



WASTE MANAGEMENT

Public Affairs
915 L Street, Suite 1430
Sacramento, CA 95814
(916) 448-4675
(916) 448-2470 Fax

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Watson Gin, Deputy Director
Hazardous Waste Management Program
Department of Toxic Substances Control
1001 I Street
P.O. Box 806
Sacramento, CA 95812-0806

SUBJECT: EXTENDING THE POST-CLOSURE CARE PERIOD BEYOND 30 YEARS FOR HAZARDOUS WASTE FACILITIES – WASTE MANAGEMENT RESPONSE TO DTSC’S NOVEMBER 15, 2005 WORKSHOP

Dear Watson:

Thank you for the opportunity to provide written comments regarding the Department of Toxic Substances Control (DTSC) concerns about the existing 30-year post-closure care period that is currently contained in existing DTSC regulations. This letter is in response to the information presented at the workshops of October 17, 2005 and November 15, 2005 and various supporting material that the DTSC prepared for those workshops. The bulk of our response is contained in Attachment A to this letter as well as Figures 1 through 10 that are also attached.

In summary, the issues that we have addressed in the attachments are as follows:

1. ***Need for Regulatory Change.*** The DTSC has not established the need to change the current requirements of the regulations that provide a process for extending or shortening the post-closure care period (22 CCR 66264.117 (b)). The DTSC has provided no substantial evidence that this current procedure is not workable or warrants revision.
2. ***Post-Closure Care Period.*** There is only a single 30-year post-closure care period specified in the current regulations and it begins at the date of closure and cannot be restarted – only shortened or extended as provided.
3. ***DTSC Findings are Necessary to Extend Post-Closure Care.*** The DTSC must base any extension of the post-closure care period on a “finding” that such extension is necessary to protect human health and the environment.

4. ***The extension of the post-closure care is not limited to permit modifications.*** The procedures of 22 CCR 66264.117 (b) are applicable to any extension of the post-closure care period.
5. ***The 100-year cover design standard in the regulations does not set a 100-year post-closure care period.*** There is ample evidence in the documents that the regulations adopted by the DTSC only establish a 30-year post-closure care period that can only be extended based on findings by the DTSC that such extension is necessary to protect human health or the environment.
6. ***Post-closure care is not required as long as waste is present.*** The post-closure care period is the length of time necessary to protect human health and the environment *at the point of exposure* – not at the location of the waste. If there is no reasonable likelihood of exposure that would be harmful to human health and the environment, there is no further basis for post-closure care.
7. ***Post-closure care requirements should be based on established procedures for evaluating threats to human health or the environment.*** Such procedures should be based upon methods to evaluate threat based upon performance-based standards and consistently applied to all facilities regulated by the Department.
8. ***Should the DTSC amend the regulations to adopt extended periods of post-closure care?*** While Waste Management does not believe that the DTSC has established any hard evidence that the current regulatory procedures for extending post-closure care are not appropriate or workable, Waste Management would be willing to discuss and consider possible regulatory changes to the existing post-closure care regulations – provided certain other changes, such as post-closure care cost discounting, are also incorporated into the regulations.
9. ***The Regulations should be amended to allow realistic post-closure care costs and activity optimization.*** Rather than a 30-year multiplication of a single year annual costs, the post-closure care estimate should be based on projected optimized expenditure for post-closure care.
10. ***Post-closure care shortening.*** Clear procedures performance standards should be established to provide for post-closure care shortening or termination – based on *reasonable and likely risk* to human health or the environment – non on highly unlikely events or scenarios.
11. ***Allowance for cost build-up during the operating life of the facility.*** The regulations should only require sufficient post-closure care cost estimate that is needed at any particular point in time during the operating life – not the ultimate build-out of the facility at some distant time in the future.
12. ***Allowance of Post-Closure Care Cost Estimate “Discounting”.*** The regulations should allow future anticipated costs of post-closure care to be discounted to the present worth value in present day dollars that are actually required to provide for future post-closure care.

Waste Management would be pleased to discuss these and other matters pertaining to the post-closure care of hazardous waste facilities at your convenience. Please contact me if you have any questions, comments or concerns regarding our response to these issues or if you wish to schedule further meetings to discuss these matters with us. I will give you a call after the first of the year to discuss potential next steps the DTSC may take in these matter.

Sincerely,



Charles A. White
Director of Regulatory Affairs/West

Attachments: Attachment A: Extending the Post-Closure Period Beyond 30-years for
Hazardous Waste Facilities
Figures 1-10: Post-Closure Care Cost Estimating

cc: Leonard Robinson, Acting Deputy Director, DTSC
Peggy Harris, Division Chief, DTSC
Jan Radimsky, Branch Chief, DTSC
Ray LeClerc, DSTC

Attachment A

Extending the Post-Closure Care Period Beyond 30 years for Hazardous Waste Facilities

Issue 1: Is there a need to change the current requirements for the extension of the 30-year post-closure care period?

Waste Management contends that the DTSC already has the authority to extend the 30-year post-closure period and that the DTSC had not demonstrated the necessity of modifying the regulations. The DTSC has not offered any evidence that the procedures for extending the 30-year period have not worked, or are in any unworkable.

DTSC adopted section 66264.117 in Title 22 of the California Code of Regulations as the standard for extending or shortening post-closure care for any hazardous waste disposal site. After a careful review of the federal and state RCRA regulations, we do not see that DTSC has any other authority to establish, extend or shorten a post-closure care period.

Changing the standard from 30 years to an alternate or unspecified post-closure care period in California would be a dramatic departure from established state and federal regulation and policy. Such a change would have a tremendous impact on the businesses responsible for long-term care of RCRA facilities. It would disrupt the settled expectations and complex business decisions made on the basis of the existing and codified standard of 30 years of post-closure care. Such disruption would be further exacerbated by any additional restriction or limitation on currently available financial assurance instruments for post-closure care that is also apparently being considered by the DTSC.

The federal and state RCRA regulations explicitly establish the 30-year period and provide for a longer or shorter period. The California regulations state as follows:

“66264.117 Post-Closure Care and Use of Property

(b)(1) . . . Post-closure care for each hazardous waste management unit subject to the requirements of sections 66264.117 through 66.120 shall begin after completion of closure of the unit and, except as provided in subsections (b)(2)(A) and (b)(2)(B), continue for 30 years after that date . . .”¹

From that starting point, a fixed period of 30 years from the date of closure, the regulations then explain the steps the agency must take to extend or shorten the 30-year period. The regulations continue as follows:

“(b)(2) . . . any time during the post-closure period for a particular unit, the Department shall, in accordance with the permit modification procedures in chapters 20 and 21 of this division . . .”

¹ 22 Cal. Code Reg. Section 66264.117(b)(1) (emphasis added). See also 40 CFR 264.117(a)(1).

*(B) . . . extend the post-closure care period applicable to the hazardous waste management unit or facility if the Department finds that the extended period is to protect human health and the environment . . .*²

It is important to note that in both the federal and state regulations, it is the agency that has the burden of making a reasoned determination for an extension of the post-closure care period. In developing the RCRA program, upon which the DTSC regulations are based, EPA established a fixed period of 30 years and placed the obligation on the Director of an approved state to justify care beyond that period. EPA rejected an approach that would have required post-closure care in perpetuity with the burden on facility owner/operators to show that a shorter care period will protect human health and the environment.³ In stead, it adopted a defined 30-year period, and adopted provisions to allow the agency to shorten or lengthen the period, if it makes findings based on evidence.

According to the California Administrative Procedures Act (APA) the DTSC must establish the *necessity* for a new regulatory proposal. To date, Waste Management is not aware of any evidence that the DTSC has presented indicating that the procedure established in the regulations as cited above has not worked, or, indeed is not workable.

2: When is the post-closure care period and when can it be restarted?

In various workshop documents the DTSC has asserted that the post-closure care can be restarted for an additional 30 years at the time of post-closure permit re-issuance. However, Waste Management believes that there is no authority in existing California statute and regulations to simply “re-start” a new 30-year period – at any time. The 30-year period was established in federal and state law as a reasonable benchmark of post-closure care at hazardous waste (and solid waste) landfills. It runs from the date of unit *closure*, a date that cannot simply be reset every ten years, as DTSC suggests. A perpetual re-starting of the post-closure care period would render superfluous the clearly defined 30-year period specified in the regulations.

The 30-year post-closure period was based, in part, on EPA’s decision that more extended time frames would place an undue economic burden on businesses.⁴ In establishing the RCRA program, EPA explicitly rejected suggestions that all hazardous waste disposal facilities should require perpetual care. It opted instead for a finite, but not “unalterable” 30-year period, subject to shortening or extension for cause, on a case-

² 22 Cal. Code Reg. Section 66264.117(b)(2)(B) (emphasis added). See also 40 CFR 264.117(a)(2)(ii).

³ See Fed. Reg. 31,138 (August 17, 1988). See also “2001 EPA Inspector General Report” at 41 (“EPA could have initially written RCRA regulations requiring post-closure care in perpetuity, placing the burden of proof on the facilities to demonstrate that a reduction in care would not pose any threat to human health or the environment.”).

⁴ EPA, Office of Inspector General, “Audit Report: RCRA Financial Assurance for Closure and Post-Closure” 2001-P-007 at 41 (March 30, 2001) (hereinafter “2001 EPA Inspector General Report”).

by-case basis.⁵ It is clear from EPA's own interpretation of the extension provisions that such alterations would logically occur towards the end of the 30-year period.⁶

The law does allow DTSC to extend the 30-year period (as opposed to re-starting it). However, to do so, it must make technically supportable findings based on actual evidence that the extension is "necessary" to protect human health or the environment. At a minimum, such evidence would have to identify specific receptors, human or environmental, that would be adversely impacted without the protection of some extended period of post-closure care.

Waste Management is not aware of any federal EPA or California state guidance establishing a process or criteria for determining whether post-closure care should be extended beyond 30 years, and, if so, for how long. A 2001 study by the Office of the Inspector General of the US EPA came to the same conclusion. It surveyed nine states, including California, and found that none of the had yet "developed a policy and process to determine whether post-closure care should be extended beyond 30 years."⁷

If DTSC makes technically supportable findings that a site poses a threat to human health or the environment, then an extended post-closure care period may be warranted. But, DTSC has no statutory or regulatory authority to simply "restart" a new 30-year post-closure care period that is separate and distinct from the original post-closure care period that began when the facility was closed. By the plain language of the regulations, the 30-year period begins after "completions of closure of the unit . . . and continues for 30 years from that date."⁸ The date of closure is a date fixed in time, as is the date 30 years thereafter. DTSC cannot simply frontload an extension of the 30-year period by redefining the starting date from which it runs.

Issue 3: Findings Must Be Technically Supportable and Based on Sound Science

DTSC must base any extension of the post-closure care on a "finding" that such extension is necessary to protect human health and the environment. The dictionary definition of "finding" is "a conclusion reached after examination or investigation."⁹ A legal definition of "finding" is "a determination by a judge, jury or administrative agency support by the evidence in the record."¹⁰

⁵ 45 Fed. Reg. 33, 153, 33, 196-197 (May 19, 1980) (EPA comments on adoption of directly parallel language on 30-year post-closure period and extension procedure provisions for interim status facilities).

⁶ 49 Fed. Reg. 50,362 (December 27, 1984)

⁷ "2001 EPA Inspector General Report," *supra* note 1, at ii.

⁸ 22 Cal. Code Reg. Section 66264.117 (b)(1)

⁹ American Heritage Dictionary of the English Language (Internet Edition, 2000).

¹⁰ Black's Law Dictionary at 646 (1999).

To make a finding about whether a particular landfill requires extended post-closure care obviously requires a careful consideration of the facts. “Findings of fact” are “determinations from the evidence of a case, either by court or an administrative agency” or “a conclusion by way of reasonable inference from the evidence.”¹¹

Issue 4: Does the extension process only apply to permit modifications and can be thus ignored for other permit actions such as revisions or renewals?

The DTSC has contended that the regulatory language cited in Issue 1 above only applies to permit modifications and that somehow the DSTC is free to do what ever it wants during the course of other permits actions such as renewals – including restarting a new 30-year post-closure care period. Waste Management rejects this position as patently false. The requirements of 66264.117(b)(B)(2) apply to “any time during the post-closure care period for a particular unit” adding only that the shortening or lengthening of the prescriptive post-closure care period must be conducted “in accordance with the permit modification procedures in Chapters 20 and 21” – provided a finding is made indicating that such a modification is required to protect (or is protective of) human health and the environment.

The federal regulations and supporting documents upon which the DTSC’s regulations are based make it abundantly clear that the provisions of 22 CCR 66264.117 provide the *only* procedures for extending the post-closure care period in the existing DTSC regulations. To say otherwise would be to totally ignore the body of references in federal regulations and supporting documents that point to this language as the means of shortening or extending post-closure care – not one of multiple other possible means of shortening or extending (or restarting) the post-closure care period. Waste Management contends that the DTSC must follow substantially the same procedure outlined in 22 CCR 66264.117 regardless as to whether the permitting process is a permit modification, revision or renewal.

Issue 5: The 100-Year Cover Design Standard Does not set a 100-Year Post-Closure Care Period

In the workshop materials, the DTSC suggests that California law sets a 100-year post-closure care period. The agency notes that DTSC regulations include an engineering design specification that cover on a surface impoundment or landfill must durable for 100 years. DTSC argues that this translates to a 100-year post-closure period. Waste Management disagrees.

The regulation clearly provides that the landfill cap design standard applies when the cap is constructed: “At final closure of the landfill or upon closure on any cell, the owner or operator shall cover the landfill or cells with a final cover designed and constructed to . . .

¹¹ Black’s Law Dictionary at 569 (1999).

(1) prevent the downward entry of water into the closed landfill throughout a period of at least 100 years.”¹²

If DTSC wanted to adopt a 100-year post-closure period, it would not have done so obliquely, by burying the requirement in what is clearly an engineering design standard. Many regulations establish design standards. RCRA has design standards specifying duration of cover on a landfill. The state building codes establish design standards for seismic safety and durability of structures. These design standards often prescribe a period of time for structural integrity, not a comment upon site-specific threats to human health and the environment nor the RCRA post-closure standard. Design standards do not automatically translate into the formal permit conditions that are underwritten by formal financial assurances. To suggest otherwise is simply not credible.

There is ample evidence in the preambles to the federal RCRA regulations, upon which DTSC's regulations are clearly based, indicating that 30 years was established as the benchmark period for post-closure care. California's regulations on the 30-year post-closure care period and the extension or shortening of that period are substantially identical to the federal regulations (except for the procedures requiring owner/operator justification for *shortening* the period, and those *mandating* rather than permitting DTSC to extend or shorten the period *if* appropriate findings are made). Thus, we believe the guidance in the federal preambles to be authoritative.

Issue 6: Is Post-Closure Care Required As Long As There Is Waste Present?

The Cal EPA DTSC staff has developed a draft Position Paper regarding the term of post-closure care for closed hazardous waste landfills and the mechanisms available to providing funding for such obligations. This paper was discussed in brief in at a workshop on Financial Assurance (October 17, 2005) and in more detail in a workshop on Extending the Post-Closure Care Period (November 15, 2005). DTSC positions and our initial input are included below.

DTSC Position Statement:

“Generally, the period of post-closure has been described as the length of time the waste remains a risk without the benefits of the closure structures. Unless or until the waste material degrades into a material that will not pose a risk as unrestricted use, some level of post-closure maintenance and monitoring is required..... Based on the type of waste that has and continues to be placed in land disposal units, the material will remain a risk for hundreds or thousands of years without maintenance of containment structures and engineering controls.”

“The DTSC has concluded that the post-closure care period for land disposal facilities is indefinite and would extend until perpetuity, since the waste remains onsite. However, it is likely that certain monitoring requirements (and possibly other post-closure requirements) could be revised over time. Additionally, DTSC

¹² 22 Cal. Code Reg. Section 66264.310 (a).

can only release facilities from financial assurance requirements after all post-closure care requirements have been met [§66264.145(j)].”

Waste Management Response:

The DTSC draft position statement is not founded in California regulatory statute for term of post-closure care nor is it based upon specific data that would support the statement that all landfills closed under §66264.110 (Article 7) will essentially always be a threat to HH&E. The PCC term is provided in §66264.117 as 30 years with provisions included under (b)(2)(A) to shorten and (b)(2)(B) to lengthen the term based upon a need to protect human health and the environment (HH&E). The example provided in §66264.117(b)(2)(B) for extending the PCC term states “e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment.”

The 30-year PCC period of RCRA Subtitle C is based on EPA’s judgment that “...it may take as long as 30 years for material leaching from hazardous wastes to migrate to groundwater...” [see 56 FR at 51100 through 51102 dated 9 October 1991, and 46 FR 2819 dated 12 January 1981]. The preamble to Subtitle C (46 FR 2820) goes on to state that, other than having a length of 30 years, the PCC period “*should be based only on relevant environmental factors*”. It is reasonable to assume that this means that any modification of the prescriptive PCC term be site-specific in nature and based upon “relevant environmental factors” pertaining to the specific hazardous waste facility. The preamble does not provide statements that suggest the position that “*the material will remain a risk for hundreds or thousands of years*”. The fact that hazardous constituents remain in place is not sufficient reason to extend the PCC period. It must be based on a finding that the potential for migration poses a significant risk.

A point that requires clarification is differentiating “risk” from “threat,” a subject raised in a relevant USEPA guidance document for Solid Waste facilities. USEPA has provided guidance for solid waste disposal facilities indicating elements of post-closure care may be eliminated if “the owner or operator can demonstrate that the leachate (and presumably other source material like landfill gas) no longer poses a threat to human health or the environment”. Guidance for determining “threat” is provided in the USEPA Solid Waste Technical Manual (EPA530-R-93-017, Section 6.6.3), which states:

“Concentrations at the points of exposure, rather than concentrations in the collection system, may be used when assessing threats.”

The guidance identifies the potential threat from a waste management unit at some location (receptor) away from the source (i.e., at ‘points of exposure’). The DTSC position that risk exists until the waste material degrades to an inert state is inconsistent with the EPA guidance referenced above. Landfills are engineered structures designed, built, and operated to contain waste and manage potential risk. Although a hazardous waste landfill may pose a risk if improperly managed, there is no threat to the environment if the engineered control structures do not fail. USEPA guidance essentially supports that the 30-year PCC term could be extended *if a threat is determined at a point of exposure*. The guidance does not advocate making overly conservative assumptions to

determine risk at the source nor does the guidance suggest that a waste management unit will be a “threat” hundreds or thousands of years in the future.” More simply stated, the mere presence of leachate in a landfill does not render its existence a threat to HH&E.

The DTSC statement that “the post-closure care period for land disposal facilities is indefinite and would extend until perpetuity, since the waste remains onsite” is not founded in California or Federal statute or peer reviewed technical literature. This position is not supported by USEPA and does not consider the input of technical experts across the country that have been developing criteria and metrics to determine when a landfill has reached a stage when regulatory PCC can successfully end. The SWANA bioreactor committee has offered a definition of “landfill stability relative to threat” that may provide a basis for future decisions on ending PCC. The definition states:

“A landfill is functionally stable when it does not present a threat to human health and the environment. Potential threats to human health and the environment must be assessed in consideration of leachate quality and quantity; gas composition and production; cover, side-slope and liner design; site geology and hydrogeology; climate; potential receiving bodies, ecosystems and human exposure; and other factors deemed relevant on a site-specific basis. Potential threats to human health and the environment should be assessed in the context of a proposed end use and a proposed level of post-closure care, which may vary from no care, to some level of extended care that is designed to assure that no factor(s) change that could increase potential threats to human health and the environment.”

Although developed for solid waste landfills, the concept of “functional stability” applies to hazardous waste landfills. Consideration of end-use of the property and evaluation of threat at the point(s) of exposure are reasonable and defensible drivers that can be used to determine if PCC should be shortened or extended. In addition, post-closure plans required under §66264.117(c) can provide for long-term cap maintenance via institutional controls or covenants to limit access by the public (c)(2) and to maintain the integrity of the final cap (d). These kinds of measures are employed routinely and without recourse to any permitting regime at sites deleted from the federal National Priorities List and at brownfield sites overseen by the states. Such provisions should not extend the PCC term.

Issue 7: How should the DTSC evaluate threats to human health or the environment?

Work has been underway for a number of years on the development of protocols for evaluating landfill post-closure care performance. One effort focusing on municipal solid waste landfills may be a useful point of reference. A forthcoming report, entitled “*Project Summary Report: Development of a Performance-Based System for Post-Closure Care at MSW Landfills*,” is being prepared for the Environmental Research and Education Foundation (EREF) by GeoSyntec Consultants (GeoSyntec). EREF is an independent grant-making entity whose mission is to develop technological innovations that promote the safety of waste service employees and the public, as well as waste service productivity and resource conservation. The purpose of the report will be to present a performance-based approach for addressing site-specific post-closure care

(PCC) obligations under RCRA Subtitle D Part 258, with a site-specific protocol evaluating the status of the key components of PCC. A team of technical experts and leading researchers is preparing the report. A Technical Advisory Panel composed of representatives from the private sector, public sector, regulatory agencies, and research institutions is providing peer review of the report.

While the EREF report is specific to Subtitle D municipal solid waste landfills, similar procedures for hazardous waste landfills may be useful. The DTSC should consider developing standardized procedures and protocols for evaluating the post-closure care performance of hazardous waste facilities subject to post-closure care.

Issue 8: Should the DTSC amend the regulations to adopt extended periods of post-closure care?

We do not believe that the DTSC has established any clear need to modify the existing regulatory structure that establishes a single 30-year period and allows a “shortening” or “extension” of that period through subsequent findings pertaining to a threat to human health and the environment (See Attached Figure 1). WM recognizes that there is concern on the part of some regulators that a fixed 30-year post closure care period -- as currently reflected in the regulations -- may not be sufficient to address the period for which some level of post-closure care may ultimately be required. We believe the 30-year PCC period is reasonable. However, in deference to DTSC’s stated concerns, we would consider support for modification of the regulations to *clarify* that the 30-year period can be extended on a site-specific basis consistent with the existing rule (i.e., based on a site-specific assessment of the potential for exposure to hazardous waste at levels that may be a threat to human health or the environment).

One possibility would be for the DTSC Director to initially determine that continuation of post-closure care beyond the term stipulated in 22 CCR 66264.117(b)(1) is necessary to protect HH&E. If such a determination by the Director is made, the regulations could be modified to allow the post-closure period to be extended by one year on an annual basis during the PCC period. Financial assurance would remain at 30 years (at the appropriate level) until such time as a site-specific evaluation determines the waste management unit (WMU) does not present a threat to human health or the environment at the relevant point of exposure.

The hypothetical approach described above would provide the DTSC with the regulatory structure for an annually funded 30-year PCC Financial Assurance instrument (a.k.a., “Rolling 30-year period” – See Figure 2) as long as a site-specific determination of threat justifies the need for continuation of post-closure care beyond 30 years.

In addition, other “Rolling PCC periods” should be considered. For example, after 15 years of PCC, the DTSC may determine that the “Rolling PCC period” should extend only 15 years, not 30 years. Thus, at year 15, the DTSC would establish a “Rolling 15-year period” from that point forward until the owner/operator demonstrates (and the DTSC determines) that the WMU does not present a threat to human health and the environment at the relevant point of exposure and the PCC period can be further reduced.

However, in order to potentially support this very conservative “Rolling PCC period” approach in a future regulatory change, WM would wish to work with the DTSC to ensure that access to existing Financial Assurance Mechanism is broadly maintained without unreasonable restriction and that the following provisions, as further described below, are also included in the amended regulations:

- Realistic Post-Closure Cost Estimates Based on Projected Costs
- Post-Closure Care Activity Optimization
- Allowance of Shortened Post-Closure Care Period
- Allowance for Post-Closure Care Buildup During the Operating Life of the Landfill
- Post-Closure Care Cost Estimate Discounting

Issue 9: Realistic Post-Closure Care Costs and Activity Optimization.

Existing California hazardous waste PCC regulations require that the annual cost of PCC be multiplied by the number of years in the PCC period [22 CCR 66264.144 (a)(2)]. Typically, PCC costs will decline over time during the course of the PCC period. The existing regulations allow recognition of this concept by simply stating that the annual cost is multiplied by 30 years (See attached Figure 3). We believe that the DTSC should recognize that this annual cost is the average annual cost of PCC during the 30 years – not the maximum cost. Thus, the PCC cost estimate should be a realistic reflection of the actual average costs that are anticipated during the 30-year PCC period (See Figure 4).

Annual costs for each year of the PCC period should reflect cost components that can be predicted to decrease over time, such as leachate generation. In addition, at any time the owner/operator should be able to propose optimizing PCC activities for the site -- subject to DTSC approval. For example, if PCC costs are estimated based on collection of quarterly groundwater monitoring samples for 30 years, but through a demonstration approved by the DTSC it is shown that the monitoring can be changed to semi-annual, the amount of required annual post-closure care can be reduced for the corresponding period. In this manner, the costs anticipated for PCC activities are maintained commensurate with the actual activities required at the site to ensure protection of human health or the environment (See attached Figure 4).

Issue 10: Post-Closure Care Period Shortening

At any time the owner/operator should be able to make a demonstration that a remaining PCC period shorter than the established “rolling period” is warranted. Such a demonstration must be based on a comprehensive facility, waste, and physical setting analysis and be subject to DTSC approval. Clear procedures performance standards should be established to provide for post-closure care shortening or termination – based on *reasonable and likely threat* to human health or the environment – not on highly unlikely events or scenarios. Of course, a re-extension of the PCC could be initiated at any time that the DTSC determines that a longer period is necessary to protect human health or the environment.

Issue 11: Allowance for PCC cost “buildup” during operating life

The DTSC should also allow the PCC cost estimate to build up during the operating life of the facility proportionately to its potential threat to human health and the environment. Existing California regulations require that the full amount of PCC cost estimate must be provided from day one of the start of operation of a particular facility or WMU regardless of whether the full PCC liability exists at that time (e.g., actual constructed capacity and associated PCC costs).

WM proposes that the amount of PCC financial assurance required at every stage of the operational life of the facility should be commensurate with the actual costs of PCC should the facility close at any given time. This is consistent with the way that a PCC Trust Fund is allowed to build up over time – the full amount of PCC is not reached until the PCC period is ready to begin. The same build-up should be available for use by financial assurance mechanisms other than a trust fund (e.g., corporate guarantee, insurance, letters of credit, surety bonds, etc.). The full amount of PCC would be assured under such an arrangement – the amount of PCC financial assurance would never be less than the actual amount required if the PCC period were to begin at any point in time during the operating life of the WMU (See Attached Figure 7).

Issue 12: PCC Cost Estimate Discounting.

The DTSC should also recognize that future PCC monies can only be spent in the future and, therefore, allow for PCC cost estimate discounting over the PCC period.

Current US Environmental Protection Agency (“EPA”) regulations do allow for discounting for RCRA solid waste disposal facilities, but only with the specific approval of the respective State Director. According to Title 40, §258.75, *Discounting*,

“The Director of an approved State may allow discounting of closure cost estimates in §258.74(a), post closure cost estimates in §257.72(a) and/or corrective action costs in §258.73(a) up to the rate of return for essentially risk free investments, net of inflation, under the following conditions:

- a) The State Director determines that cost estimates are complete and accurate and the owner or operator has submitted a statement from a Register Professional Engineer so stating;
- b) The State finds the facility in compliance with applicable and appropriate permit conditions;
- c) The State Director determines that the closure date is certain and the owner or operator certifies that there are no foreseeable factors that will change the estimate of site life; and
- d) Discounting cost estimates must be adjusted annually to reflect inflation and years of remaining life.”

Federal regulations for hazardous waste facilities do not include this explicit policy, but the standards accommodate the same interpretation. Section 264.144 requires that facilities possess each year a PCC cost estimate in current dollars, adjusted for inflation.

There is no prohibition on annual accommodation for both inflation and discounting to reflect the risk free rate of return on investment.

Existing California regulations require the owner/operator to make an estimate of the cost of PCC in current dollars, without considering the impact of discounting for the time value of money. Thereafter, the owner/operator must adjust the PCC cost estimate annually due to the cost of inflation (See Attached Figure 8). As the Subtitle D regulations recognize, the present worth value of money reflects both the discount rate and the inflation rate. The discount rate is typically higher than the rate of inflation, recognizing the true present worth value of money. Thus, in addition to inflating the PCC cost estimate annually, the owner/operator should be allowed to "discount" the amount of financial assurance using a DTSC approved "discount rate" for expenses that can only be spent in the future (e.g., "year 20" activity costs of a 30-year PCC period – See Attached Figure 9). Thus the amount of financial assurance that is required at any point in time is the projected cost of financial assurance "discounted" to the value in present day dollars (See Attached Figure 10).

The following information derived from the procedures that the California Department of Transportation employs to establish a discount rate for transportation project financing is offered as further elaboration of this concept:

The interest rates charged by banks typically include three components:

- An inflation component to account for the decrease in purchasing power
- A risk component to account for the chance that the loan will not be repaid
- A "real" interest rate to account for the productive value of the money.

Discount rates are typically based on an interest rate for government borrowing that has little risk, with the inflation component subtracted, yielding the "real" interest rate. This rate is typically calculated by subtracting the rate of inflation (consumer price index) from the interest rate of an investment such as a 10-year US Treasury bill. For example, if the interest on a 10-Year Treasury bill is 5.5 percent and the inflation rate is 3 percent, then the discount rate would be 2.5 percent.

The U.S. Office of Management and budget publishes "real" interests rates on its website:

http://www.whitehouse.gov/omb/circulars/a094/a94_appx-c.html

For example, below are the real rates published on the site in January 2005 – which are updated annually by the White House Office of Management and Budget.

Real Interest Rates on Treasury Notes and Bonds of Specified Maturities

| 3-Year | 5-Year | 7-Year | 10-Year | 30-Year |
|--------|--------|--------|---------|---------|
| 1.7 % | 2.0% | 2.3% | 2.5% | 3.1% |

Source: http://www.whitehouse.gov/omb/circulars/a094/a94_appx-c.html