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Date: January 10, 2011

Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 "I" Street
Sacramento, CA 95814

Via email to commentletters@waterboards.ca.gov

SUBJECT: Comment Letter – CEC Monitoring for Recycled Water (SRCSD Comments)

Dear Ms Townsend:

Thank you for the opportunity to review and provide comment on the subject document. The following comments are being provided by the Sacramento Regional County Sanitation District (SRCSD) related to the November 8, 2010 document titled Staff Report Constituents of Emerging Concern (CEC) Monitoring for Recycled Water (Staff Report). SRCSD provides recycled water for landscape irrigation in south Sacramento County and complies with the requirements of the State's policies and NPDES permit requirements related to recycled water use. SRCSD is generally supportive of the recommendations made by the Science Advisory Panel convened by the State Water Resources Control Board in their Final Report dated June 25, 2010.

Comment #1

The Staff Report is unclear as to the testing requirements for CECs in recycled water used for landscape irrigation projects. CECs are clearly excluded from monitoring in the statement that "*Monitoring for health-based CECs and performance-based indicator CECs is not recommended for landscape irrigation projects, because of the low water ingestion rate with landscape irrigation use.*" The report should either clearly require this testing and describe the particular surrogates to be tested or delete the general language that references this testing such as the following sections:

- Page 3 Paragraph 4 in its entirety should be clarified as to whether or not it applies to landscape irrigation projects. This paragraph contains several vague statements such as "Table 2 presents a list of recommended surrogate parameters and constituents and their expected removal percentage for groundwater recharge/reuse and landscape irrigation. Where applicable, surrogate parameters may be monitored…" Yet Table 2 has no values for expected removal differential for all three Landscape Irrigation Surrogate Parameters and Constituents.

Comment #1 *(continued)*
The lack of clarity as to the expectations for testing recycled water that is used for landscape irrigation purposes could lead to differing, inconclusive and and expensive testing requirements imposed by local regional water boards that may include potential capital improvement projects required to install sample taps and instrumentation.

Comment #2
Page 6 of the report under the heading Application of Performance-Based Indicator CECs and Surrogates states that "Surrogate parameters and constituents should be measured for each unit process during the initial assessment monitoring phase. Surrogate parameters and constituents that demonstrate measurable removal percentages for a given unit process should be selected for use in the monitoring programs for baseline (footnote 10) and standard operations." And footnote 10 states "Baseline operation is considered to represent the first three years of operation following initial assessment."

The report should consider and make recommendations for methods to accomplished or disregard baseline comparisons for recycled water treatment facilities that have been operational for several years. This also applies to the section titled "*Monitoring Frequency for Initial Assessment and Baseline Operations*" on page 5.

Comment #3
The section titled *Monitoring Frequency for Initial Assessment and Baseline Operations* on page 5 recommends testing on quarterly daily or weekly basis. A testing basis with this amount of frequency would be costly and would not likely yield results valuable to CECs on an equal scale. It is recommended that these test frequencies be reduced to quarterly or annually for both CECs and surrogate parameters.

Comment #4
Page 8 of the Staff Report states, related to the CDPH recommendations, "Staff recommends monitoring for these additional CECs in recycled water for these facilities." The scientific basis for CEC monitoring recommended by the CDPH is not clear and justification for monitoring these chemicals and constituents are needed in order to evaluate the recommendation. In contrast there is a clear scientific process for the SWRCB staff recommendations in following the Panel Report recommendations.

SRCSD recommends that any recommendations from agencies outside agencies be referred back to the Science Advisory Panel or other similar convened panel for appropriate review and recommendation prior to inclusion in a staff report as a formal recommendation for monitoring.

Comment #5
On page 4 below the heading Monitoring Locations / Points of Monitoring, the Staff Report recommends CEC monitoring between specific process treatment steps (i.e., between tertiary and membrane treatment in reverse osmosis processes). These specific data seem more associated with a research project than a monitoring program to assess environmental concentrations where human

health may be at risk. A large database may be developed, but without a plan to assess these data, adequate data quality assurance/quality control, or defined DQOs. Otherwise these data may not prove useful and their collection could be a waste of resources.

SRCSD suggests that it may be preferable to identify representative treatment facilities to evaluate CEC removal as special studies, rather than as monitoring. Alternatively, regular CEC monitoring could occur at the point of interest for regulatory compliance (i.e., only in the final discharge and receiving environment) and research into removal efficiencies could be conducted as special investigations when triggers are exceeded.

Comment #6
The surrogates parameters and constituents listed in Table 2 are considered indicators of chlorination and their monitoring is to evaluate the effectiveness of wastewater treatment. However, these parameters would not be appropriate when non-chlorine disinfection methods (i.e., UV) are used. Please clarify how monitoring would apply to non-chlorine disinfection methods. In addition, the Staff Report should describe what CECs are served or indicated by each surrogate.

Comment #7
The Final Report titled *Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water* dated June 25, 2010 Page 6 paragraph 3 states "The selection of the appropriate performance indicator CECs and surrogates will be dependent on project specifics including feed water quality and the type of unit treatment processes." Both the above report and the Staff Report indicate in several sections that there is still much information that is unknown regarding CECs in recycled water.

CECs selected for monitoring should have well established and readily available methods with detection limits adequate to meet the desired Poicy goals. Otherwise the quality and usefulness of any collected data will be jeopardized. This is indicated in the CEC Expert Panel report to ensure "*that a commercially-available robust analytical method is available for that compound.*"

The lack of a standard chemical methods/reporting limit requirements may result in inconsistencies among discharger monitoring data and could compromise the usefulness of any monitoring data, as well as causing inconsistent application of any regulation. As recognized in the Panel Report "*Many CECs are potentially present in recycled water, but the detection of many of these chemicals is so recent that robust methods for their quantification and toxicological data for interpreting potential human or ecosystem health effects are unavailable.*" The text also states that methods for CEC analysis in recycled water samples "*should be selected to achieve the recommended method reporting limits listed in Table 1. Where a recommended method reporting limit may not be identified or achievable using currently available methodologies, an analytical method with a method reporting limit that is closest to the recommended method reporting limit with proven reliability should be selected. These analytical methods should be CDPH-approved.*"

These statements present several problems for recycled water producers in attempting to comply with requirements that result from this Staff Report. The lack of consistent and commercially available analytical methods for CECs among labs may make it difficult and potentially costly for dischargers to comply with monitoring requirements and to obtain valid test results. The monitoring and

reporting requirements may not be consistent between dischargers, so the data that is obtained may not be useful to further the progress in understanding CECs and their impacts.

Reporting limits and monitoring trigger levels are not provided for many of the CECs listed in the Staff Report. Therefore, each recycled water treatment facility will need to seek CDPH approval for analytical methods. These monitoring data may not be comparable among facilities in the absence of a standard analytical method or consistent requirements.

In general it is an inefficient use of resources to conduct a monitoring program before the monitoring tools are established. For constituents or surrogates recommended or required for monitoring, SRCSD recommends that state staff should verify that all of the following exist for monitored parameters

- a science based understanding of the toxicology of the CEC and its impact to its environment,
- a clear derivation of the benchmark for which the toxicological information is based upon,
- agreement on any uncertainty factors and a limited number of uncertainty factors
- an agreed level of protectiveness and assumptions, and
- consistent sampling and testing methods and procedures that have been established for the constituent being monitored.

Comment #8
Influent should be listed as a consistent sampling location for monitoring CECs in the Monitoring Locations/Points of Monitoring section if determining removal differentials is required, as stated in the Application of Performance-Based Indicator CECs and Surrogates. Specific sampling locations in the treatment process are not well stated in the Monitoring Locations/Points of Monitoring section of the Staff Report. More specifically, it is inconsistent with the goal of evaluating the effectiveness of wastewater treatment processes in removing CECs if influent is not specified as a required monitoring station. However, if there is no risk to human health from CECs in recycled water, then there is no need to expend resources measuring their removal efficiencies in wastewater treatment.

Comment #9 – General Comment
The specific goals of this Policy are not clearly stated. While there is a general understanding that CECs are a potential concern for human health and the environment, and that monitoring will provide information to better understand these risks, the specific questions the data will be used to address or the rationale for data collection is not clearly stated. For example, data are to be collected for evaluating the CEC removal efficiency at water recycling facilities; however, the rationale for this objective - possibly to identify treatment inefficiencies – is not linked to potential human health risks. Likewise, it is not known if the data collected will be of sufficient quality to adequately answer questions that may be asked. A more specific definition of the Policy goals is needed to understand what data is necessary and how it should be collected. An initial effort to develop specific data quality objectives (DQOs) may be prudent prior to initiating a comprehensive monitoring program.

Comment #10 – General Comment
The effort required by each recycled water discharger to develop and implement a CEC response work plan could be substantial. As part of the Evaluation and Response to Monitoring Results section on page 7, it is stated that the recycled water/recharge agency should develop a response plan with specific actions to be implemented in response to monitoring results. For example, if CEC

concentrations exceed the recommend tiered thresholds (i.e., MEC/MTL > 100) then a source identification program would be implemented. The recycled water/recharge agencies would work with the CDPH and the Regional Water Boards to identify the need for increased monitoring to confirm the presence of problematic CEC(s), source identification studies, and toxicological studies. This requirement seems similar to a toxicity reduction evaluation (TRE) work plan where sources are identified and the CEC of concern is reduced or eliminated, possibly through source control, changes to plant operations, or engineering solutions. As such, it would be a considerable effort and a burden on the discharger to identify whether there is a potential for risk to human health from CECs when there is very little scientific data available for many of these parameters. Moreover, the SWRCB Staff Report would place the burden on the discharger while not recommending the supporting of this science through the SWRCB. The rationale given in the Staff Report for not recommending support of chemical method development/validation and toxicity data development is that this research is a slow processes and that there are too many chemicals (>80,000 + 1,000 new each year). However, there are a limited number of CECs recommended for monitoring and funding research would only be for those CECs. Note also that it is premature to treat CECs in recycled water with a TRE approach.

In general, SRCSD supports the comments made on the Staff Report that were submitted by CVCWA, ACWA, CASA and WateReuse California.

Thank you for the opportunity to comment on the subject Staff Report. If you have questions or comments regarding any of the items above, please contact me at (916) 876-6068 or VoightL@sacsewer.com.

Sincerely,

Lysa Voight

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