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October 26, 2007

12/4/07 Bd. Mtg.
Water Recycling Policy
Deadline: 10/26/07 Noon

Ms. Jeanine Townsend
Acting Clerk to the Board
Executive Office
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Subject: Comments on SWRCB's Proposed Water Recycling Policy

Dear Ms. Townsend:

Stanford University appreciates the opportunity to provide comments on the "Certified Regulatory Program Environmental Analysis Concerning a Proposed Water Recycling Policy." We would like to preface our comments by stating that we appreciate the SWRCB's efforts to create a uniform water recycling policy for the State of California. Our intent in preparing these comments is to ensure that Stanford can develop a feasible water recycling program in the future that meets our water supply needs and is also sufficiently protective of public health and resources and existing beneficial uses.

We have comments on four specific sections of the Water Recycling Policy: paragraphs 3 and 7(a) dealing with nutrient management, paragraphs 4 and 5 regarding the definition of recycled water to be covered by this policy, and paragraph 7(d) regarding maximum TDS levels. Our specific comments are as follows:

"3. **For the purpose of this Policy, "nutrient management" is the act of managing the amount, source, placement, form and timing of the application of plant nutrients and soil amendments. It is done to budget and supply nutrients for plant production, properly use manure or organic by-products as a plant nutrient source, minimize degradation of surface and ground water resources, protect air quality by reducing nitrogen emissions (ammonia and NOx compounds) and the formation of atmospheric particulates, and maintain or improve the physical, chemical and biological condition of the soil."** and

"7. **Regional Water Boards shall require the following in waste discharge and water reclamation requirements for recycled water irrigation projects:**
(a) the development and implementation of a nutrient management plan;"

Comment: Stanford supports the SWRCB staff's recommendation not to impose statewide recycled water nitrate limitations. However, the requirement for nutrient management plans for all recycled water irrigation is tremendously onerous. We suggest that nutrient management plans be required only for large-scale irrigation systems such as golf courses and crops for which nutrient management is typically performed, and not for landscape irrigation such as in residential, commercial, light industrial, and

institutional areas where nutrient management is typically non-existent. This approach would accomplish the objective of protecting water quality where the heaviest use of recycled water occurs, while encouraging recycled water for landscape irrigation without onerous and costly nutrient removal or management requirements.

We also request further clarification on the definition of the "nutrient management plan" and the criteria for its development, as stated in the staff report. Would the recycled water retailer be responsible for implementing those plans, or would the recycled water user either voluntarily or be required to comply with this plan? Typically, Stanford University does not monitor the nutrient content of soils at landscape irrigation sites within the University, or whether those concentrations are uniform throughout the site. Requiring the retailer to regulate fertilizer use on a daily basis for all of its recycled water users is not feasible. Requiring separate nitrate effluent limitations for all recycled water supplies could also prove to be costly to implement.

For the major large-scale recycled water users required to prepare a nutrient management plan, a potential approach would be to have the retailer sample the soil at one location at each recycled water use site that best represents the landscape to be irrigated. This soil survey would be performed prior to recycled water use. The retailer can perform this initial soil survey to determine actual nutrient content in the soil, compare it to the nutrient content in the water applied, and provide recommendations for on-site nutrient management in the "nutrient management plan." User education about the importance of nutrient management can also be included during site supervisor training. However, we recommend that the recycled water user determine compliance with the nutrient management plan in their annual self monitoring report. If necessary, any follow up soil surveys would be performed on an as-needed basis by the recycled water user.

"4. For the purpose of this Policy, "recycled water" has the same meaning as in Water Code section 13050(n)."

Comment: We strongly recommend that recycled water be as defined by Title 22 rather than 13050(n), that this policy be applicable to only recycled water generated from domestic wastewater, and not for recycled water generated from industrial process wastewater. For example, recycled water generated by the Stanford University Central Energy Facility Recycled Water Treatment Plant is not regulated by Title 22, because this water does not originate from a domestic wastewater source. Stanford would like to confirm that this policy would only apply to the recycled water projects originating from a domestic wastewater source that are regulated by Title 22, and not by those projects for which Title 22 does not apply.

"7. Regional Water Boards shall require the following in waste discharge and water reclamation requirements for recycled water irrigation projects:

(d) The monthly average TDS concentration in the recycled water to not exceed the monthly average TDS concentration of the source water supply, plus 300 mg/l. The monthly average TDS concentration of the source water supply shall be the flow-weighted monthly average TDS concentration of the public water supply of the service area that generates sewage from which the recycled water is produced."

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Comment: We agree with staff that a uniform TDS limitation is not feasible statewide. We also agree that groundwater monitoring wells around each irrigation site are not desirable. Establishing groundwater basin wide criteria would significantly delay any resolution of this issue. Recycled water retailers typically have few feasible control measures to regulate the current on-site uses of potable water, or whether that use increases the TDS of the sewage generated. This limitation is also biased against those retailers with a higher percentage of industrial users that evaporate a lot of water (e.g. cooling towers).

The primary potable water source for Stanford University originates from Hetch Hetchy, which has a low TDS. Stanford's domestic sewage is estimated to have a TDS of approximately 470 mg/l, or 360 mg/l greater than the Hetch Hetchy source. The 470 mg/l TDS currently complies with the water quality objectives, but would not comply with the draft Water Recycling Policy. Essentially, this policy would require demineralization of recycled water at Stanford to comply with this limitation. This could make any recycled water project using Stanford's domestic sewage as the source infeasible.

We recommend having options for recycled water retailers to comply with. For example, the TDS limitation could be set to either require a maximum TDS concentration in the recycled water or a maximum elevation of TDS concentration from the flow-weighted potable water source.

The University would also like clarification on the monitoring and implementation requirements to determine the monthly average TDS concentrations in the potable water source. Which entity (potable or recycled water retailer) would be required to monitor and provide data about the potable water source(s) and flows?

We thank you for the opportunity to comment on this important policy. Should you have any questions about our comments, or desire to receive any additional information, please contact me at (650) 725-3400 or twz@stanford.edu.

Sincerely,

Tom W. Zigterman

Tom W. Zigterman, P.E.
Associate Director of Utilities