3/18/08 Bd. Mtg. Item 13
Recycle Water Policy
Deadline: 3/10/08 by 12 p.m.

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State Water Resources Control Board
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COMMENTS ON THE DRAFT RECYCLED WATER POLICY

Thank you for the opportunity to comment on the subject revised draft Recycled Water Policy. I supplied comments on the previous version of the document when it was titled Water Recycling Policy. I have the following comments for your consideration:

1. General Comments

    a. I did not receive a response to my previous comments, though I see on the website that my comments were received by your office. Thus, I do not know whether or not my comments were considered in revising the document nor any rationale for not including or discussing the comments. This particular process is not stakeholder-friendly. In other projects dealing with cleanup sites and CEQA reviews a response to comments is nearly always provided. In comments I receive on permits and documents that I produce, response to comments received is always provided. Common courtesy would dictate that a response is warranted. I see nothing in the revised policy that satisfactorily responds to a majority of my previous comments.

    b. As I state previously, I fully support the concept of an increase use of recycled water for a multitude of uses. Recharging wastewater to the groundwater for later extraction and use is an approach that has much value. The idea that a water containing pollutants at a specific level should be allowed to be recharged anywhere within the state is a fallacy. As done with each set of waste discharge requirements for a specified activity, the proposed project needs to be considered on its own merits. The quality of the groundwater and the quality of the wastewater proposed for recharge need to be evaluated on a case-by-case basis to assure that groundwater, along with present and future beneficial uses, is sufficiently protected.

    c. Has there been an evaluation of the potential for Natural Resource Damage claims in regards to allowing the degradation to occur? The State of New Jersey currently is obtaining Natural Resource Damage claims against responsible parties that have cleaned up sites to meet specified criteria. However, the remaining pollutants have degraded the water resource – resulting in a damage to the

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resource and a subsequent penalties. See also *State of New Mexico v. General Electric Company* where $27 million was spend on investigation and cleanup and the resource damage claim after completing the cleanup was $5 billion.

d. Not all of the various Regions of the State Regional Water Quality Control Board systems have the same need or desire to protect groundwater quality. As an example, Region 5 (the Central Valley Region's Basin Plan is the only one that have read in its entirety) places a good deal of emphasis on protection of groundwater quality. That Basin Plan contains both a narrative toxicity objective for groundwater (no detrimental physiologic responses in humans) and a *Policy for Application of Water Quality Objectives*, which requires that narratives be applied with numerical limits in Board Orders. The plan as written would not be in compliance with the *Policy for Application of Water Quality Objectives* in the Region 5 Basin Plan. The plan allows for injection of water at concentrations of pollutants up the MCL, regardless of what the risk values for those pollutants are, nor looking at additive risks of the pollutants.

No other Region has this combination of Basin Plan features. Region 5 is also unique in that it supplies 2/3 of the State's demand for surface water and 3/4 of the State's demand for groundwater. As such, Region 5 has a need to be more protective of its water resources.

2. Specific Comments:

a. Finding 4. It is stated that uniform interpretation of the similar requirements found in Regional Water Quality Control Board's Basin Plans is needed to reduce uncertainty in the design requirements of recycled water projects. Though, in part, that may be a desirable outcome, one should not default to the most lenient, and least water quality protective, interpretation of those requirements, as it appears to occur in this draft policy. As drafted the policy would allow:

i. Using the entire capacity of the receiving water to assimilate selected pollutants. By doing so, it places a greater burden on downgradient sources of those pollutants to reduce their impact on the receiving water and potentially requires them to cleanup further than would ordinarily be required and/or provide additional treatment;

ii. The concentrations of pollutants in the aquifer from recharge of the recycled water to exceed concentrations that are

being required to be remediated at groundwater pollution sites in some Regions;

iii. For a different interpretation of Central Valley Region's Basin Plan requirements than the interpretation that has been provided by legal counsels from the State Board over the last 20-30 years.

Allowing the attire assimilative capacity of the groundwater for a given pollutant to be used by a single project is incomprehensible. This is contrary to the Total Daily Maximum Load and National Pollution Discharge Elimination System permitting project. Would it be okay for the Sacramento Regional Sanitation District to be allowed to use up the entire assimilative capacity of the Sacramento River for copper and make the downstream NPDES dischargers reduce their copper discharge concentrations to a lower value due because of that? This situation is no different.

3. Finding 11: This finding should state that it is referring to "recycled water used for irrigation purposes as the statements contained in the finding do not work for recharging of recycled water. In any case, the concept presented in this clause, that the increase in the amount of salt that flows to groundwater during application of recycled water is flawed. The way the policy is structured the salts being applied will, by design, migrate to groundwater to avoid buildup in the root zone. The additional applied salts will increase the salt concentration in the groundwater except in areas that are already high in TDS.

4. Findings 15 and 16. The statement that MCLs and other requirements or recommendations provided by CDPH provide reasonable protection of groundwater quality for the beneficial use of municipal supply is not a valid statement. There are many chemicals for which there is no MCL but can pose an unacceptable risk to human health through municipal use of water containing those chemicals. For the State of California, the Office of Health Hazard Assessment (OEHHA) is the agency that evaluates the risk posed by a posed by a given chemical and produces a *de minimus* value. The CDPH then takes that information and can establish an MCL for a pollutant. Thus, it should be stated that the Public Health Goals developed by OEHHA are those that are protective – particularly for pollutants without an MCL.

   Each water source proposed for recharge to groundwater should undergo a risk assessment process to evaluate the complete range of chemicals, particularly those that do not have MCLs associated with them. In addition, risks posed by some chemicals have been reassessed since the original MCL was established for the chemical. As examples the

reassessment has shown a greater risk associated with PCE, TCE and vinyl chloride than was considered during the adoption of the MCL. Some of the MCLs were established at the detection level at the time of development and/or did not take into account inhalation of the pollutant during normal residential use of the water.

5. Finding 17. If one is relying on biodegradation of selected pollutants in the vadose zone, more than just appropriate hydrogeologic conditions need to be present. The appropriate conditions to stimulate biological growth and reduction of the pollutant need to be present. These conditions include the type of bacteria present, available nutrients for bacterial growth, carbon source, and sufficient attenuation within the vadose zone to allow the degradation to occur.

6. Finding 24. The last sentence added to this Finding states that "projects that implement these actions and comply with this policy during this interim period will not unreasonably affect beneficial uses of such water . . . " Where is the rationale and evaluation that will support this statement. This is something that should be determined on a case-by-case basis.

7. As written the policy could allow recharge of water containing pollutants at concentrations that Region 5 is currently requiring responsible parties to cleanup in groundwater. Effluent limitations as specified in the document are set at the MCL or other value set by CDPH. A classic example is n-nitrosodimethylamine (NDMA), a pollutant that has a Public Health Goal of 3 ppt and a notification level of 10 ppt. NDMA is associated with hydrazine and is also formed in many water and wastewater treatment processes that use chlorine in the presence of nitrogen compounds. Currently we are requiring cleanup of NDMA to 2-3 ppt and this policy would not restrict the application of NDMA-bearing recycled waters to concentrations that would necessitate remediation. Even TCE is being required in some cases to meet the Public Health Goal of 0.8 ppb (MCL= 5 ppb). Thus, we could require the water to be cleaned up to the PHG, and then a recharge project could come along and re-pollute the same aquifer up the MCL.

8. Finding 26. This clause states that the benefits of recycling projects outweigh the costs associated with lowering of water quality. Nowhere in the document does it present what the costs are that are associated with the "lowering of water quality." How does one put a price tag on using up a groundwater aquifer's ability to assimilate pollutants once the concentrations reach water quality objectives? In many cases, depending on the quality of the water being reclaimed, it is likely that the recycling project provides a net benefit. However, there can be cases where the water quality of the recycled water and the of the aquifer are such that the "costs" outweigh the "benefits." It is my contention that a project-specific

analysis should be performed on each proposed recycling project to ascertain its merits versus the degradation of water quality that would occur. This does not adequately occur in the development of a "Policy."

If this policy were in-place in 1982, it would have required that the Regional Board find that the recharge of Aerojet's extracted and treated groundwater is acceptable for recharge. The Regional Board never permitted the discharge and now a good portion of the cleanup at Aerojet is associated with cleanup of the recharged groundwater

9. Requirement 1.C. It states that nothing in this Policy precludes the State Water Board from taking more stringent action on a case-by-case basis. Why shouldn't the Regional Boards be able to do the same? After all it is their basin they are trying to protect through implementation of their Basin Plan.

10. Requirement II, F. The definition of recycled water should state that the water must meet a Title 22 requirements for recycled water in regards not only to appropriate levels, but by appropriate methods stated in Title 22.

11. Requirement IIIB.1. The effluent limit for TDS is listed as the average monthly source water TDS plus 550 mg/L. Nowhere is it presented how that value is protective of water quality in all cases. In the last version of the document, the value was plus 300 mg/L and water quality justification of that value was not provided. The staff report just states that the value is what most recycled water users can meet. That is not a water quality rationale for the value. In addition, if the recharged recycled water comes to be the source water then the concentration of TDS in the recharge water will continue to spiral upward.

12. Requirement IV.A. As stated above OEHHA, not CDPH, provides a value for public health protection. MCLs are developed by CDPH using the risk values developed by OEHHA. The values that can be used as an effluent limitation should include those health values published by OEHHA. In addition, MCLs do not necessarily meet the narrative toxicity objective. See Region 5 Basin Plan, including the *Policy for Application of Water Quality Objectives*.

13. Requirement IV.B. As stated in my previous comments, this approach should be applied to all pollutants, including those that have MCLs.

14. Requirement V. The initial statement has been added: "The following requirements apply to groundwater reuse projects:". It would be better to state that "The following additional requirements . . " as some of the previous requirements in the document also apply to groundwater reuse projects.

15. Staff Report, page 1, paragraph 4. The policy does not address impoundments that store recycled water and states that the Regional Water Quality Control Board should develop requirements on a case-by-case basis. So, recharge of recycled water is sufficiently understood that general requirements can apply to al such projects. However, storing the recycled water in a pond is more complex and should be considered on a case-by-case basis. Seems backward to me as recharging water directly is much more of a complex item with respect to water quality projection than storage of the same water.

16. Staff Report, page 6, paragraph 2, items a) and b). There is no information supplied that justifies these values as protecting water quality in all instances. Rationale in that regard needs to be supplied.

17. Staff Report, page 7, paragraph 1, item a). This paragraph states that some existing water recycling projects may have to cease operating if the limitations for concentrations of salts are set at water quality objectives. If an adverse water quality impact could be occurring at an existing project due to salts, it is a good thing to further restrict the salt loading. So from what is stated, we set wastewater limits for wastewater is percolation ponds at the water quality objective, but for recycled water we can be less stringent and allow the degradation to occur. This is not consistent.

    In addition, one of the other justifications provided in this paragraph for not requiring effluent limitations for salt that meet the Water Quality Objective states that "because of evapotranspirative effects, this alternative does not ensure that the percolate that flows from the surface of a recycled water irrigation site to groundwater complies with water quality objectives." It does however provide a much better possibility that percolate will comply than if the requirement is relaxed as proposed.

18. Staff Report, page 8, first paragraph, item b). The last sentence of this item states that " . . . it would make many recycled water projects infeasible, because this would often generate limitations for salts in recycled water that are lower than concentrations of salt in the water supply. As one of your main functions is a water resource **protection** agency, the goal should be first to protect the resource. The goal should not be to relax standards sufficiently to allow for something to occur regardless of the water quality impacts. This issue is even more of a concern with groundwater recharge projects where all of the salt will be placed into the aquifer in a relatively short period of time.

19. Staff Report, page 9, item f). Instead of providing no direction, some direction could be provided without eliminating the flexibility the Regional

Boards need to implement the basin plan on site-specific basis. There is no discussion on why this alternative is not acceptable.

20. Staff Report, page 9, second paragraph (chooses recommended alternative). The only justification of the 550 mg/L TDS as the allowable increase between source water and water to recycled is that most producers can meet the value. Where is the justification that demonstrates that water quality will be protected?

21. Staff Report, page 10, Staff Recommendation. As with TDS, justification on the selection of 3 mg/L for nitrogen as the effluent limit for protection of water quality needs to be provided.

22. Staff Report, paragraph 4, first sentence. It would be better to state that the proposed Policy would " . . establish uniform minimum requirements for recycled water projects." The requirements should be allowed to be more stringent on a case-by-case basis and the Policy applies to both irrigation with recycled water and direct recharge of recycled water.

23. Staff Report, page 17, second paragraph. The second sentence discusses only irrigation uses of recycled water. How is recycled water used for direct recharge dealt with under the Resolution No. 68-16.

24. Staff Report, pages 18 and 19. It cannot item (a) it cannot be stated that the Policy requirements provide adequate mitigation to ensure compliance with water quality objectives. There is no documentation provided that supports the values for TDS and nitrogen that are proposed for effluent limitations.

Thank you for considering the above comments in developing revisions to the draft Recycled Water Policy.

If you have any questions, please call me at (916) 858-1030 or e-mail me at sansuey@sbcglobal.net.

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