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Arnold Schwarzenegger
Governor

July 19, 2005

To All Interested Parties:

The Department of Toxic Substances Control (DTSC) will conduct a public workshop to solicit input on the development of draft regulations for:

Perchlorate Best Management Practices (BMPs)

The workshop will be held at the following time and place:

Date: **August 19, 2005**

Time: **9:00 AM – 12:00 PM**
1:00 PM – 4:00 PM

Location: **Cal/EPA Building**
Byron Sher Auditorium , 2nd Floor
1001 "I" Street
Sacramento, California 95814

Note: Visitors must check in with security upon entering the Cal/EPA building.

DTSC representatives will summarize the proposed regulatory actions, discuss the significant issues related to this rulemaking, and offer alternatives. After introductions and a short presentation, DTSC will solicit comments and suggestions from workshop attendees.

If you are unable to attend, the workshop may be monitored live via audio webcast. The broadcast link will be available on the Cal/EPA website at http://www.calepa.ca.gov/broadcast/. Questions and comments may be submitted in real time by sending an e-mail to Auditorium@calepa.ca.gov. DTSC staff will monitor e-mails and, as time allows, read them aloud. All questions and comments submitted via e-mail will be considered in the development of perchlorate BMP regulations. *** This e-mail address is valid only for the duration of the workshop; all other correspondence should be made in accordance with the contact information listed at the end of this notice.

Travel information is available at http://www.calepa.ca.gov/EPAbldg/Location.htm.

To request special accommodations for persons with disabilities, please contact William Beckman at (916) 324-8293 or wbeckman@dtsc.ca.gov**.**

Notice to Hearing Impaired: to obtain additional information, use the California State Relay Service at 1-888-877-5378 (TDD). Ask them to contact William Beckman at (916) 324-8293.

A brief background on the rulemaking can be found in Appendix A.

Addition information regarding perchlorate and this BMP rulemaking is available on the DTSC website at http://www.dtsc.ca.gov. The DTSC website will link to a draft perchlorate report that, when completed, will summarize the significant issues related to perchlorate, perchlorate regulation, and perchlorate contamination. Interested parties may also subscribe to an email list (listserv) in order to receive notices and information by email. Subscription may be made at http://www.calepa.ca.gov/Listservs/dtsc/.

DTSC proposes to use these workshop discussions to establish significant BMP applicability parameters and to develop specific BMP requirements. To insure that all identified issues are discussed and that all unanticipated issues are given an opportunity for discussion, DTSC proposes that the workshop discussions be scheduled in accordance with the attached agenda.

***Please note that while all effort will be made to adhere to the schedule, discussions will be conducted in an open forum format. Because many discussion issues are interrelated, topics may be introduced out of order. Attendees should be available for the duration of the workshop to insure their inclusion in topics of interest.

Issues that DTSC considers especially relevant to the perchlorate BMP rulemaking are illustrated in flowsheet format in Appendix B.

Information and comments received from the workshop will be used to develop draft regulatory language. Draft language will be developed after DTSC has considered all input received in the workshop and will be presented at a second workshop scheduled for September 23, 2005. DTSC intends to have draft regulatory language posted by the end of August 2005 so that specific regulatory language may be discussed during the September workshop.

Draft regulation language and all future documents will be posted on the DTSC website at http://www.dtsc.ca.gov.

For more information on the proposal for Perchlorate Best Management Practices, please contact Mr. Edward Nieto at (916) 322-7893 or by email at enieto@dtsc.ca.gov. Written comments may be mailed to:

Department of Toxic Substances Control
Attn: Ed Nieto - Perchlorate Workshop Comments
P.O. Box 806
Sacramento, California 95812-0806

Draft Agenda

9:00 Introductions

9:15 Best Management Practices (BMPs) Overview Presentation

10:00 BMPs Applicability Discussion

(**20 minutes) Perchlorate Materials that are Adequately Regulated**
Are existing regulations (hazardous materials, hazardous waste, others) effective in preventing the release of perchlorate-containing materials to soil, surface water, and groundwater?

(20 minutes) Materials with Low Perchlorate Concentration
Does limiting the applicability of the BMPs to materials with "intentionally added" perchlorate adequately protect water resources?

(20 minutes) Materials Containing Small Quantities of Perchlorate
Would excluding materials with small quantities of perchlorate (e.g., consumer goods, household products) pose a risk to water resources?

(20 minutes) Break

(40 minutes) Other Applicability Issues or Continuation of Applicability Discussions
Are there other applicability issues that should be identified/discussed?

12:00 Break for Lunch

1:00 BMPs; Specific Requirements

(20 minutes) Packaging Requirements
How would a requirement requiring durable, water-resistant packaging for perchlorate-containing products/materials impact industry, business, and consumers? How should "durable, water-resistant packaging" be defined?

(20 minutes) Labeling Requirements
Would a label act to protect water and soil resources by providing notification of perchlorate environmental contamination risk? How would such a requirement impact industry, business, and consumers?

(**20 minutes) Secondary Containment Requirements**
Should secondary containment requirements mirror hazardous waste requirements? How could the secondary containment requirements be modified to minimize the impact to industry, business, and consumers while preventing releases to soil or water?

(20 minutes) Recordkeeping Requirements
Do the records normally maintained by industry, business, and consumers provide adequate information regarding the management of perchlorate-containing materials? How would a recordkeeping requirement impact industry, business, and consumers?

(20 minutes) Break

(20 minutes) Reporting Requirements
Could adequate perchlorate management information be made available without including a reporting requirement?

(20 minutes) Notification Requirements
Could a notification requirement applicable to anyone initiating a perchlorate management activity in combination with a recordkeeping requirement provide adequate perchlorate management information? Can some perchlorate management activities be excluded from this notification requirement?

(20 minutes) Disposal/Discharge Requirements
Should the disposal of non-hazardous perchlorate-containing wastes be authorized only to those composite landfills that are specifically authorized to accept perchlorate-containing wastes? Should the discharge of non-hazardous perchlorate-containing wastes be authorized only in accordance with those POTW agreements and NPDES permits that specifically address perchlorate discharge?

(20 minutes) Other Issues or Continuation of Prior Discussions
Are there other BMP requirements that should be identified/discussed?

4:00 Workshop Concludes

APPENDIX A

Perchlorate Best Management Practices

Introduction

The Perchlorate Contamination Prevention Act (Assem. Bill No 826, Jackson 2003) (Act) states, "The discharge of perchlorate waste into the environment through air, surface and subsurface soils, surface water and groundwater media is a threat to water supply and to wildlife habitat, such as wetlands." The Act further mandates that, "On or before December 31, 2005, the Department [DTSC] shall adopt regulations specifying best management practices for a person managing perchlorate materials." The Act also defines "perchlorate material" as "…perchlorate and all perchlorate-containing substances, including, but not limited to, waste perchlorate and perchlorate-containing waste."

In addressing the mandate presented in the Act, DTSC recognizes the following legislative intent:

- a primary goal of the Act is to reduce (or eliminate) the release of perchlorate into the environment;
- this reduction shall be accomplished by the adoption of regulations, by DTSC, requiring compliance with best management practices for perchlorate materials; and
- these best management practices shall apply to all management activities and shall apply to all perchlorate containing materials.

As such, the Legislature has tasked DTSC to regulate and provide oversight in areas beyond its traditional role of hazardous waste management. The Legislature has also instructed that, because of environmental concerns, these regulations be adopted expeditiously as emergency regulation with a primary purpose of protecting water resources.

Regulatory Framework and Options

Typically when perchlorate is intentionally added to a material, its addition is intended to impart specific chemical characteristics on that material. Perchloric acid and perchlorate salts are strong oxidizers, highly reactive, and typically flammable. Perchlorate-containing materials in which the perchlorate is intentionally added, therefore, tend to also exhibit these chemical characteristics. Materials that exhibit hazardous characteristics such as reactivity and flammability are typically classified as a U.S. Department of Transportation (DOT) hazardous material and regulated under the Code of Federal Regulations, title 49, parts 100-199. Hazardous materials, so defined, are subject to packaging, marking, placarding, handling, shipping paper, and manifesting requirements. Perchlorate wastes that retain hazardous characteristics are subject to hazardous waste regulation under the Resource Conservation and Recovery Act (RCRA) or the state equivalent. Hazardous wastes in California must be managed in accordance with standards specified in California Code of Regulations, title 22, division 4.5. Hazardous waste management standards include labeling, containment, accumulation, manifesting, permitting, and disposal requirements.

In general, perchlorate containing wastes would be classified as an ignitable hazardous waste under California Code of Regulations, title 22, section 66261.21 by meeting the definition of oxidizer as specified in section 66261.21(a)(4). Because perchlorate wastes are typically not "listed" wastes (with the possible exception of K044 and K045 that identify certain explosive manufacturing wastes), perchlorate wastes that no longer exhibit hazardous characteristics would cease to be regulated as a hazardous waste. This distinction is especially relevant in the case of perchlorate. Historically, handling protocols for perchlorate wastes suggest dousing with water. This practice continues as an effective method for eliminating fire and explosion risk. In addition, the dousing process, if sufficient, would eliminate the hazardous characteristic making the material non-hazardous. The material may, therefore, not be subject to hazardous waste requirements and disposal restrictions (release and cleanup may be regulated under California Health and Safety Code, Chapter 6.8). Perchlorate ion would, however, persist in the doused material and would continue to pose a risk to water resources.

Residuals from combusted perchlorate materials or products, currently, are not regulated as a hazardous wastes, if they no longer display the ignitable/oxidizer characteristic (they may be hazardous due to metal content). Likewise materials and products that contain intentionally added perchlorate at concentration too low to result in hazardous characteristic or materials containing perchlorate as a result of contamination or byproduct formation would also not be subject to hazardous waste requirements and disposal restrictions.

In defining "perchlorate material" as "…perchlorate and all perchlorate-containing substances…" the Act mandates the adoption of best management practices (BMPs) for all perchlorate containing materials, not only those meeting hazardous material/waste criteria. While certain BMPs are required for hazardous materials and hazardous wastes, BMPs for other perchlorate materials do not currently exist. In addition, existing BMPs for hazardous perchlorate materials and hazardous perchlorate wastes were developed primarily to address reactivity characteristics and may not adequately account for perchlorate's propensity to contaminate water supplies.

The new awareness of perchlorate's potential threat to water resources as outlined in the Act, requires DTSC to develop and adopt BMPs that address the specific issue of the potential contamination of water resources by perchlorate-containing materials. In developing these BMPs, DTSC may consider several regulatory options. The following is a list of regulatory options that will be discussed during the workshop.

Options may be applied singularly or in combination:

A. <u>Apply Hazardous Wastes Requirements</u>
This option would require that all perchlorate-containing wastes including those that do not meet hazardous waste criteria be managed in accordance with existing hazardous wastes management standards. This approach relies upon existing hazardous waste regulatory framework – perchlorate specific management standards may need to be adopted to address perchlorate's newfound threat to water resources. The regulatory threshold is simply defined and requires minimal technical analytical analysis to determine if a waste qualifies.

Pros:

- By incorporating all perchlorate-containing wastes, this option would be most protective.
- Criteria are not dependent on perchlorate concentration.
- The regulatory process would not require the determination of a new threshold requiring management scenarios and risk assessments.
- Perchlorate contamination is controlled by regulating all potential waste sources, including perchlorate-containing products and materials (intentionally added), naturally occurring perchlorate materials, contaminated media, and products and materials in which perchlorate appears as a chemical byproduct.
- A zero tolerance threshold would be somewhat consistent with the Environmental Screening Levels (ESL) established by the San Francisco Regional Water Quality Control Board for water resource protection and the Preliminary Remediation Goals (PRG) established by U.S. EPA for health risk assessment.

Cons:

- All waste containing any amount of perchlorate would be required to comply with California's hazardous waste requirements, include hazardous waste manifesting, disposal/discharge prohibition, TSDF permitting, etc.
- Potentially large volumes of newly identified perchlorate-containing wastes may impact landfill and treatment capacities.
- Existing hazardous waste treatment capacity for perchlorate-containing wastes is geared toward reactivity not groundwater contamination risks – capacity incorporating low ppb treatment technology may not currently exist.
- Hazardous waste requirements would add a significant economic and administrative burden on California's businesses increasing costs to consumers of perchlorate containing products.
- Oversight obligations placed on state and local regulatory agencies would increase costs and manpower requirements.

B. Apply Hazardous Materials Requirements

This option would require that all perchlorate-containing materials be managed according to standards similar or equivalent to current 49 CFR requirements for hazardous materials. This approach would mirror federal hazardous material transportation requirements but would apply to all non-hazardous perchlorate-containing materials in California. Other hazardous material management standards might be applied such as those equivalent to Occupational Safety and Health Act, Toxic Substances Control Act, Emergency Planning & Community Right-to-Know Act, or those mandated by Fire Code, Building Code, and Hazardous Material Business Plans.

Pros:

- 49 CFR requirements offer a tested materials handling model that is familiar to the regulated community.
- 49 CFR containment requirements would act to prevent releases to the environment.

- 49 CFR labeling and shipping paper requirements may identify the product/material as a potential threat to water resources and identify appropriate emergency response and disposal protocols.

Cons:

- 49 CFR requirements are intended to address perchlorate's reactive characteristics and may not adequately address environmental contamination potential.
- Any perchlorate-containing material or product not otherwise regulated as a hazardous material or hazardous waste would be regulated as a hazardous material, including products/materials containing naturally occurring perchlorate; contaminated food, water, and soil; and products/materials containing low concentrations of perchlorate formed unintentionally as a chemical byproduct.

C. Adopt New Regulations for All Perchlorate Materials Not Regulated as a Hazardous Waste or a Hazardous Material

This option would require DTSC to adopt new regulations for the management of all non-hazardous perchlorate-containing materials and wastes not currently regulated as a hazardous material or a hazardous waste. New regulations would supplement existing hazardous material and hazardous waste requirements by establishing one or more new classes of regulated materials/products. Requirements for these new classes could be adopted to address the specific issues related to perchlorate and the products, materials, and industries that utilize perchlorate containing chemicals.

Pros:

- Class specific regulation would allow for management standards particularly suited to the risks associated with perchlorate without invoking full hazardous material and hazardous waste requirements on the regulated community.
- Specific management standards could be more simply modified or adjusted as technical data and regulatory experience becomes available.
- New regulations could be drafted to address environmental and health risks specific to perchlorate's characteristics, thereby being more protective.

Cons:

- This option would require the development of a complete set of new management standards.
- New regulatory requirements covering all perchlorate-containing materials and products would place a significant economic and administrative burden on businesses and individuals that produce, maintain, or utilize perchlorate material/products.
- Wastes generated from sources such as Colorado River water, food products, swimming pool water, and laundry bleach could fall under hazardous waste regulation.
- Wastes generated from naturally occurring perchlorate may become subject to hazardous waste type regulation.

- Oversight obligations placed on state and local regulatory agencies would increase costs and manpower requirements.

D. Adopt New Regulations for Materials with Intentionally Added Perchlorate

This option would require that DTSC adopt new regulations for the management of non-hazardous perchlorate-containing materials and wastes only for those materials in which the perchlorate was an intentionally added ingredient. Hazardous material and hazardous waste requirements would remain intact for those perchlorate-containing materials/wastes that meet hazardous definitions. This option would be similar to "C" above but would exclude material/products in which the perchlorate was not intentionally added. Regulating intentionally added materials/products would allow for the selective regulation of industrial and consumer perchlorate use while avoiding regulations of secondary materials resulting from contamination (e.g., water, soil, food products), materials resulting from chemical byproduct formation (e.g., laundry bleach, pool sanitizers, matches), and materials containing naturally-occurring perchlorate (e.g. fertilizer).

Pros:

- Limiting the rulemaking to intentionally added perchlorate materials would allow for the regulation of those industrial and consumer perchlorate applications that are known to have contributed to current surface and ground water contamination in California.
- Similarly, such a limitation would avoid placement of economic and administrative burdens on non-perchlorate industry stakeholders.

Cons:

- Limiting regulation to typical perchlorate industries and activities would be less protective of human health and the environment.

E. Develop Perchlorate Threshold Numbers

This option would require that DTSC develop concentration thresholds that identify the concentration at which perchlorate in products and materials pose a risk to water resources. These threshold numbers would be used to determine what perchlorate-containing materials must comply with perchlorate BMPs, as in establishing a concentration threshold above which a perchlorate waste must be managed as a hazardous waste. A similar threshold might be used to identify perchlorate materials that would be required to meet BMP packaging and containment requirements. Threshold numbers could also be use to identify various classes of perchlorate-containing materials in order to balance BMP costs with a material's environmental risks.

Perchlorate threshold numbers might be adapted from existing regulatory or advisory standards, as in those for hazardous waste criteria, preliminary remediation goals (PRG), environmental screening levels (ESL), public health goals (PHG), and maximum contamination level (MCL). Or, new threshold numbers might be developed based on leachate risk assessments similar to those used to develop California's current hazardous waste classification system but addressing perchlorate's newfound propensity to contaminate water resources and the concentrations specified by PHGs, PRGs, ESLs, etc.

Pros:

- The establishment of one or more threshold levels for perchlorate-containing materials would allow for the development of management standards that are particularly suited to address the specific health and environmental risks associated with each category of perchlorate-containing material and waste.

Cons:

- Establishment of new threshold numbers would involve rigorous and time consuming analytical development.
- Development of new threshold numbers based on existing methodologies might be expected to result in extremely low concentration levels similar to existing PHGs, PHGs, ESLs. Low threshold numbers would result in significant economic and administrative burden on the perchlorate industry, consumers of perchlorate containing products, and an unknown number of stakeholders that become entangled inadvertently in perchlorate contamination or byproduct issues.
- Establishment of concentration thresholds may require peer review.

F. Develop Industry Specific Management Practices

Develop industry specific perchlorate management practices. This option would be similar to option “C”, but specific BMPs would be developed for each perchlorate industry/product.

Pros:

- Management standards could be drafted to accommodate the specific risks and needs of individual perchlorate industries and products.
- Economic and administrative burdens could be limited to those industries and products that are known to have caused perchlorate contamination in the past or could be expected to contribute to contamination in the future.
- If the scope and variety of covered industries and products in limited, the rulemaking would result in a concise set of perchlorate management standards.

Cons:

- Limiting the coverage of management standards to specified industries instead of evaluating environmental risk based on quantity/concentration/pathway analysis may not be scientifically justifiable.
- If the scope and variety of covered industries and products becomes too numerous, the rulemaking could result in an unwieldy compilation of perchlorate management standards that would be difficult to complete within the deadline of these emergency regulations and difficult to administer in real-world situations.

G. Phased Implementation

The degree to which BMP regulations burden industry, consumers, and the regulatory agencies is dependent on the threshold adopted for adherence with perchlorate BMPs and the specific requirements adopted in the BMP regulations. Criteria employed in the development of PRGs and ESLs may represent the current best available science for establishment of perchlorate thresholds. There is, therefore, a probability that if a threshold were developed

identifying the concentration at which materials become subject to perchlorate management standards, that threshold may be in the low ppb (parts per billion). Thresholds at these levels would have a significant impact on those falling under new regulation. Implementing the more rigorous management standards and threshold levels in a phased approach would allow industry, consumers, and regulatory agencies to prepare for implementation thereby minimizing economic disruption. A phased approach would also allow industry to consider use reduction options and alternatives to perchlorate.

Options for Perchlorate Best Management Practices (BMPs)
The overall goal of the proposed perchlorate BMPs is to prevent future contamination of surface and ground waters.

Based on perchlorate's stability and solubility, it is assumed that any release of a perchlorate compound to the environment poses a significant opportunity for surface or ground water contamination proportionate to the quantity of perchlorate released. These BMPs, therefore, would act to protect surface and ground water resources by preventing release of perchlorate materials to the environment and by identifying potential sources of future contamination by providing a record of the movement of perchlorate containing materials, products, and wastes.

Specific BMP options may be applied to several materials-management categories: packaging requirements, labeling requirements, secondary containment requirements, record keeping and reporting requirements, notification requirements, and disposal/discharge restrictions. The following options will be discussed during the workshop:

A. Packaging Options
In order to prevent accidental release of perchlorate, non-hazardous perchlorate materials and non-hazardous perchlorate wastes might be contained within compatible water-resistant containers that meet general durability standards similar to DOT hazardous material container requirements.

B. Labeling Options
A basic premise of both hazardous materials and hazardous waste management is that the shipper or generator is responsible for providing an adequate description of the material so that anyone coming in contact with or becoming responsible for the material is aware of its hazards. Perchlorate BMPs might require labeling of perchlorate materials and wastes adequate to inform subsequent owners and overseers of the material's environmental risks and possible handling/disposal requirements.

C. Secondary Containment Options
Secondary containment of materials/wastes not otherwise contained by adequate packaging offers an obvious mechanism to prevent the release of perchlorate to the environment. Perchlorate BMPs might require that secondary containment be employed anytime a perchlorate material/waste is not contained in appropriate packaging or in situations in which an approved package would not prevent a perchlorate release.

D. Recordkeeping and Reporting Options

While hazardous waste management relies primarily on various reporting activities to monitor the cradle-to-grave movement of hazardous wastes, perchlorate BMPs might require that those handling perchlorate materials maintain records of receipt, storage, transfer, processing, disposal, and release of perchlorate containing materials. Maintenance of records as opposed to a manifest system (and other reporting requirements) could provide cradle-to-grave type information while minimizing paper work requirements on handlers and limiting additional workload to regulators.

If reporting is deemed necessary, an annual summary of the information identified in the recordkeeping requirements above might be considered.

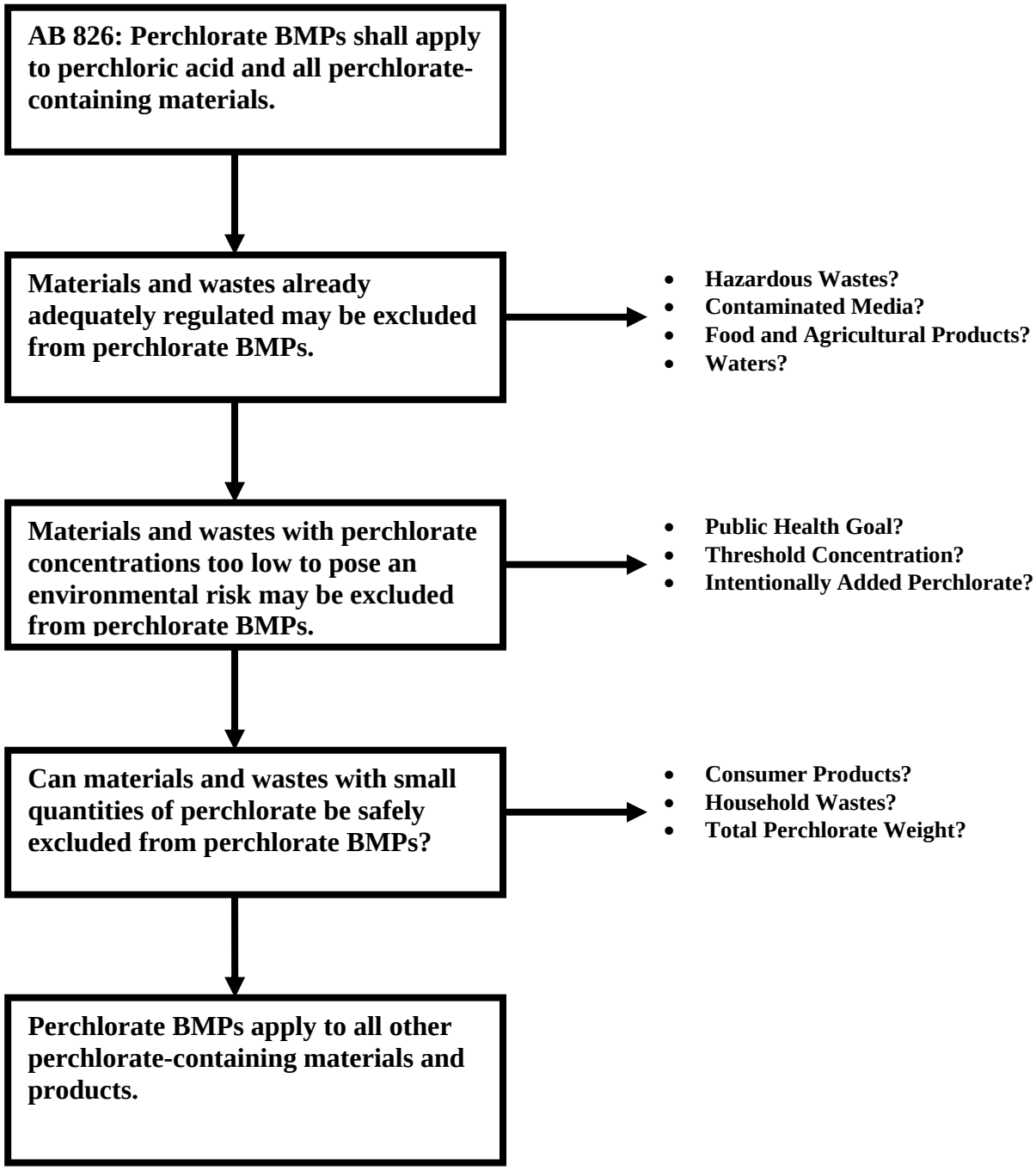
E. Notification Options

Recordkeeping requirements may provide adequate datum for perchlorate oversight, but such information may remain unknown without notification of its availability. Those businesses and individuals involved in managing perchlorate materials and wastes, therefore, could be required to notify DTSC of their activities so as to make available the information maintained in accordance with perchlorate recordkeeping requirements.

F. Disposal/discharge Restriction Options

Much of the current perchlorate contamination in California is the result of historical land disposal of solid and aqueous perchlorate wastes generated by manufacturers of perchlorate-containing products and by the use of perchlorate-containing products and materials. Current law does not specifically prohibit perchlorate disposal unless the waste meets hazardous waste criteria. If existing hazardous waste requirements are applied to perchlorate wastes meeting hazardous waste criteria, the proposed BMPs would only need to address those perchlorate-containing wastes not defined as hazardous waste under CCR, title 22. Perchlorate BMPs might prohibit disposal/discharge of these “non-hazardous” perchlorate containing wastes unless the disposal/discharge is in accordance with standards to be determined in coordination with other state and local agencies. BMPs might restrict disposal/discharge of non-hazardous perchlorate waste unless the disposal is to an approved composite lines landfill or discharged in accordance with an authorization that specifically addresses perchlorate content.

Appendix B
What Products, Materials, and Wastes Should be Subject to the Proposed Perchlorate Best Management Practices?



Proposed Perchlorate BMPs

The purpose of the proposed perchlorate BMPs is to protect California's water resources by preventing the release of perchlorate into the environment.