SAN FRANCISCO PUBLIC UTILITIES COMMISSION

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July 7, 2005

*Via Electronic Mail*

Ms. Dena McCann
Division of Water Quality
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814
dmccann@waterboards.ca.gov

Dear Ms. McCann:

**Subject: Comments on the Proposed Total Residual Chlorine and Chlorine-Produced Oxidants Policy of California - Draft Functional Equivalent Document SWRCB Public Scoping Meeting July 7, 2005**

The City and County of San Francisco Public Utilities Commission (San Francisco PUC) appreciates the opportunity to comment on the proposed State Water Resources Control Board (State Water Board) Total Residual Chlorine and Chlorine-Produced Oxidants Policy of California. The San Francisco PUC owns and operates both wastewater and drinking water treatment facilities that utilize chlorine disinfection to comply with public health protection criteria. Existing NPDES permits also require the use of de-chlorinating chemicals to remove chlorine prior to discharging or releasing treated waters to receiving waters. The San Francisco PUC appreciates the State Water Board's efforts to address chlorinated water discharges that can directly or through the production of chlorinated byproducts be toxic to various life stages of organisms in receiving waters. We offer the following comments on the proposed water quality objectives and implementation issues raised in the draft policy and informational documents that require further analysis in the FED.

**Basis of standard**

The San Francisco PUC is concerned that the data used to derive the 1984 EPA Water Quality Criteria Document for chlorine as a basis for the proposed water quality objectives may be outdated, and relying on such data may not be appropriate. We recommend that the FED include a detailed analysis of the quality of these data and an investigation of more recent research conducted over the last 20 years on California site specific and species specific sensitivity to chlorine toxicity. National criteria that rely on tests conducted with a small number of species may be inappropriate for application to waters in California.

**Receiving Water Quality and Assimilative Capacities**

Although the draft policy allows Regional Water Boards to consider site specific objectives (SSO), the FED should evaluate the benefit of determining and incorporating categories of objectives that address water type and use conditions. This would alleviate significant resource limitations experienced by Regional Water Board staff in the consideration of SSOs.

Every water body has the capacity to assimilate some residual chlorine and impacts are dependent on receiving water properties including suspended and organic material. The FED should also include an analysis of incorporating mixing zones as allowed in the State Implementation and the Ocean Plans. The use of mixing zones will provide statewide consistency in calculating total residual chlorine effluent limits between ocean and non-ocean non-storm water NPDES permit holders.

**Instrument Sensitivity and Reliability**

The draft policy requires that continuous measurements be taken at least once per minute necessitating the use of on-line instrumentation capable of a manufacturer's stated detection limit of 1 part per billion. We are concerned that the sensitivity required to comply with the proposed water quality objectives cannot be routinely demonstrated by manufacturers of chlorine residual analyzers. The State Water Board should consider conducting a study to determine actual detection limits of chlorine residual analyzers tested under various treated water matrices. Instrument sensitivity cannot rely simply on a manufacturer's specifications. The FED should include an analysis of actual on-line continuous chlorine residual analyzers in various water and wastewater matrices to evaluate achievable detection limits.

Water and wastewater treatment plant operations respond to a variety of changing conditions including, flow rate changes, opened or closed valves or gates, and the number of pumps in operation. Chemical usage also changes with those conditions. Some water treatment facilities, recently permitted in 2004, operate intermittently and experience rapid flow rate changes, which can affect analyzer accuracy. Even highly sensitive and responsive instruments will need a period of time to equilibrate before accurate measurements can be made. The response time to changing conditions may result in excursions from the water quality objectives that are of short duration, of low concentration and not likely to have impacts to the receiving waters. This may be especially true of wastewater discharges, which inherently have a high chlorine demand, such that even small excursions are likely depleted within the discharge pipe before reaching receiving waters. The FED should include an evaluation of alternative compliance determination strategies that address short term excursions that are unlikely to have water quality impacts. Such alternative strategies could determine compliance with water quality objectives with conditional allowances of maximum cumulative time excursions and maximum concentration excursions.

We are also concerned that the policy does not recognize the probability that false positive readings associated even with well cared for and calibrated monitors are possible. The FED should incorporate language that allows dischargers to continuously measure flows, and chlorine and dechlorinating chemical dosages in order to prove false positives. For example, any positive residual chlorine reading associated with a flow that has received more than an adequate amount of dechlorinating agent should not be reported for compliance purposes. Stoichiometric calculations should prevail over instrumental inaccuracies.

**Back-up Systems**

The need for a back-up system to measure compliance when continuous monitoring systems are off-line for calibration and maintenance is justified. However, the requirement that grab samples as a back-up alternative include both effluent and receiving water sampling at 30 minute intervals is unreasonable and not necessary. End of pipe compliance can be determined directly from the effluent sample. Receiving water sampling should only be recommended if a mixing zone were allowed for compliance determination.

**Continuous Monitoring**

The policy states that "Continuous monitoring is defined as one or more data points, every minute". The definition of terms for "One-hour Average" should include the use of all data points measured in a one-hour interval and should not be limited to 60 data points as currently defined. For those discharges that are intermittent in nature, every minute of non-discharge should be measured as zero in determining compliance.

**Compliance schedule**

A compliance schedule of two years is proposed to implement the new policy. This appears reasonable if only new instrumentation is being installed and tested to measure the final residual. If substantial capital improvements are required this time frame may be inadequate.

Thank you for your consideration of these comments. If you have any questions, please contact Jim Salerno (650.652.3125) or Arleen Navarret (415.934.5731).

Very truly yours,

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