



July 7, 2005

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Ms. Dena McCann  
Division of Water Quality  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814

**Re: Comments on the Proposed Total Residual Chlorine and Chlorine-Produced Oxidants Policy of California**

**Board of Directors**  
Representing:

County of Sacramento  
County of Yolo  
City of Citrus Heights  
City of Elk Grove  
City of Folsom  
City of Rancho Cordova  
City of Sacramento  
City of West Sacramento

Dear Ms. McCann:

The Sacramento Regional County Sanitation District (SRCSD) is pleased to provide comments on the State Water Resources Control Board's (SWRCB) Proposed Total Residual Chlorine (TRC) and Chlorine-Produced Oxidants Policy of California (TRC Policy) dated April 2005, and the Informational Document for the Public Scoping Meeting for the Proposed TRC and CPO Policy of California (Scoping Document) dated May 2005. By way of some background, SRCSD provides sanitary sewer conveyance, treatment and reclamation to over one million residents and thousands of commercial and industrial businesses in the greater Sacramento area. On average, over 165 million gallons of wastewater are conveyed, treated and safely discharged each day.

It is our understanding that the SWRCB has requested that comments be limited to identifying the range of actions, alternatives, mitigation measures and potential significant effects to be analyzed in depth in the draft Functional Equivalent Document (FED). Based on our review of the above referenced documents, SRCSD has the following comments, which are focused on the freshwater TRC criteria in the proposed policy.

**General Comment**

An overall comment is that the TRC Policy should incorporate some of the details and intent language found in the Scoping Document to assist permit writers and dischargers understand the Policy's requirements. In addition, SRCSD recommends that the FED provide an analysis that demonstrates:

- Chlorine toxicity is a statewide problem in receiving waters;
- The reason why current policies and practices of Regional Boards are insufficient;
- The necessity to devote statewide resources to address total residual chlorine effluent limits; and
- Why statewide effluent limits for TRC are appropriate, given the diversity in discharges and receiving water characteristics (which are typically addressed at a regional level).

Robert F. Shanks  
District Engineer  
Marcia Maurer  
Chief Financial Officer  
Wendell H. Kido  
District Manager  
Mary K. Snyder  
Collection Systems Manager  
Stan R. Dean  
Plant Manager

## **Effluent Limits**

### ***Applicability of EPA Criteria***

In 1984, the United States Environmental Protection Agency (USEPA) adopted the water quality criteria guidance, Ambient Water Quality Criteria for Chlorine – (AWAC-C), for freshwater and saltwater life protection. USEPA's recommended criteria are 0.011 milligrams per liter (mg/L) for a 4-day average and 0.019 mg/L for a 1-hour average TRC in freshwater. However, according to the AWAC-C, the criteria are "intended to apply to situations of continuous exposure, whether the concentrations are fluctuating or constant, but not to situations of specially controlled intermittent exposures..." As a result, SRCSD believes it is inappropriate to apply these criteria to discharges that are short and discreet, and usually only amount to a few minutes at a time. Furthermore, the guidelines and data utilized to derive these criteria are over 18 years old. USEPA has even indicated that revisions to these guidelines are necessary. In fact, a proposal to update the "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses" was published by the USEPA in February 2003. The proposal stated, "...the past 17 years have witnessed substantial scientific advancement in aquatic toxicology, aquatic biology, fate, transport, and effects modeling and ecological risk assessment. Such advancements, coupled with increasing complexity of water quality impairment issues require criteria derivation approaches beyond the existing Guidelines methods."

Based on our comments above, SRCSD recommends that the FED include an analysis of alternatives to the application of the AWAC-C criteria. Specifically, the FED should include:

- An analysis of the alternative of waiting until the criteria are revised based on updated Guidelines released by USEPA.
- An evaluation of the appropriateness of applying these criteria to intermittent exposures, that is short and discreet.

### ***Averaging Periods***

Both the TRC Policy and Scoping Document acknowledge the fact that NPDES permit regulations require permit limits for POTWs be expressed, unless impractical, as average weekly and average monthly. The SWRCB contends that because chlorine residual can be acutely toxic within minutes of exposure to fish and other aquatic life, weekly and monthly limits are not protective and therefore, impractical. However, as discussed in the previous section, the proposed policy is overly protective by applying limits intended for use under continuous exposure. SRCSD recommends that the FED include:

- An analysis as to why the current regulations (23 CCR Section 2235.2) that requires weekly and monthly averages are impracticable for protection of aquatic life beneficial uses.

### ***Mixing Zones***

The Scoping Document recognizes that mixing zones are authorized under the Clean Water Act if a state's water quality standards or implementation procedures allow for them. Four of the nine Regional

Boards have mixing zone provisions in their basin plans. In these regions, chlorine limits can be calculated taking into account dilution, if appropriate. However, the staff recommendation in the Scoping Document is to prohibit mixing zones, making chlorine residual objectives applicable at end-of-pipe. SRCSD recommends that the FED include:

- An analysis as to what environmental effect would result if mixing zones were permitted on a site-specific basis. For some dischargers in the state, allowing a mixing zone would still be protective of aquatic life and beneficial uses.

### **Local/Regional Issue Versus Statewide Consistency**

While SRCSD commends the SWRCB efforts to provide consistency throughout the state on certain issues, we believe that TRC is a local/regional issue that is very dependent on the receiving water. As written, the TRC Policy provides a single set of effluent limits at the end-of-pipe for TRC and CPO for each individual discharger throughout the state. In fact, the TRC Policy specifically states “the Policy supercedes any and all numeric TRC and CPO Objectives...”. Establishing a statewide effluent limit for TRC and CPO is inappropriate considering all of the different scenarios that exist in terms of discharges and receiving waters.

It appears that the SWRCB recognizes the variability in potential impacts to receiving waters by acknowledging in the TRC Policy that, “Some water bodies within the State may have assimilative capacity to consume a minute amount of chlorine residual instantaneously. Other water bodies may be able to naturally expend a small amount of chlorine without impairing water quality or harming aquatic life.” However, as currently drafted, the TRC Policy does not provide any flexibility to consider these factors and allow the Regional Boards the ability to establish discharger specific effluent limits that are higher than the limits proposed. For instance, although the TRC Policy does provide for Site Specific Objectives (SSO), as determined appropriate by the Regional Board; it is unclear whether a Regional Board could even grant a SSO that contained higher effluent limits without triggering USEPA’s antidegradation policy. Confusing this issue even more is the contradictory statement in the scoping document that indicates that the chlorine residual objectives must be met at end-of-pipe, with no consideration being provided for mixing zones.

SRCSD recommends the FED and TRC Policy address the following points to provide additional clarity on the SSO issue:

- The need for flexibility to establish different chlorine objectives and effluent limits and how this could be accomplished by Regional Boards and dischargers,
- The factors that can be considered when implementing SSOs (e.g., mixing zones, averaging periods, compliance schedules, etc.),
- The procedures that a discharger would have to go through to receive a SSO and if the Regional Board would have to consider their request, and
- Defining what other endorsements would be necessary prior to the SSO taking effect (e.g., SWRCB, USEPA, CDFG, etc.).

### **Continuous Monitoring**

The current definition in the TRC Policy states continuous monitoring is defined as one data point or more every minute. As written, the wording “or more” could lead to inconsistent monitoring requirements throughout the state as each permit writer could interpret this to mean a different time interval. SRCSD recommends the wording “or more” be removed from the definition and monitoring be required on per minute basis.

### **Instrumentation/Equipment/Detection Limits**

The TRC Policy lists the detection limit of 1 part per billion (ppb) for online analyzers. Finding an online TRC analyzer that reliably and accurately reads with 1 ppb accuracy in the wastewater environment is problematic (in spite of manufacturers stated detection limits). The TRC Policy also states all calibration and off-line sampling should be evaluated by Standard Method 4500-Cl E. The stated detection limit for this method is 10 ppb; but it is unclear if this detection level could be achieved in the field while calibrating the online analyzers.

In the event an online analyzer indicates chlorine is present, there should be a method to confirm the presence of TRC. Confirmation could be online monitoring for the dechlorination agent concentration or by collecting grab samples. However, as noted above, it would be difficult to confirm the presence of TRC with grab samples because of the variation in the detection limits. SRCSD recommends establishing a method to confirm the presence of TRC and include this method in the TRC Policy.

The calibration process as defined in the TRC Policy is problematic. There is no way to determine if the analyzer is accurate to levels mandated in the policy (i.e. 1 ppb) for reasons stated above.

### **Rolling vs. Discreet Averaging Periods**

The TRC Policy needs to address what type of averaging period will be required. Currently, the term “average” is only discussed in the Scoping Document that states, “The term ‘average’ can be considered a rolling average or a discrete average when calculating a one-hour or four-day average. Either a rolling or discrete value can be allowed, if monitoring equipment is set up that way.”

Assuming a TRC analyzer is read every minute, a discharger would be in violation of the one-hour TRC objective of 0.019 mg/L if there were a one-minute discharge of TRC at a concentration of 1.15 mg/L. If compliance were determined by a discreet hourly averaging period, the discharger would receive one violation. However, if compliance were determined by a rolling hourly averaging period, the discharger would receive sixty violations for the same excursion.

SRCSD believes that the outcome of rolling averages (multiple violations for one small excursion), is excessive and not the intent of the TRC Policy. SRCSD recommends the TRC Policy be amended to include a discussion of the averaging period within the policy, and that averaging period be defined as a “discreet averaging period” for both the one-hour and four-day TRC objectives.

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### **Compliance Schedule**

The TRC Policy mandates a compliance schedule not to exceed two years from the date that a permit is issued, reissued, or modified. The policy states "A two-year time frame seems reasonable for acquiring the necessary continuous monitoring equipment, train personnel with its use, and to begin necessary protocols to comply with the chlorine effluent limits." Many dischargers throughout the state will have problems complying with these new TRC and CPO effluent limits. If a discharger needs to consider new treatment processes and obtain the necessary funds to undertake capital improvement projects to meet these limits, a two-year schedule for implementation will not be adequate. When determining an appropriate compliance schedule, the SWRCB should not only consider the cost to comply, but also how long it will take for a discharger to implement capital improvements in order to comply with a new limit; not just how long it will take to install monitoring equipment that shows a discharger is in violation. This evaluation should be included in the FED.

### **Economic Analysis**

The Scoping Document states "The State Water Board is required to consider the economic impacts of water quality planning decisions under certain circumstances. When the State Board adopts or revises a water quality objective, it must consider several factors, including economics, under CWC Section 13241."

The SRCSD cannot emphasize enough the importance of the economic evaluation. The evaluation needs to be a comprehensive analysis of the effects the TRC Policy will have on a statewide basis. A good reference to performing a thorough economic analysis is *A Guide to Consideration of Economics Under the California Porter-Cologne Act (Final Draft)*, prepared by David Sunding and David Zilberman, dated February 7, 2005.

In closing, SRCSD appreciates the opportunity to review and comment on the Proposed TRC Policy and Scoping Document and hope you find our comments helpful. We look forward to working with you as the FED is developed so that an environmentally sound and economically achievable statewide policy can be adopted.

Sincerely,

A handwritten signature in black ink that reads "Wendell Kido". The signature is written in a cursive, flowing style.

Wendell Kido  
District Manager

cc: R. Shanks, S. Dean, T. Mitchell, P. Somavarapu, M. Mulkerin, M. Maidrand, R. Seyfried, S. Nebozuk