2013 TRIENNIAL PUBLIC HEALTH GOAL REPORT
FOR THE
DRINKING WATER IN THE MAIN WATER SYSTEM

Background:

Provisions of the California Health and Safety Code (HSC §116470(b)) specify that water utilities with greater than 10,000 service connections prepare a special Public Health Goal Report (Report) every three years if water quality measurements have exceeded any Public Health Goal (PHG); the latest Report is due by July 1, 2013. PHGs are non-enforcement goals established by the California Environmental Protection Agency's (Cal-EPA) Office of Environmental Health Hazard Assessment (OEHAA). The regulation 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 having a California primary drinking water standard, also known as a Maximum Contaminant Level (MCL), and either a PHG or MCLG are required to be addressed in the Report. (The attached table contains a list of all regulated constituents with the MCLs and PHGs or MCLGs.)

There are a few constituents that are routinely detected in water systems at levels usually well below the drinking water standards for which no PHG or MCLG has yet been adopted by OEHHA or USEPA. As PHGs and MCLGs are updated the District will include them in its evaluation in future Reports as applicable.

The Report addresses any constituent detected in the District's water supply between 2010 and 2012 at a level exceeding any applicable PHG or MCLG, as required by the regulation. The Report includes 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 California Department of Public Health (CDPH) in setting MCL drinking water standards 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 and likewise are non-enforceable.

Water Quality Data Considered:

All of the water quality data collected in the Main Water System between 2010 and 2012 was considered for purposes of determining compliance with drinking water standards. This data was previously summarized in our 2010, 2011, and 2012 Annual Water Quality (AWQ) Reports, which are available on the District's website.

Guidelines Followed:

A workgroup formed by Association of California Water Agencies (ACWA) prepared guidelines for water utilities, which were used in the preparation of this PHG Report. No guidance was available from state regulatory agencies.

Best Available Treatment Technology and Cost Estimates:

Both the USEPA and CDPH adopt what are known as Best Available Technologies (BATs), which 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 not always possible or feasible do determine what treatment is needed to further reduce a constituent downward to or near the PHG or MCLG - many 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 a MCLG:

Only one constituent- coliform bacteria - was detected in the distribution system at levels above the MCLG. There is no PHG for coliform bacteria.

- *Coliform Bacteria:*

  Between 2010 and 2012, 100 to 125 samples were collected by the District each month and analyzed for the presence of coliform bacteria. Three times in a three-year period (one month in 2010 and two separate months in 2012) an initial sample was found to test positive for coliform bacteria. However, the confirmation samples tested negative and, as a result, no follow up actions were necessary. A maximum of 1% of these samples tested positive in each of the three months in which these detections occurred.

  The MCL for total Coliform is 5% positive samples of all samples per month and the MCLG is zero. Since a single sample tested positive during each month, the MCLG was exceeded even though confirmation sampling tested negative for coliform bacteria presence. 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 is 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 no known or anticipated

adverse effects on persons would occur", they indicate that they cannot do so with coliform bacteria. Therefore, it was set to zero.

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 performed. It is not at all unusual for a system to have an occasional positive initial sample given its prevalence in nature.

One of the primary treatment technologies utilized by the District to ensure the drinking water system is microbial safe (i.e. free of disease causing pathogens) is adding chlorine at its water treatment plants. The chlorine residual levels are carefully controlled at the treatment plants and within the distribution systems to provide the best health protection without causing the water to have undesirable taste and odor or increasing the disinfection byproduct level. This careful balance of treatment processes is essential to continue supplying customers with safe drinking water.

Actions that the District implemented over the years to protect the drinking water quality 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. The District is taking all of the steps described by CDPH as "best available technology" for Coliform bacteria in Section 64447, Title 22, of the California Code of Regulations.

Recommendations for Further Action:

The drinking water quality of the District's Main Water System meets all CDPH, and USEPA drinking water standards set to protect public health. Any additional effort by the District to further reduce the levels of coliform bacteria that are already significantly below the health-based MCLs established to provide "safe drinking water" would require additional costly treatment processes. The effectiveness of any new treatment process(es) to provide any significant reductions in coliform levels at these already low values is uncertain. In addition, the health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed.

REFERENCES:

No. 1 Excerpt from California Health & Safety Code: Section 116470(b)
No. 2 Table of Regulated Constituents with MCLs, PHGs or MCLGs
No. 3 El Dorado Irrigation District's 2010, 2011, and 2012 Water Quality Reports