

April 16, 1999

To: Board of Directors (Engineering and Operations Committee—Information)

From: General Manager _____

Submitted by: Mark D. Beuhler
Director of Water Quality _____

Subject: Disinfectants and Disinfection By-Products Regulations Update

RECOMMENDATION

For information only.

EXECUTIVE SUMMARY

The Safe Drinking Water Act Amendments of 1996 directed the U.S. Environmental Protection Agency to set regulations which protect against microbial pathogens (e.g., *Giardia* and *Cryptosporidium*) while simultaneously decreasing the occurrence of disinfection by-products (e.g., trihalomethanes). The first stage (Stage 1) of rules (the Disinfectants/Disinfection By-Products Rule and the Interim Enhanced Surface Water Treatment Rule) was finalized in December 1998. A second stage of these rules will be promulgated by May 2002. Metropolitan and our member agencies will closely follow the second series of regulatory negotiations—Reg. Neg. 2—which began in March 1999. Reg. Neg. 2 may have a greater impact on Metropolitan's treatment processes, particularly in the absence of improvements in quality of water derived from the Sacramento/San Joaquin Bay/Delta.

DETAILED REPORT

Regulatory Background

The Safe Drinking Water Act Amendments of 1996 directed the U.S. Environmental Protection Agency to set regulations which protect against microbial pathogens while simultaneously decreasing the occurrence of disinfection by-products. The first stage (Stage 1) of rules (the Disinfectants/Disinfection By-Products Rule and the Interim Enhanced Surface Water Treatment Rule) was finalized in December 1998. A second stage of these rules will be promulgated by May 2002. Figure 1 shows the major milestones of the regulatory schedule.

Stage 1 Rules

The Stage 1 rules were developed to ensure that microbial risk does not increase as a result of reducing the levels of disinfection by-products. The rules—which apply to Metropolitan as well

as its member agencies—include maximum contaminant levels, a treatment requirement to remove disinfection by-product precursors, and tightened turbidity performance criteria (which is an indirect measure of the physical removal of pathogens). The maximum contaminant level for trihalomethanes will be reduced from the current maximum contaminant level of 100 micrograms per liter to 80 micrograms per liter, and new maximum contaminant levels were set for haloacetic acids at 60 micrograms per liter and bromate at 10 micrograms per liter. Compliance with the maximum contaminant levels will be required by December 2001; however, utilities were granted additional time to install capital facilities to meet the treatment requirements.

Because State Project Water produces significantly higher levels of disinfection by-products than Colorado River Water, treatment modifications are required at the Jensen and Mills treatment plants for compliance with Stage 1 rules. For Metropolitan, the most cost-effective compliance strategy is to switch the primary disinfectant from chlorine to ozone at the Jensen and Mills plants. In addition, ozone is effective for inactivating *Cryptosporidium* and controlling taste-and-odor problems, and has the potential for meeting the proposed maximum contaminant levels in Stage 2.

Ozone facilities will be on-line at the Mills plant in 2002 and 2003 at the Jensen plant. In the interim period between December 2001 and when ozone comes on-line, disinfection by-products may need to be controlled by increasing the chemical coagulant dosages.

Stage 2 Rule

The second stage of the standard setting process formally began in March 1999 and should conclude with regulatory promulgation in May 2002. Compliance with Stage 2 would be required in 2007, assuming that the State will grant a two-year extension to complete major capital improvements. The goal of the Stage 2 rule is to improve disinfection by-products control—if needed—beyond Stage 1. As an incentive to encourage negotiations during Reg. Neg. 2, the U.S. Environmental Protection Agency established placeholder maximum contaminant levels at concentrations believed attainable by granular activated carbon adsorption (40 micrograms per liter for trihalomethanes and 30 micrograms per liter for haloacetic acids). Maximum contaminant levels for disinfection by-products that contain bromide may be of concern because the bromide levels in Metropolitan's source waters are much higher than elsewhere in the country.

Metropolitan will not directly participate as a negotiator in Reg. Neg. 2 as we did in Reg. Neg. 1. Metropolitan will, however, indirectly participate in Reg. Neg. 2 as follows. First, a member agency advisory group was formed to review and comment on the results of Reg. Neg. 2 as they develop. Second, Metropolitan staff will participate in ad-hoc technical working groups to answer specific questions that arise during the negotiations. Finally, Metropolitan and member agency participants will observe key meetings on a rotational basis to ensure that Southern California's interests are well represented, especially as they pertain to potential improvements in the Delta.

Stage 2 may require modifications—such as ozone—to Metropolitan's plants which treat primarily Colorado River Water (Weymouth, Diemer, and Skinner). Staff will continue to monitor these regulations and will report to the Board when more information becomes available.

BMC/JMB/mi

Attachment 10-12A

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FIGURE 1. Milestones for Regulatory Compliance with Stage 1 and Stage 2 Rules

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Stage 1 Rules										
Stage 1 promulgation		■								
Compliance with maximum contaminant levels					■					
Compliance with treatment technique								■		
Oxidation Retrofit Program										
Interim compliance for Mills*					■					
Mills plant on-line for MCL compliance					■					
Interim compliance for Jensen*					■	■	■			
Jensen plant on-line for MCL compliance										■
Stage 2 Rule										
Stage 2 negotiations and rule development		■	■	■	■					
Stage 2 promulgation					■					
Compliance with maximum contaminant levels and treatment technique**										■

*Disinfection by-products may need to be controlled by increasing the chemical coagulant dosages

**Including possible 2-year, State-granted, capital-improvement extension