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METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

*Karen E. Duff*  
EXECUTIVE SECRETARY

November 14, 1994

(Engineering and Operations Committee--  
Information)

To: Board of Directors (Special Committee on Water Quality and  
Environmental Compliance --Information)

From: General Manager

Subject: Metropolitan's Cryptosporidium Action Plan

### Report

Cryptosporidium is a protozoan organism that has been recently recognized as a important source of waterborne disease outbreaks in the United States. The largest occurred during the spring of 1993, in Milwaukee, Wisconsin resulting in 400,000 illnesses and approximately 100 deaths. Since that outbreak a number of specialized meetings have been conducted by agencies such as the American Water Works Association, the Centers for Disease Control and others to address issues associated with Cryptosporidium. Moreover, during the month of September 1994 the National Broadcast Corporation's (NBC) Dateline program televised a series of reports on Cryptosporidium which generated over 100 phone calls from member agencies and consumers to Metropolitan. The purpose of this letter is to provide a brief overview of Cryptosporidium and describe an action plan to address monitoring, treatment and public health concerns associated with this organism.

Cryptosporidium is acquired by consuming water or food contaminated with oocysts (the environmentally resistant stage of the organism). The illness caused by Cryptosporidium is called cryptosporidiosis and in healthy individuals may result in severe gastrointestinal distress for a period of 1 to 2 weeks. In persons with suppressed immune systems (e.g., Acquired Immune Deficiency Syndrome patients, infants, elderly, and individuals on chemotherapy) cryptosporidiosis may be life-threatening. Importantly, at the present time there is no effective medication for the treatment of this disease. Furthermore, Cryptosporidium was not recognized as a disease-causing agent until the late 1970s and methods for detection were not developed until the mid 1980s.

Metropolitan initiated a comprehensive one-year monitoring program of its source and treated waters for the presence of Cryptosporidium in 1990. The survey results indicated that Cryptosporidium levels in State project water and Colorado River water supplies were approximately one hundred to one thousand times lower than those reported in similar monitoring surveys conducted in other parts of the country (Table 1). Importantly, levels in Metropolitan's finished water indicate that the risk of waterborne

cryptosporidiosis is well below that observed in other surveys and in actual reported waterborne outbreaks (Figure 1).

There are currently no regulations concerning Cryptosporidium. However, monitoring for this organism will be required under the United States Environmental Protection Agency's (USEPA) Information Collection Rule (ICR) which is scheduled to start in the fall of 1995. Ultimately, the results of this monitoring may be used to modify the existing Surface Water Treatment Rule. This rule may require substantial treatment modifications to remove Cryptosporidium, depending upon source water levels. The USEPA is also considering the promulgation of an "emergency" Cryptosporidium rule (in recent testimony to USEPA, Metropolitan urged USEPA to consider non-regulatory approaches such as an advisory on Cryptosporidium instead of promulgating a new rule).

Metropolitan has developed a Cryptosporidium Action Plan (Plan) to respond to increasing public concern over Cryptosporidium and to address more stringent regulations regarding this organism. The Plan focuses on three main areas including: multiple barrier protection, external coordination/public outreach programs, and involvement in regulatory development (Figure 2). Multiple barrier protection will be addressed by implementing an aggressive source water protection program, ensuring optimization of treatment plant performance, and developing methods to improve detection of Cryptosporidium.

The Plan will also include external coordination and public outreach activities. Metropolitan staff will maintain contact with national and state agencies (e.g., Center for Disease Control, USEPA, and the California Department of Health Services) to keep informed of the most current information on Cryptosporidium. Metropolitan will also interact with member agencies and local health groups to facilitate regional contact with high risk groups (e.g., AIDS patients) through appropriate local and state health agencies to communicate pertinent information regarding Cryptosporidium. Metropolitan will conduct workshops and provide informational brochures to its member agencies. This effort has already been initiated by Metropolitan. A Public Communication workshop on Cryptosporidium, co-sponsored by Metropolitan, the California/Nevada Section of the American Water Works Association and the California Department of Health Services, was recently held in Sacramento, California on November 4, 1994 (see Figure 3 for meeting agenda). Further meetings are planned.

Finally, the Plan addresses staff involvement in regulations and research concerning Cryptosporidium. Metropolitan staff are currently members of state and national organizations involved in review and technical input into various Cryptosporidium related regulations and research.

Ultimately, the goal of this Plan is to develop a strategy to minimize the exposure of Metropolitan's consumers to Cryptosporidium. In addition, a mechanism for conveying information about this disease to the general public and to highly susceptible groups will

be developed. This will enable the public to make informed decisions and will protect us from criticism by groups such as the National Resources Defense Council when they publicize data collected as part of the ICR.

Recommendation

For information only.

John R. Wodraska  
General Manager

By Mark D. Beuhler  
Mark D. Beuhler  
Director of Water Quality

Concur:

  
John R. Wodraska  
General Manager

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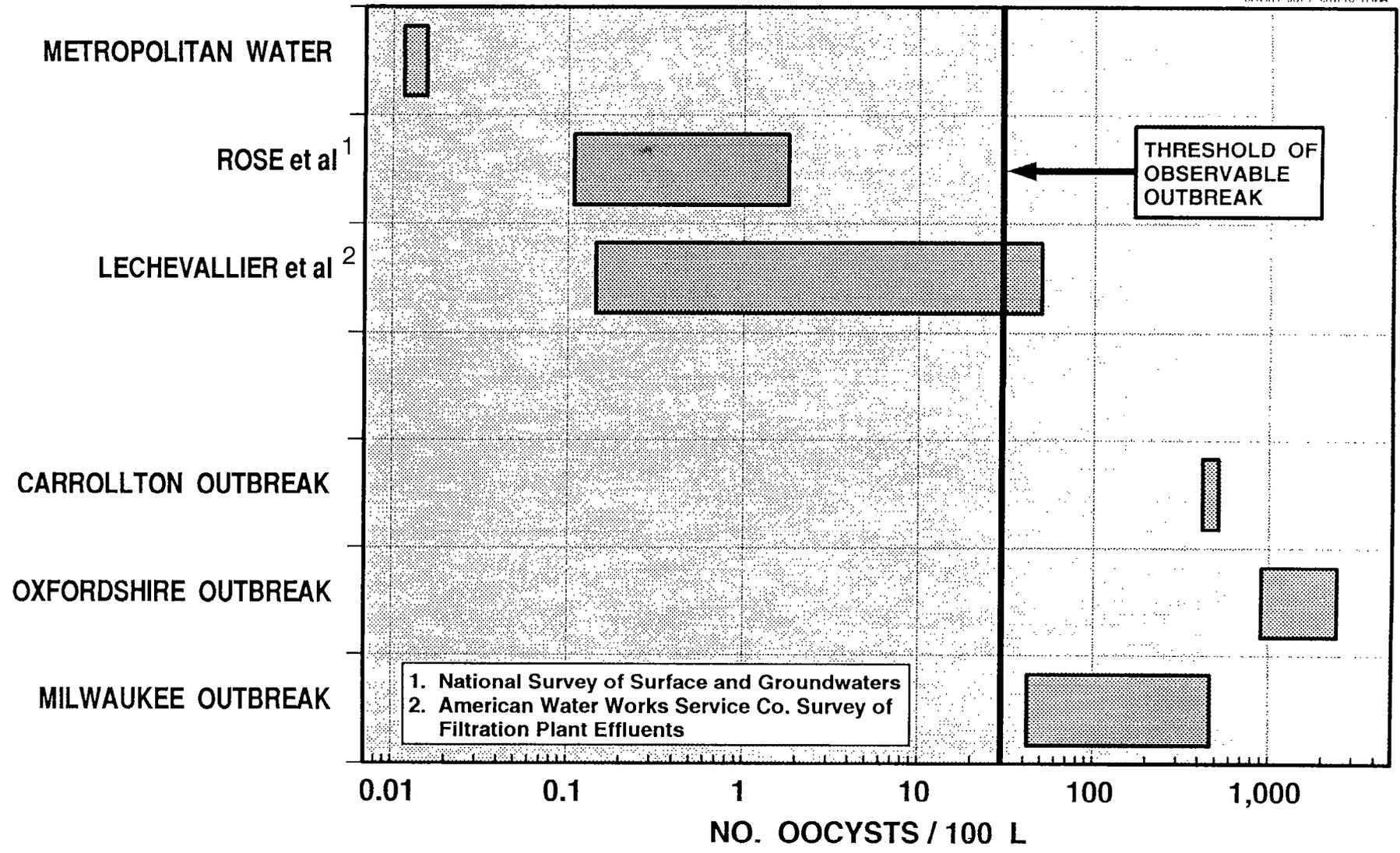
Attachments

**TABLE 1  
COMPARISON OF *CRYPTOSPORIDIUM* SURVEYS**

<b><i>SOURCE WATERS</i></b>			
	<b>MWD</b>	<b>LECHEVALLIER*</b>	<b>ROSE**</b>
<b>PERCENT POSITIVE</b>	24	87	51
<b>RANGE (OOCYSTS PER 100 L)</b>	0 - 1.8	0 - 50,000	0 - 29,000
<b>MEAN (OOCYSTS PER 100 L)</b>	0.2	270	43
<b><i>FINISHED WATERS</i></b>			
	<b>MWD</b>	<b>LECHEVALLIER*</b>	<b>ROSE**</b>
<b>PERCENT POSITIVE</b>	6	27	17
<b>RANGE (OOCYSTS PER 100 L)</b>	0 - 0.3	0 - 48	0 - 1.7
<b>MEAN (OOCYSTS PER 100 L)</b>	0.01	1.52	DATA NOT AVAILABLE

\*American Water Works Service Co. study

\*\*National Survey of Surface and Groundwaters



**FIGURE 1. COMPARATIVE DENSITIES OF *CRYPTOSPORIDIUM* IN FINISHED WATERS**

<b>OBJECTIVES</b>	<b>MULTIPLE BARRIER</b>	<b>EXTERNAL COORDINATION / OUTREACH</b>	<b>REGULATORY REVIEW</b>
<b>STRATEGIES</b>	<p><b>SOURCE WATER PROTECTION</b></p> <p><b>OPTIMIZE TREATMENT</b></p> <p><b>METHODS DEVELOPMENT / MONITORING</b></p>	<p><b>INFORMATION EXCHANGE; NATIONAL, STATE, ACADEMIC</b></p> <p><b>MEDICAL COMMUNITY, HIGH RISK GROUPS</b></p> <p><b>WATER INDUSTRY ORGANIZATIONS, MEMBER AGENCIES</b></p>	<p><b>AWWA TECHNICAL ADVISORY WORKGROUP</b></p> <p><b>USEPA ADVISORY WORKGROUPS</b></p> <p><b>CDHS TECHNICAL ADVISORY WORKGROUPS</b></p>

**FIGURE 2. CRYPTOSPORIDIUM ACTION PLAN ACTIVITIES**

Figure 3  
WORKSHOP

**PUBLIC COMMUNICATION AND APPROPRIATE RESPONSE  
TO FINDINGS OF  
CRYPTOSPORIDIUM AND OTHER PATHOGENS  
IN TREATED DRINKING WATER**

November 4, 1994  
California Chamber of Commerce  
1201 K Street  
Sacramento, California

Start Times

- 0830 Registration and coffee
- 0845 Welcome, Housekeeping, Objectives, Overview  
Chet Anderson, Calif.-Nevada Section,  
American Water Works Association
- 0900 "Cryptosporidiosis in California - A State Health  
Perspective"  
Dr. George Rutherford, Deputy Director, California  
Department of Health Services
- 0915 "Cryptosporidiosis: The Disease and Its Epidemiology"  
Dr. Dennis Juranek, U.S. Public Health Service,  
Centers For Disease Control (CDC), Atlanta
- 0945 Discussion (Q & A)
- 1000 "Cryptosporidium in Water: The Organism - Occurrence,  
Analytical Methods, Sources, Viability, Treatment"  
Professor Charles Gerba, Department of  
Microbiology and Immunology, University of  
Arizona, Tucson
- 1045 Discussion (Q & A)

(2)

- 1100 "The Drinking Water Regulatory Framework: USEPA Proposed Information Collection Rule (ICR)"  
Mic Stewart, Ph.D, Water Quality Laboratory  
Manager, Metropolitan Water District of So. Calif.,  
LaVerne
- 1115 "Report on the CDC/USEPA Workshop on Waterborne Cryptosporidiosis, Sept. 22-23, 1994"  
Dr. Dennis Juranek, CDC
- 1130 Discussion (Q & A) (All topics)
- 1200 Lunch
- 1230 Breakout Groups
- A. Elements of effective/appropriate water utility and public health agency response to the detection of Cryptosporidium oocysts or other pathogens in drinking water.  
(Facilitator: Pankaj Parekh, LADWP)
- B. Preventing Potential Waterborne transmission of Cryptosporidiosis to immunocompromised persons.  
(Facilitator: Dr. Hughes, CDHS)
- C. Building Working Relationships between the Public, Water Utilities, Health Agencies, and Others for Response to Finding Pathogens in Drinking Water.  
(Facilitator: Alexis Milea, CDHS)
- 1415 Reconvene Workshop: Breakout Groups report to full group
- 1500 Closure  
Dr. David Spath, Division of Drinking Water and Environmental Management, California Department of Health Services
- 1515 Adjourn