



Contra Costa Water District



TRIENNIAL REPORT ON WATER QUALITY RELATIVE TO PUBLIC HEALTH GOALS

April 2007

Prepared in Accordance with:
California Health and Safety Code, Section 116470

A graphic showing a blue water splash with a central droplet. The text "quality and experience" is overlaid in a white, serif font at the bottom of the splash.

quality and experience



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BACKGROUND

Provisions of the California Health and Safety Code (Section 116470 (b)) specify that larger (>10,000 service connections) water utilities prepare a special report by July 1, 2007, if their water quality measurements have exceeded any Public Health Goals (PHGs). PHGs are non-enforceable goals established by the California Office of Environmental Health Hazard Assessment (OEHHA). The law also requires that where OEHHA has not adopted a PHG for a constituent, the water suppliers are to use the Maximum Contaminant Level Goal (MCLG) adopted by the United States Environmental Protection Agency (USEPA). Only constituents which have a California primary drinking water standard and for which either a PHG or MCLG has been set as of December 31, 2006, are to be addressed. Appendix A presents a listing of the water quality constituents monitored by CCWD that have either a PHG or MCLG.

If a constituent was detected in CCWD's water supply between 2004 and 2006 at a level exceeding an applicable PHG or MCLG, this report provides the information required by the law. Included is the numerical public health risk associated with the MCL and the PHG or MCLG, the category or type of risk to health that could be associated with each constituent, the best treatment technology available that could be used to reduce the constituent level, and an estimate of the cost to install that treatment if it is appropriate and feasible.

WHAT ARE PHGS?

PHGs are set by OEHHA and are based solely on public health risk considerations. None of the practical risk-management factors that are considered by the USEPA or the California Department of Health Services (CDHS) in setting drinking water standards (MCLs) are considered in setting the PHGs. These factors include analytical detection capability, treatment technology available, benefits and costs. The PHGs are not enforceable and are not required to be met by any public water system. MCLGs are the federal equivalent to PHGs.

WATER QUALITY DATA CONSIDERED

All of the water quality data collected on our water system during calendar years 2004, 2005 and 2006 for purposes of determining compliance with drinking water standards were considered. These data were all summarized in our 2004, 2005, and 2006 Annual Water Quality Reports that were mailed to all of our customers.

GUIDELINES FOLLOWED

The Association of California Water Agencies (ACWA) formed a workgroup which prepared guidelines for water utilities to use in preparing these newly required reports. The ACWA guidelines were used in the preparation of our report. No guidance was available from state regulatory agencies.

BEST AVAILABLE TREATMENT TECHNOLOGY AND COST ESTIMATES

Both the USEPA and CDHS adopt what are known as Best Available Technologies (BATs) that are the best known methods of reducing contaminant levels to the MCL. Costs can be estimated for such technologies. However, since many PHGs and all MCLGs are set much lower than the MCL, it is neither always possible nor feasible to determine what treatment is needed to further reduce a constituent downward to or near the PHG or MCLG, many of which are set at zero. Estimating the costs to reduce a constituent to zero is difficult, if not impossible because it is not

possible to verify by analytical means that the level has been lowered to zero. In some cases, installing treatment to try and further reduce very low levels of one constituent may have adverse effects on other aspects of water quality.

CONSTITUENTS DETECTED THAT EXCEED A PHG OR MCLG

The following is a discussion of constituents that were detected in one or more of our drinking water sources at levels above the PHG, or if no PHG, above the MCLG.

Coliform Bacteria

During calendar years 2004 through 2006, CCWD was required to collect a minimum of 120 samples per month to meet the monitoring requirements of the Total Coliform Rule. The average number of samples typically collected per month is approximately 160. Occasionally, a sample was found to be positive for coliform bacteria but check samples were negative and follow up actions were taken. A summary of coliform positives is indicated in Table 1.

Table 1: Summary of Coliform Positives

| Month | Number of Samples Collected | Number of Coliform Positives | Percent Positives |
|---------------|-----------------------------|------------------------------|-------------------|
| May 2004 | 160 | 3 | 1.88% |
| June 2004 | 157 | 1 | 0.64% |
| November 2004 | 172 | 1 | 0.58% |
| May 2005 | 159 | 1 | 0.63% |
| July 2005 | 161 | 4 | 2.48% |
| June 2006 | 171 | 1 | 0.58% |
| November 2006 | 166 | 2 | 1.20% |

The MCL for coliform is 5% positive samples of all samples per month and the MCLG is zero. The reason for the coliform drinking water standard is to minimize the possibility of the water containing pathogens, which are organisms that cause waterborne disease. Because coliform bacteria are only a surrogate indicator of the potential presence of pathogens, it is not possible to state a specific numerical health risk. While USEPA normally sets MCLGs “at a level where no known or anticipated adverse effects on persons would occur”, they indicate that they cannot do so with coliform bacteria.

Coliform bacteria are an indicator organism that are ubiquitous in nature and are not generally considered harmful. They are used because of the ease in monitoring and analysis. If a positive sample is found, it indicates a potential problem that needs to be investigated and follow up sampling done. It is not at all unusual for a system to have an occasional positive sample. It is difficult, if not impossible, to assure that a system will never get a positive sample.

CCWD utilizes ozone as a primary disinfectant in the treatment process to achieve the requisite microbial inactivation outlined in the Surface Water Treatment Rule to assure that the water served is microbiologically safe. Before delivery to the distribution system, chloramines are added at a carefully controlled residual level to provide the best health protection without causing the water to have undesirable taste and odor or increasing the disinfection byproduct

formation potential. This careful balance of treatment processes is essential to continue supplying our customers with safe drinking water. Other equally important measures that CCWD have implemented include: an effective cross-connection control program, maintenance of a disinfectant residual throughout our system, an effective monitoring and surveillance program and maintaining positive pressures in our distribution system. Our system has already taken all of the steps described by CDHS as “best available technology” for coliform bacteria in Section 64447, Title 22, CCR.

RECOMMENDATIONS FOR FURTHER ACTION

CCWD’s drinking water quality meets all CDHS and USEPA drinking water standards set to protect public health. To further reduce the levels of the constituents identified in this report that are already significantly below the health-based Maximum Contaminant Levels established to provide “safe” drinking water, additional costly treatment processes would be required. The effectiveness of the treatment processes to provide any significant reductions in constituent levels at these already low values is uncertain. The health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed at this time.