MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

March 12, 1993

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

From: General Manager

Subject: Potential Significant Impacts of Expected New United States Environmental Protection Agency (USEPA) Arsenic Regulation

Report

The USEPA was mandated by Congress in the 1986 Safe Drinking Water Act (SDWA) Amendments to set a new maximum contaminant level (MCL) for arsenic by 1989. The USEPA is now under a court order to propose the new MCL by September 1994.

New scientific health effects studies have recently been completed which indicate that very low levels of arsenic in drinking water may cause internal organ cancers in humans. These new studies will likely result in a much more stringent proposed MCL for arsenic.

The USEPA typically sets MCLs at levels where the risk of excess cancers in the exposed population is between one in 10,000 and one in 1,000,000. Preliminary estimates of the arsenic levels that correlate with these health risks are 0.25 parts per billion (ppb), and 0.0025 ppb, respectively (both of these levels are below current detection limits). The current arsenic MCL is 50 ppb.

Arsenic concentrations in Metropolitan's water sources range between 2 and 5 ppb. Data from Metropolitan's recently completed nationwide arsenic survey indicates that higher levels of arsenic are found in the western United States with much of the rest of the country having levels below detection limits (see the attached figure which shows nationwide arsenic levels in micrograms per liter ($\mu g/L$), which is the same as ppb). Approximately 40 percent of the samples from California utilities contained between 2 and 12 ppb arsenic. The arsenic survey demonstrates that a substantially more stringent arsenic standard may primarily be a problem for California. This suggests that it may be very difficult to build a national coalition if an unreasonable arsenic standard is proposed.

In Southern California, the Central Basin Municipal Water District recently conducted a survey for arsenic in their

active and standby well waters (roughly 200 wells). The survey showed that 63 percent of their domestic supply wells had arsenic levels greater than 2 ppb and 94 percent had levels above 0.5 ppb. The median arsenic level was 3 ppb. Programs for pumping groundwater from the Central Valley into the State Water Project could be impacted as there are elevated arsenic levels in that area. Also, arsenic will be an issue for Los Angeles' Owens Valley source.

A new arsenic MCL of 5 ppb or less could require additional treatment with enhanced coagulation using high dosages of alum or ferric chloride. Enhanced coagulation may also be required to meet a proposed new disinfection by-product regulation. More significantly, reverse osmosis (RO) could be required if the new standard is 0.5 ppb or less. RO, if required, would cost Metropolitan roughly $15 billion. Clearly, it is in Metropolitan's interest to ensure that a new arsenic regulation is reasonable and cost effective.

Metropolitan staff are developing a comprehensive Arsenic Action Plan to provide input into the regulatory process. The action plan will develop occurrence and treatment technology data so that the cost of alternative arsenic standards can be projected for input into setting the new regulation. The plan will also help prepare Metropolitan to meet the new MCL by the required deadlines.

Board Committee Assignments

This letter is referred for information to:

The Engineering and Operations Committee because of its authority to study, advise, and make recommendations with regard to the production and treatment of water pursuant to Administrative Code 2431 (c); and

The Special Committee on Water Quality and Environmental Compliance because of its authority regarding Federal and State water quality regulations pursuant to Administrative Code 2551 (a) and (b).

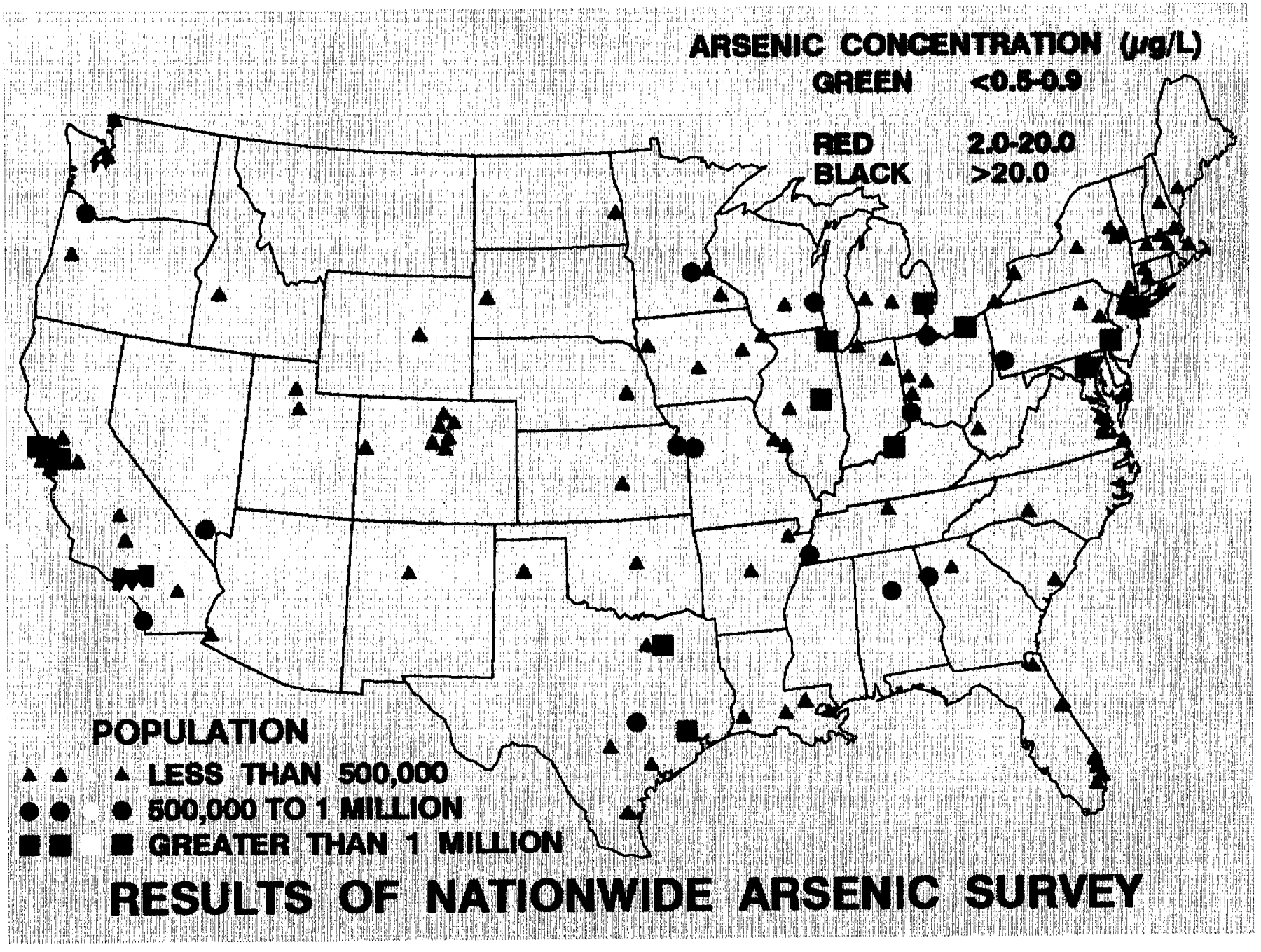
Recommendation

For information only.

for Carl Boronkay

JPD/CA/ra
BOARD/AN7

Attachments


ARSENIC CONCENTRATION (µg/L)
GREEN <0.5-0.9
RED 2.0-20.0
BLACK >20.0
POPULATION
LESS THAN 500,000
500,000 TO 1 MILLION
GREATER THAN 1 MILLION
RESULTS OF NATIONWIDE ARSENIC SURVEY