initial Study for California Universal Waste Rule, DTSC Control Number R-97-08, December 2000.

California Code of Regulations, title 22, division 4.5.

Department of Toxic Substances Control, Draft Mercury Report, October 2001.

Findings of Significance:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ☐ No Impact

8. Hydrology and Water Quality

Project activities evaluated for potential environmental impact:

- Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory setting:

Water quality in California is regulated by the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). The SWRCB establishes water quality standards and objectives statewide for both surface and ground water. Each of the nine RWQCBs establishes additional requirements for water quality within their jurisdictions based on local conditions and beneficial uses of the waters. In addition, the RWQCBs issue National Pollutant Discharge Elimination System (NPDES) permits/Waste Discharge Requirements (WDRs) for discharges to land and water as necessary to ensure compliance with federal and state water quality laws and regulations.

Analysis of Potential Impacts:

Discharges to land, water, sewers, septic systems, or wastewater treatment plants are prohibited under the proposed regulations so there will be no impact to water resources from routine management of the mercury wastes as universal waste. In addition, no surface water or groundwater resources are necessary to implement the regulations as proposed. Finally, the regulations do not require construction of new facilities or infrastructure that would impact water quality, water resources or hydrologic conditions.

It is possible that new intermediate accumulation facilities may be built in response to promulgation of the proposed regulations. However, any new construction undertaken in response to the proposed regulations would be subject to local land use, zoning, building, and construction requirements. New construction would also be subject to local, State, and federal environmental requirements, including constraints on discharges that might impact water resources or hydrologic systems. In addition, the proposed regulations require accumulation of mercury-containing universal wastes received from other handlers to: be in compliance with all applicable hazardous materials requirements; comply with existing facility location and precipitation design standards; be located in areas zoned for commercial or industrial uses; and be located in areas that do not pose site specific land use hazards or contain sensitive habitat areas. [Included in the existing facility location standard is the

requirement that facilities located in 100-year floodplains be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood or maximum tide.]

Impacts to water resources might occur in the event of a spill or uncontrolled release of elemental mercury. However, the proposed regulations require that all wastes be managed in a way that prevents releases of mercury or other contaminants into the environment and any spills or releases must be immediately cleaned-up, classified according to hazardness, and managed appropriately. The discharge prohibitions and spill containment and cleanup provisions established in the proposed regulations will ensure that water quality and water resources are not significantly impacted from management of the mercury wastes under universal waste requirements.

In addition, the waste containment and closed container requirements in the proposed regulations will ensure that mercury wastes do not generate air emissions that could indirectly impact water quality and water resources via air-borne deposition. Consequently, DTSC has determined that implementation of the proposed regulations will not have a significant impact on water resources, water quality, or hydrologic conditions in the state.

The following is a description of the extent to which project activities would:

a. Violate any water quality standards or waste discharge requirements.

The proposed regulations prohibit discharges to land, water, sewers, septic systems, or wastewater treatment plants. In addition, all wastes must be managed in a way that prevents releases of mercury or other contaminants into the environment and any spills or releases must be immediately cleaned-up, classified according to hazardness, and managed appropriately. Because discharges are prohibited and any possible spills must be immediately cleaned up, adoption and implementation of the proposed regulations is not expected to violate of any water quality standards or waste discharge requirements.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

The proposed regulations do not require use of surface or groundwater resources beyond what is normally used by households or businesses. Therefore, groundwater supplies or recharge will not be substantially depleted or interfered with by adoption and implementation of the proposed regulations.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site;

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site;

e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; and

f. Otherwise substantially degrade water quality.

Construction of facilities or infrastructure that would alter existing drainage patterns is not required or mandated by the proposed regulations. Any new construction undertaken in response to the proposed regulations would be subject to local land use, zoning, building, construction, and environmental requirements, including any erosion control requirements. In addition, any potential spill cleanup activities associated with management of the wastes would be physically small in scale and time-limited, and therefore would not substantially alter existing drainage patterns.

g. Place within a 100-flood hazard area structures which would impede or redirect flood flows.

The proposed regulations do not require construction of facilities or infrastructure. However, accumulation facilities accepting waste from other handlers may be constructed in response to the proposed regulations. Under the proposed regulations, both existing and new accumulation facilities (accepting waste from other handlers) must comply with the existing hazardous waste storage facility requirement for facilities located within 100-year floodplains or high tide areas. These facilities must either be built to prevent washout of the waste in the event of a flood or high tide, or demonstrate that the waste can be moved safely before flood or tidewaters can reach the waste. In addition, construction of new universal waste accumulation facilities would be subject to local land use, zoning, building, construction, and environmental requirements, including floodplain or high tide construction requirements. While these requirements will vary statewide, most flood prone urban areas will have established floodplain or tidal area construction requirements to prevent and control impacts from flooding. In addition, most urban areas bordering 100-year floodplains must consider flood control measures or other development requirements in order to qualify for Federal Emergency Management Agency (FEMA) assistance and participation in the National Flood Insurance Program. Therefore, implementation of the

proposed regulations should not cause the placement of structures within 100-year floodplains that would impede flood flows.

h. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

The proposed regulations do not require construction of facilities or infrastructure. As discussed above, new waste accumulation facilities may be constructed in response to the proposed regulations. The proposed regulations apply the existing hazardous waste storage facility location standards for facilities located within 100-year floodplains or high tide areas subject to 100-year flood or maximum high tide conditions. However, the existing facility requirements do not specifically address flood impacts due to levee or dam failures unrelated to 100-year flood or maximum high tide conditions.

Under the proposed regulations, construction of new universal waste accumulation facilities would be subject to local land use, zoning, building, construction, and environmental requirements, including levee or dam failure considerations. While these requirements will vary statewide, most flood-prone urban areas have established floodplain or tidal area construction requirements to prevent and control impacts from flooding under any condition. Therefore, implementation of the proposed regulations should not expose people or structures to risk due to flooding resulting from levee or dam failure.

I. Inundation by seiche, tsunami or mudflow.

The regulations do not require or mandate construction of facilities or infrastructure or address site-specific considerations such as inundation by seiche, tsunami, or mudflow. While the proposed regulations do apply existing hazardous waste storage facility location and precipitation requirements, the existing requirements do not include specific requirements related to inundation by seiches, tsunami, or mudflow.

Under the proposed regulations, existing facilities and construction of new universal waste accumulation facilities would be subject to local land use, zoning, building, construction, and environmental requirements. These local requirements will vary statewide according to local or regional weather conditions, geology, and geomorphology. For example, because seiches and tsunami are waves generated in lakes or oceans by large-scale land movements, such as seismic activity, only seismically active areas located near large water bodies are likely to enact requirements related to seiches or tsunami. In the same way, mountainous areas that experience high volume rainfall events are more likely to enact local requirements to address potential mudflows (such as hillslope drainage and stabilization requirements).

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

9. Land Use and Planning

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, mercury-containing universal waste handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory setting:

Local governments in California have the authority to adopt local ordinances and plans addressing land use within their jurisdictions. Local requirements will differ, however, because every local community has different types of resources, populations, and development goals and pressures.

Analysis of Potential Impacts:

Implementation of the proposed regulations does not directly result in or require construction of facilities or infrastructure. Beyond individual waste generators, collection and storage of mercury-containing products and universal wastes are primarily expected to be conducted at existing businesses or facilities, such as auto dismantling yards, retail stores, or other industrial operation. In these instances, universal waste management activities would likely be incidental to the main business activity onsite. The existing and new businesses managing mercury-containing universal wastes would be subject to local zoning, land use, and planning requirements, including any public health, hazardous materials and resource conservation requirements.

While the proposed regulations do not address site-specific conditions and do not mandate or require construction of new facilities or infrastructure of any kind, it is possible that new intermediate accumulation facilities may be built in response to promulgation of the proposed regulations. However, any new construction

undertaken in response to the proposed regulations would be subject to local land use, planning, zoning, building, construction, and environmental requirements. In addition, the proposed regulations require accumulation of mercury-containing universal wastes received from other handlers to: be in compliance with all applicable hazardous materials requirements; comply with existing facility location and precipitation design standards; be located in areas zoned for commercial or industrial uses; and be located in areas that do not pose site specific land use hazards or contain sensitive habitat areas.

Under existing hazardous waste storage facility requirements, offsite[10] hazardous waste accumulation facilities would require a permit from DTSC, which includes a public notice and appeal process. A DTSC permit decision also requires CEQA review. A local land use permit for a hazardous waste facility can be appealed under Health and Safety Code article 8.7, section 25199 et seq. (also known as the Tanner Act). The Tanner Act also includes provisions for public participation in decisions relating to the siting and issuance of permits for hazardous waste facilities. Under these provisions, a local agency must demonstrate that a land use decision involving a hazardous waste facility project is consistent with local general plan and zoning ordinances and consistent with the county hazardous waste management plan.

Under the proposed regulations, offsite accumulation of mercury wastes by universal waste handlers would be subject to local zoning and land use requirements, including the local appeal process, but would not be subject to the Tanner Act provisions for hazardous waste facility projects. This is because intermediate accumulation facilities and those facilities that manage mercury-containing universal wastes do not meet the definition of a hazardous waste facility project given in Health and Safety Code section 25199.1(b).[11] To ensure that implementation of the proposed regulations would not indirectly cause activities inconsistent with local general plan and zoning ordinances or hazardous waste management plans, the regulations require that accumulation of mercury-containing universal waste only be conducted at locations where the activity is consistent with local zoning and land use patterns. In addition, the proposed regulations require that handlers accumulating mercury-containing universal waste from other handlers comply with all hazardous materials management requirements and disclose in any applicable business or use permit documents that mercury wastes are being managed at the facility. These requirements help ensure that local jurisdictions and the public are fully apprised

[10] An offsite facility handles waste that was not generated at the same location as the facility and the waste is not under the control of the original waste generator.

[11] HSC section 25199.1(b) defines a hazardous waste facility project to mean "a project undertaken for the purpose of siting and constructing a new hazardous waste facility that will require a hazardous waste facilities permit issued pursuant to Section 25200, or for the purpose of significantly expanding or modifying an existing hazardous waste facility that is being used or operated under a permit issued pursuant to Section 25200 or a grant of interim status pursuant to Section 25200.5."

of the mercury waste management activities and that waste management activities are consistent with local requirements.

Any requests for local authorization to deviate from local zoning or land use requirements would be site-specific and subject to local requirements for environmental review and public participation. The requests for local authorization would not be a direct impact of the proposed regulations.

The following is a description of the extent to which project activities would:

a. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

Construction of facilities or infrastructure is not required or mandated by the proposed regulations. However, new waste accumulation facilities may be constructed as an indirect response to the proposed regulations. The proposed regulations require that accumulation of mercury-containing universal wastes only be conducted at a location where the waste management activity complies with local land use zoning and land use patterns, and complies with all applicable hazardous materials handling requirements. These requirements ensure that implementation of the proposed regulations does not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the waste management and hazardous materials activities.

b. Conflict with any applicable habitat conservation plan or natural community conservation plan.

Construction of facilities or infrastructure is not required or mandated by the proposed regulations. However, new waste accumulation facilities may be constructed as an indirect response to the proposed regulations. The proposed regulations require that accumulation of mercury-containing universal wastes only be conducted at a location where the waste management activity complies with local land use zoning and land use patterns, and complies with all applicable hazardous materials handling requirements. The regulations only permit accumulation facilities in industrial and/or commercial areas, which makes it unlikely they would conflict with conservation plans. Management of the wastes would also be subject to local building and construction requirements, including compliance with applicable habitat conservation plans or natural community conservation plans. These requirements ensure that implementation of the proposed regulations does not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the waste management activities.

References:

Health and Safety Code, Article 8.7 (section 25199 et seq.), Procedures for the Approval of New Facilities.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

10. Mineral Resources

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas. However, mercury-containing universal wastes may be generated and handled in all areas of the state, regardless of mineral resources in the area.

California contains numerous mineral resources and reserves that may be mined or exploited under current conditions or at a future date. Existing mineral resources include petroleum resources that are mined via drilling and can be exploited even in urban environments, such as in Los Angeles. Other mineral resources, including gold and construction aggregate, require surface access such that mining activities usually cannot be co-located with houses or buildings. While mercury was once extensively mined in California (for use in gold mining and for its own properties), mercury mining operations ceased in California in the late 1970's/early 1980's.

Analysis of Potential Impacts:

The regulations do not include site specific facilities or mandate construction of infrastructure of any type (i.e., buildings, roads, or disposal facilities) that would require new or additional mineral resources or block access to mineral resources through regulation-related development or construction. In addition, any new

structures that might be constructed to manage universal wastes would be subject to local land use, building, and resource use requirements.

The proposed regulations do include requirements for recycling mercury from eligible wastes. However, since there are no active mercury mining operations in the state, the mercury recycling requirement will have no effect on mercury mining supply and demand within the state.

Because the proposed regulations do not require or mandate new construction or construction of infrastructure that would use mineral resources or block access to mineral resources, and mercury is no longer being mined in California, implementation of the proposed regulations will not have an impact on mineral resources in the state.

The following is a description of the extent to which project activities would:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; and

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

The regulations do not site specific facilities or mandate construction of infrastructure of any type (i.e., buildings, roads, or disposal facilities) that would result in the loss of availability through mineral consumption or blocked access of a known mineral resource of regional or statewide value or a locally-important mineral resource recovery site.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

11. Noise

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, mercury-containing universal waste handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory Setting:

Existing hazardous waste facility permit regulations do not specifically address noise except to the extent that noise is analyzed as part of the CEQA review process for hazardous waste facilities permits. However, local and regional agencies have the authority to establish noise requirements within their jurisdictions. Usually these requirements are associated with construction or industrial activities, but may also address disturbance of the peace in residential or business districts.

Employee and worker noise exposure limits from industrial processes or business activities are overseen by Cal-OSHA and established in the California Code of Regulations, title 8, section 5096. In general, worker noise protection equipment is required when the sound levels exceed 90 decibels (dBA)

Analysis of Potential Impacts:

The proposed regulations do not site specific facilities or mandate construction of infrastructure of any type (i.e., buildings, roads, or disposal facilities) that would impact noise generation or groundbourne vibration in excess of ambient levels or standards. Any existing facilities or construction of new structures would be subject to local land use, building, and construction requirements, including noise ordinances, requirements for noise abatement and limits on hours of operation. Worker exposure to noise related to waste management activities is controlled through requirements for establishment and implementation of safe operation procedures and appropriate personal protective equipment as necessary.

Because new construction is not required by the proposed regulations and existing businesses or new construction would be subject to local operating and worker safety noise requirements, implementation of the proposed regulations will not cause any temporary or permanent noise impacts to persons or the environment.

The following is a description of the extent to which project activities would cause:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b. Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels;

c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project; and

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The proposed regulations do not site specific facilities or mandate construction. The regulations require accumulation facilities to comply with local zoning, general plans and ordinances, such as noise ordinances. Any existing facilities or construction of new facilities would be subject to local land use ordinances, building, and construction requirements, including requirements for noise abatement and limits on hours of operation. Thus, for all the reasons discussed above, the proposed regulations would not: (a) expose persons to noise levels in excess of local standards; (b) expose persons to excessive groundbourne vibration or noise levels; or (c) cause a temporary or permanent increase in noise levels.

References:

California Code of Regulations, title 8, section 5096. Exposure Limits for Noise. http://www.dir.ca.gov/title8/5096.html.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

12. Population and Housing

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, mercury-containing universal waste handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Analysis of Potential Impacts:

Individuals and households may generate waste subject to regulation under the proposed regulations. However, the proposed regulations only address classification and management of mercury-containing hazardous waste. They do not site facilities, require construction or mandate staffing that would directly impact population or housing, or cause indirect impacts from new universal waste management businesses. Consequently, the project will have no impact on population or housing in the state.

The following is a description of the extent to which project activities would:

a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; and

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

For the reasons described in the "Analysis of Potential Impacts" section above, the project will not induce substantial population growth (directly or indirectly) or displace housing or people.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

13. Public Services

Project activities evaluated for potential environmental impact:

- List four (4) mercury-containing products as hazardous wastes when discarded.

- Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for listing or management under universal waste requirements. In general, these handlers are primarily located in urban, commercial, and/or industrialized areas throughout the state.

There have been contentions that low mercury fluorescent tubes should not be regulated because there will never be 100% compliance with the disposal prohibition and it is better if the illegally disposed tubes are lower mercury tubes rather than higher mercury tubes.

Analysis of Potential Impacts:

While individuals and households may generate waste subject to regulation under the proposed regulations, the proposed regulations only address classification and management of mercury-containing hazardous waste. They do not site facilities, require construction or mandate staffing that would significantly impact population, housing, or the need for new or altered public facilities or levels of service.

Impacts to fire protection and emergency response public services might occur in the event of a fire at a facility or business managing mercury-containing universal wastes or in the event of a release or spill of elemental mercury during management of mercury-containing universal wastes. However, potential impacts to fire protection levels of service would be minimized due to the waste management controls included in the regulations and the State hazardous material release reporting, inventory, and response plan requirements[12] for any business that handles a hazardous material or waste in quantities equal to or greater than 500 pounds (approximately 227 kg). These requirements would help ensure that fire protection levels of service are not adversely impacted by implementation of the proposed regulations. In addition, potential impacts to emergency response levels of service would be addressed through the spill prevention and cleanup provisions included in the proposed regulations.

[12] California Code of Regulations, title 19, division 2, chapter 4, sections 2729 et seq.

Mercury waste management issues associated with solid waste pickup and disposal facilities should actually improve with implementation of the proposed regulations. The streamlined waste management and recycling provisions will help remove mercury-containing wastes from the solid waste management system and municipal landfills and encourage proper disposal or recycling of the wastes. In addition, because universal waste handlers must recycle the mercury from mercury containing waste in order manage the wastes as universal waste, increases in volumes of mercury-containing waste disposed at hazardous waste disposal facilities will be minimal.

DTSC has concluded that impacts from illegal disposal will be less than significant, at worst. First, the majority of the more expensive non-hazardous fluorescent tubes are used by larger commercial generators that will be inspected to ensure compliance. Second, DTSC and other Cal/EPA and State agencies are working to develop a robust infrastructure to collect and recycle fluorescent tubes from smaller businesses and households. Lastly, the non-hazardous tubes have about 5mg of mercury per four foot fluorescent tube while the hazardous tubes have about 10 - 12 mg of mercury per four foot tube. The differences in mercury content are not large and will not cause greatly increased amounts of illegally disposed mercury.

It is clearly speculative to contend that there will be extensive non-compliance with the law. Because DTSC cannot predict rates of non-compliance that would amount to more than speculation, this contention cannot be thoroughly analyzed in this study. However, DTSC intends that State and CUPA inspectors will work to prevent illegal disposal and is working towards a goal of zero illegal disposal.

The following is a description of the extent to which project activities would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

- *Fire protection*

As noted in the “Analysis of Potential Impacts” section above, potential impacts to fire protection levels of service would be minimized due to the waste management controls included in the regulations and the State hazardous material release reporting, inventory, and response plan requirements for any business that handles a hazardous material or waste in quantities equal to or greater than 500 pounds (approximately 227 kg). These requirements would

help ensure that fire protection levels of service are not adversely impacted by implementation of the proposed regulations.

- *Police protection*
- *Schools*
- *Parks*

The proposed regulations do not include construction or staffing mandates that would result in adverse impacts on police protection, schools, parks, or associated service levels.

- *Other public facilities*

The listing of the four identified mercury-containing products as hazardous waste when discarded may have an indirect impact on municipal landfills that are prohibited from accepting hazardous waste in the event that listed mercury-containing universal wastes are found in a municipal landfill. However, this impact should not be significantly different from any impacts already associated with identification of RCRA listed wastes at municipal facilities. Realistically, hazardous wastes are sometimes identified at all municipal landfills; and because of this most municipal landfills have established loadchecking programs to ensure, within reason, that hazardous wastes are kept out of the landfill. Operation of loadchecking programs at municipal landfills will ensure that any impacts from listing of mercury-containing wastes are less than significant.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

14. Recreation

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for listing or management under universal waste

requirements. In general, these handlers are primarily located in urban, commercial, and/or industrialized areas throughout the state.

Analysis of Potential Impacts:

While recreation facilities may generate waste subject to regulation under the proposed regulations, the proposed regulations only address classification and management of mercury-containing hazardous waste. They do not require construction or mandate staffing that would impact the use of recreational facilities. Consequently, the project will have no impact on recreation in the state.

The following is a description of the extent to which project activities would:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; and

b. Include recreational facilities or require construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Please see the "Analysis of Potential Impacts" above.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ❑ Less Than Significant Impact
- ■ No Impact

15. Transportation and Traffic

Project activities evaluated for potential environmental impact:

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Regulatory setting:

Transport of hazardous waste is regulated in California by DTSC and the federal DOT (for transportation of specified hazardous materials and wastes in interstate or intrastate commerce). Under existing hazardous waste control laws, transportation of hazardous wastes requires use of a hazardous waste manifest and registered hazardous waste transporter, unless otherwise excluded or exempted from these requirements. The purpose of the manifest is to provide a mechanism to track hazardous waste from generation to final disposal ("cradle to grave"). Use of a registered hazardous waste transporter is meant to ensure safe transport of the waste.

Analysis of Potential Impacts:

The main impact associated with implementation of the proposed regulations is the change in waste transportation requirements. Under existing requirements, hazardous waste must be transported using a hazardous waste manifest and registered transporter. Implementation of the proposed regulations would allow mercury-containing universal wastes to be transported without use of a hazardous waste manifest or registered hazardous waste hauler. However, the management conditions established in the proposed regulations and application of the existing DOT requirements provide similar benefits and controls to the manifest and hauler requirements.

<u>Hazardous Waste Manifest</u>

The proposed regulations provide for the waste tracking and record keeping benefits usually associated with use of a hazardous waste manifest. Both large and small quantity handlers must keep records of each waste shipment sent and received. The record may take the form of a log, invoice, manifest, bill of lading, or other shipping document that gives the name and address of the originating waste handler, destination facility, or foreign entity; the type and quantity of waste; and the date the waste was sent or received. Tracking of waste shipments can be accomplished through review of handler and destination facility records.

In addition, DOT hazardous substances shipping paper requirements apply to shipments of mercury-containing waste that collectively contain 1 pound or more of elemental mercury. Because many universal waste handlers will only transport larger loads of accumulated wastes, many shipments of universal wastes containing elemental mercury would also be subject to the DOT transportation and shipping paper requirements. (It would only take approximately 7 teaspoons of elemental mercury, 454 mercury switches or thermometers, or 5 mercury pressure gauges to meet the DOT hazardous substance reportable quantity level of 1 pound for elemental mercury.)

Consequently, the DOT shipping paper can also be used to track waste shipments to ensure that wastes are properly disposed or recycled.

Registered Hazardous Waste Transporter

Existing hazardous waste management standards require the use of a registered hazardous waste transporter. The main benefits of this requirement used to be the provisions for periodic vehicle inspection and requirements for transport liability insurance. However, the registered transporter program no longer requires periodic vehicle and container inspections because those standards were judged to be preempted by the federal DOT hazardous materials transport requirements and California now requires that all California drivers and vehicle owners carry liability insurance. In effect, this means that the main benefits of the hazardous waste transporter requirement are already being provided by other laws and requirements. As noted above, most shipments of mercury-containing universal wastes will be subject to DOT requirements, and all California drivers are required to carry liability insurance. Consequently the proposed change in regulatory requirements allowing transportation of mercury-containing universal wastes without use of a registered hazardous waste transporter will not have a significant effect because the main benefits of the registration requirement are being provided by other laws.

The following is a description of the extent to which project activities would:

This project is a set of regulations that lists four mercury containing wastes and allows universal waste management of ten mercury-containing wastes. It is not site specific, does not site facilities, and does not mandate construction. Impacts a. through f. listed below are site specific and are really geared toward a project that causes direct physical changes at a particular location or a number of locations. Thus, analysis beyond that provided below would be speculative for this project.

a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

Current hazardous waste management standards allow hazardous waste to be accumulated for only 90, 180, or 270 days depending on volume of waste generated and distance to a hazardous waste disposal site. Under the proposed universal waste requirements, mercury containing universal wastes could be accumulated for up to one year. In general, most universal waste handlers will try to accumulate and ship larger volumes of waste to gain economies of scale. With a one year accumulation time limit for mercury containing universal wastes, handlers will have more time to accumulate larger volumes of waste and would not have to ship wastes as frequently to meet the hazardous waste accumulation

time limits. Consequently, the number of universal waste shipments will likely decrease when compared to the number of shipments necessary under existing hazardous waste requirements. Therefore, the project would not cause an increase in traffic.

b. Exceed, either individually or cumulatively, a level of service standard established by the country congestion management agency for designated roads or highway.

Because handlers will have more time to accumulate larger volumes of waste, they won't have to ship wastes as frequently to meet the hazardous waste accumulation time limits. Consequently, the number of universal waste shipments will likely decrease when compared to the number of shipments necessary under existing hazardous waste requirements. Therefore, implementation of the proposed regulations will not exceed the levels of service currently established for roads or highways.

c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

The proposed regulations do not address or include requirements applicable to road design features or incompatible vehicle use. However, DOT hazardous materials transport requirements may address incompatible vehicle uses in cases where materials are transported on intrastate roads in vehicles not approved for use on public highways.

d. Result in inadequate emergency access;

e. Result in inadequate parking capacity; and

f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

For the reasons discussed in the "Analysis of Potential Impacts" section above and in the analyses of impacts for a., b., and c. above, the project would not cause impacts in the areas identified in d., e., and f.

References:

49 Code of Federal Regulations, Subchapter C, Hazardous Materials Regulations, Part 171 et seq.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

16. Utilities and Service Systems

Project activities evaluated for potential environmental impact:

- List four (4) mercury-containing products as hazardous wastes when discarded.

- Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Currently, the use of fluorescent lamps in public and commercial applications is thought to be superior to the use of incandescent lamps because fluorescent lamps are much more energy efficient than incandescent lamps. Use of fluorescent lamps further helps to ensure that the State will have sufficient supplies of electricity.

Analysis of Potential Impacts:

As noted above, the project is the promulgation and statewide implementation of regulations governing the management as universal wastes of specific mercury-containing hazardous wastes. While individuals and households may generate waste subject to regulation under the proposed regulations, the proposed regulations only address classification and management of mercury-containing hazardous waste. They do not require construction or mandate staffing that would significantly impact utilities and service systems.

Discharges to land, water, sewers, septic systems, or wastewater treatment plants are prohibited under the proposed regulations so there will be no impact to wastewater treatment requirements or system facilities from routine management of the mercury wastes as universal waste. In addition, no surface water or

groundwater resources are necessary to implement the regulations as proposed so there would be no impact on water supplies.

While the proposed regulations do not address site-specific conditions and do not mandate or require construction of new facilities or infrastructure of any kind, it is possible that new intermediate accumulation facilities may be built in response to promulgation of the proposed regulations. However, any new construction undertaken in response to the proposed regulations would be subject to local land use, zoning, building, construction, and environmental requirements, including requirements related to water supplies, stormwater discharges, and wastewater discharges. Furthermore, the regulations require accumulation facilities to comply with local zoning, general plans, ordinances and hazardous waste materials requirements.

As noted in the Public Services section of this document, the hazardous waste "listing" of the four identified mercury-containing products may have an indirect administrative impact on municipal solid waste landfills in the event that these wastes are found in a municipal landfill. However, this impact should not be significantly different from any impacts already associated with identification of RCRA listed wastes at municipal facilities. Realistically, hazardous wastes are sometimes identified at all municipal landfills; and because of this most municipal landfills have established loadchecking programs to ensure, within reason, that hazardous wastes are kept out of the landfill. Operation of loadchecking programs at municipal landfills will ensure that any indirect impacts from the listing of mercury-containing wastes are less than significant.

Mercury waste management issues associated with solid waste pickup and disposal facilities should actually improve with implementation of the proposed regulations. The streamlined waste management and recycling provisions will help remove mercury-containing wastes from the solid waste management system and municipal landfills and encourage proper disposal or recycling of the wastes. In addition, because universal waste handlers must recycle the mercury from mercury containing waste in order manage the wastes as universal waste, increases in volumes of mercury-containing waste disposed at hazardous waste disposal facilities will be minimal.

There have been contentions that regulating all mercury containing lamps as universal waste and requiring more expensive end-of-life management will create an incentive to use incandescent bulbs that can be disposed as non-hazardous waste. Today, about 80% of the fluorescent tubes sold in California exhibit the toxicity characteristic for mercury and are not affected by this project; the remaining 20% contain mercury just below the regulatory threshold and may be currently be managed as non-hazardous waste. DTSC does not believe that businesses, households, and other entities will abandon fluorescent lighting with the curtailing of non-hazardous disposal for 20% of the lamps. Energy prices have achieved historic highs in the State nullifying any savings from non-

hazardous disposal of much less energy efficient incandescent bulbs. Additionally, building codes require the use of fluorescent lighting in virtually all businesses and in some parts of residential structures. Note that existing light fixtures and wiring in most businesses cannot accommodate incandescent bulbs with their unique socket shape and their significantly higher current draw making a switch back to incandescent lighting prohibitively expensive, therefore, very unlikely.

Predicting people's behavior is highly speculative at best and cannot be analyzed with certainty. For these reasons, DTSC has concluded that any impact on electrical utilities due to this project is less than significant.

The following is a description of the extent to which project activities would:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

The proposed regulations do not require or mandate wastewater discharges to land or to sewers/wastewater treatment facilities. In addition, any existing business or new construction that might manage mercury-containing universal wastes would be subject to local wastewater discharge requirements for any non-mercury waste discharges. Because the regulations prohibit mercury waste discharges and all other discharges would be subject to wastewater discharge requirements, implementation of the proposed regulations will not cause RWQCB wastewater treatment requirements to be exceeded.

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The proposed regulations do not require or mandate water deliveries or discharges to sewers/wastewater treatment facilities and therefore, will not require or create the need for new or expanded facilities. Any existing business or new construction that might manage mercury-containing universal wastes would potentially be subject to local water and wastewater facility requirements as a function of routine business operation, but operation of these businesses is not expected to impact the need for new or expanded water or wastewater facilities. However, further analysis would be speculative.

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The proposed regulations do not require, mandate, or allow discharges to storm water drainage facilities, and, therefore, will not require or create a need for new or expanded stormwater drainage facilities. Any existing business or new

construction that might manage mercury-containing universal wastes would potentially be subject to local stormwater management requirements as a function of business operation, but operation of these businesses is not expected to impact the need for new or expanded stormwater drainage facilities. However, further analysis would be speculative.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

The proposed regulations do not address, require, mandate, or directly effect water supplies, deliveries, or entitlements, and, therefore, will not create a need for new or expanded water resources or entitlements. Any existing business or new construction that might manage mercury-containing universal wastes would likely use available water supplies as a function of business operation, but operation of these businesses is not expected to impact the need for new or expanded water resources or entitlements. Further analysis would be speculative.

e. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.

The proposed regulations do not allow discharge of mercury wastewaters to wastewater treatment facilities, and, therefore, will not impact wastewater treatment capacity determinations. Any existing business or new construction that might manage mercury-containing universal wastes would likely discharge non-mercury wastewater to wastewater treatment facilities via the sewer as a function of business operation, but operation of these businesses is not expected to impact determinations of adequacy of wastewater treatment capacity. Further analysis would be speculative.

f. Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs.

The proposed regulations address the management of mercury-containing hazardous waste. Disposal of these wastes at solid waste landfills is prohibited. While solid waste landfill capacity will not be adversely impacted, implementation of the proposed regulations may result in a positive impact on landfill capacity since mercury wastes that might otherwise go to a municipal solid waste landfill will go to a hazardous waste recycling or disposal facility. In addition, there should be no significant impact on hazardous waste landfill capacity because the proposed regulations require recycling of the mercury-containing wastes (except rubber flooring and non-liquid mercury novelties) in order for the wastes to be managed as universal waste.

g. Comply with federal, state, and local statutes and regulations related to solid waste.

The proposed regulations establish universal waste management standards for mercury-containing hazardous waste only. All requirements are fully consistent with existing solid waste statutes and regulations.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

17. Cumulative Effects

Project activities evaluated for potential environmental impact:

- ■ List four (4) mercury-containing products as hazardous wastes when discarded.

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Analysis of Potential Impacts:

In addition to the proposed mercury-containing universal waste regulations, DTSC is also proposing a separate rulemaking[13] to allow the management of hazardous waste CRTs and consumer electronic devices (CEDs) as universal waste. CRT and CED wastes currently may be considered hazardous waste due to lead, copper, or other metals or toxic constituents in the waste.

The main reason both universal waste rulemaking packages are being proposed at the same time is that the statutory authority necessary for the rulemakings expires on January 1, 2003. Consequently, while each rulemaking is a separate project, they are being undertaken at the same time in order to complete rulemaking activities before the January 1, 2003 authority sunset.

[13] Electronic Hazardous Waste Regulations, DTSC Reference Number R-01-06.

Although the other rulemaking also proposes to regulate certain wastes (CRTs and CEDs) as universal waste, the cumulative impact of regulating both mercury-containing wastes and CRTs/CEDs as universal waste will be less than significant because the wastes have different characteristics, are relatively low risk, and management is not restricted to a limited number of handlers. Universal waste management allows for streamlined accumulation and transport standards based on factors related to who generates the waste, waste volumes, and likelihood that wastes will be diverted from municipal or solid waste management systems. The appropriateness of managing a particular hazardous waste as universal waste is evaluated according to the following criteria[14]:

- Is the waste generated by a wide variety of generators?

- Is the waste commonly generated by a wide variety of establishments (including, for example, households, retail and commercial businesses, office complexes, government organizations, as well as large industrial facilities)?

- Is the waste generated by a large number of generators and frequently generated in relatively small quantities by each generator?

- Is the risk posed by waste accumulation and transport relatively low compared to other hazardous wastes and the proposed management standards protective of human health and the environment during accumulation and transport?

- Will management of the waste as universal waste increase the likelihood that the waste will be diverted from non-hazardous waste management systems to recycling, treatment, or disposal in compliance with full hazardous waste management requirements?

- Will regulation of the waste as universal waste improve implementation of and compliance with the hazardous waste management program?

Both the mercury-containing wastes identified in the proposed regulations and CRT/CED wastes meet the above criteria for management as universal waste.

Any adverse cumulative impacts of regulating both wastestreams as universal waste will be less than significant because the wastestreams are different and specific universal waste management requirements have been tailored to the characteristics of each wastestream. For example, broken or damaged mercury-containing wastes are required to be managed in closed, air-tight containers to prevent volatilization of any liquid mercury; whereas the lead content of CRT

[14] These criteria are currently established in 40 Code of Federal Regulations, part 273, section 273.81, Factors for Petitions to Include Other Wastes Under 40 CFR Part 273. DTSC Rulemaking R-01-06 proposes to include similar criteria in the California UWR.

glass is not readily available to the environment so additional containment requirements are not necessary.

With respect to final disposition of the wastes, both wastestreams are prohibited from disposal at municipal landfills. Thus, there would actually be a positive cumulative impact on solid waste management systems because the streamlined waste management and recycling provisions will help remove both wastestreams from the solid waste management system and municipal landfills and encourage proper disposal or recycling of the wastes. Because universal waste management of both mercury-containing wastes and CRT/CEDs is conditioned on recycling the wastes, there would be no adverse cumulative impact on hazardous waste disposal facilities. In addition, there would not be any significant adverse impacts on recycling facilities because the wastes are recycled by different processes and by different facilities.

The following is a description of the extent to which project activities would:

a. Increase the need for developing new technologies, especially for managing any hazardous or non-hazardous wastes that the project generates.

Because the wastestreams proposed for management under universal waste requirements have different characteristics and different recycling needs, there will be no cumulative impact on any need for development of new technologies to manage, treat, or recycle the wastes.

b. Increase the need for developing new technologies for any other aspects of the projects.

Beyond the waste management, treatment or recycling issues discussed in a. above, new technology development in any other areas of the projects has not been identified.

c. Leads to a larger project or leads to a series of projects, or is a step to additional projects.

Concurrent promulgation of both the mercury waste and CRT/CED universal waste management proposed regulations does not represent implementation of steps in a larger project or series of projects. Under both the federal and California Universal Waste Rules, wastes may be added to the list of wastes eligible for management as universal wastes according to the factors and criteria discussed above. However, the addition of any waste to the universal waste program is considered and acted upon separately on the merits of each wastestream, and does not represent a step in a larger project.

d. Alter the location, distribution, density or growth rate of the human population of an area.

Both projects address the promulgation and statewide implementation of regulations governing the management of specific hazardous wastes as universal wastes. While individuals and households may generate waste subject to regulation under the both rulemaking proposals, the proposed regulations only address classification and management of universal waste. Neither package includes requires construction or mandates staffing that would alter the location, distribution, density or growth rate of the human population of any area within the state.

e. Affect existing housing, public services, public infrastructure, or creates demands for additional housing.

Both projects address the promulgation and statewide implementation of regulations governing the management of specific hazardous wastes as universal wastes. While individuals and households may generate waste subject to regulation under both rulemaking proposals, the proposed regulations only address classification and management of universal waste. Neither package requires construction or mandates staffing that would significantly affect existing housing, public services, public infrastructure, or create a demand for additional housing in any area within the state.

Public services and infrastructure may be indirectly impacted in the areas of fire protection, emergency response, and waste management services from businesses that might be established to accumulate and transport universal wastes. But these impacts are ameliorated by regulatory conditions placed on businesses or individuals operating in accordance with the proposed regulations, and by requirements placed on business by other laws and regulations (i.e., hazardous materials inventory and business plan requirements established by the Governor's Office of Emergency Services and administered locally by the Certified Unified Program Agency). Further analysis would be speculative.

Waste management issues associated with solid waste pickup and disposal facilities should actually improve with implementation of both sets of proposed universal waste regulations. The streamlined universal waste management and recycling provisions will help remove both mercury-containing wastes and CRTs/CEDs from the solid waste management system and municipal landfills and encourage proper disposal or recycling of the wastes.

f. Be cumulatively considerable on the environment with cumulative adverse effects on air, water, habitats, natural resources, etc.

Both projects involve the promulgation and statewide implementation of regulations governing the management of hazardous waste as universal waste.

Both sets of regulations are statewide in scope, do not address site-specific conditions, and do not require or mandate construction of new facilities or infrastructure (i.e., buildings, roads, or disposal facilities) that could cause significant adverse impacts to air, water, wildlife, habitats, or other natural resources. All wastes must be managed in a way that prevents releases of mercury, lead, or other contaminants into the environment and any spills or releases must be immediately cleaned-up, classified according to hazardness, and managed appropriately. Therefore, implementation of both rulemaking packages will not have a cumulatively considerable adverse impact on the environment.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

18. Mandatory Findings of Significance

Project activities evaluated for potential environmental impact:

- ■ List four (4) mercury-containing products as hazardous wastes when discarded.

- ■ Regulate ten (10) specific mercury-containing wastestreams according to the Universal Waste requirements.

Environmental Setting:

A wide variety of businesses (i.e., retail stores, hospitals, and industrial facilities) and individual households statewide may generate and handle the mercury-containing wastes proposed for management under universal waste requirements. In general, these handlers will be located in urban, commercial, and/or industrialized areas throughout the state.

Analysis of Potential Impacts:

The proposed project is the promulgation and statewide implementation of regulations addressing classification of four mercury-containing hazardous wastes as hazardous waste when discarded, and management of ten specific mercury-containing hazardous wastestreams under universal waste requirements. The intent of the regulations is to promote both the recycling of commonly generated mercury-containing wastes and the use of non-mercury alternatives in products.

Implementation of the proposed regulations will have a less than significant effect on the environment for all the reasons discussed in this document and because the project includes controls for any possible impacts from waste management activities conducted in accordance with the proposed regulations. These project controls include both specific waste management requirements that are established directly in the regulations, and all applicable hazardous materials management, business operation, and worker safety requirements established via federal, State, and local requirements.

DTSC finds that the project does not:

a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. The Biological and Cultural Resources sections of this Initial Study support this finding.

b. Have impacts that are individually limited but cumulatively considerable. The Cumulative Effects section of this Initial Study supports this finding.

c. Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. The Hazards and Hazardous Materials section of this initial study supports this finding.

For all the reasons discussed in the document, the project would not have or create any of these impacts.

Findings of Significance:

- ❑ Potentially Significant Impact
- ❑ Potentially Significant Unless Mitigated
- ■ Less Than Significant Impact
- ❑ No Impact

V. DETERMINATION OF APPROPRIATE ENVIRONMENTAL DOCUMENT

On the basis of this Special Initial Study:

- ■ I find that the proposed project COULD NOT have a significant effect on the environment. A NEGATIVE DECLARATION will be prepared.

- ❑ I find that although the proposed project COULD HAVE a significant effect on the environment, mitigation measures have been added to the project which would reduce these effects to less than significant levels. A NEGATIVE DECLARATION will be prepared.

- ❑ I find that the proposed project COULD HAVE a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

DTSC Project Manager Signature Date		**Title**	**Telephone #**
DTSC Branch/ Unit Chief Signature Date		**Title**	**Telephone #**

ATTACHMENT A

INITIAL STUDY
REFERENCE LIST
for
Mercury Waste Classification and Management Regulations
(DTSC Reference Number R-02-04)

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1. Guidelines for the Official Designation of Scenic Highways, March 1996, State of California, Business, Transportation and Housing Agency, Department of Transportation. http://www.dot.ca.gov/hq/LandArch/scenic/shpg1.htm.

2. Department of Conservation, Division of Land Resource Protection website for general information on assistance available to local agencies on agricultural land use designation and preservation. http://www.consrv.ca.gov/dlrp/index.htm.

3. California Air Resources Board website for information on criteria pollutants and mercury toxic air contaminant information: http://www.arb.ca.gov/.

4. California Office of Historic Preservation website for State and local government information on cultural and historical resources: http://ohp.parks.ca.gov/.

5. Department of Conservation, California Geological Survey website for Alquist-Priolo Earthquake Fault Zoning Act and Seismic Hazards Mapping Act requirements: http://www.consrv.ca.gov/CGS/index.htm.

6. California Environmental Quality Act Initial Study for California Universal Waste Rule, DTSC Control Number R-97-08, December 2000.

7. California Code of Regulations, title 22, division 4.5.

8. Department of Toxic Substances Control, Draft Mercury Report, October 2001.

9. Health and Safety Code, Article 8.7 (section 25199 et seq.), Procedures for the Approval of New Facilities.

10. California Code of Regulations, title 8, section 5096. Exposure Limits for Noise. http://www.dir.ca.gov/title8/5096.html.

11. 49 Code of Federal Regulations, Subchapter C, Hazardous Materials Regulations, Part 171 et seq.