

# **PUBLIC HEALTH GOAL REPORT FOR TRUCKEE DONNER PUBLIC UTILITY DISTRICT**

## **Background:**

Provisions of the California Health and Safety Code specify that larger (>10,000 service connections) water utilities prepare a special report by July 1, 2004 if their water quality measurements have exceeded any Public Health Goals (PHGs). PHGs are non-enforceable goals established by the Cal-EPA's 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 MCLGs adopted by USEPA. Only constituents which have a California primary drinking water standard and for which either a PHG or MCLG has been set are to be addressed.

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 nor MCLG has yet been adopted by OEHHA or USEPA including Total Trihalomethanes. These will be addressed in a future required report after a PHG has been adopted.

The new law specifies what information is to be provided in the report.

If a constituent was detected in the District's water supply between 2006 and 2008 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 the California Office of Environmental Health Hazard Assessment (OEHHA) which is part of Cal-EPA 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 Public Health (DPH) 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 by our water system between 2006 and 2008 for purposes of determining compliance with drinking water standards was considered. This data was all summarized in our 2006, 2007, and 2008 Annual Water Quality Reports which were mailed to all of our customers in June of the following year.

### **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 and California Department of Public Health guidelines were used in the preparation of our report.

### **Best Available Treatment Technology and Cost Estimates:**

Both the USEPA and CDHS adopt what are known as BATs or Best Available Technologies 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, 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 a MCLG:**

The following is a discussion of Arsenic, Coliform Bacteria, and Lead that was detected in our drinking water system at levels above the PHG, or if no PHG, above the MCLG.

**Arsenic:** The MCL for arsenic is 10 ppb, the PHG and MCLG for arsenic is 0.0004 ppb. We have detected arsenic in 7 of our 12 wells, Glenshire Drive Well at 13 ppb, Martis Valley Well at 8.6 ppb, Airport Well at 8 ppb, Prosser Village at 5 ppb, Old Greenwood Well at 5 ppb, Sanders Well at 9.1 ppb and Southside Well #2 at 1.5 ppb. The category of health risk associated with arsenic, and the reason that a drinking water standard was adopted for it, is that people who drink water containing Arsenic above the MCL throughout their lifetime could experience an increased risk of getting cancer. The Office of Environmental Health Assessment (part of California Environmental Protection Agency) has set the PHG at 4 ppt (0.0004 ppb). The PHG is based on a level that will result in not more than 1 excess cancer in 1 million people who drink 2 liters daily of this water for 70 years. The actual cancer risk may be lower or zero. The BAT that we are using for this report to lower the level below the MCL to 4 ppt is a fixed bed adsorption system. These are the same systems we are already using at Northside Well which has an arsenic level of 38 ppb before treatment and a post treatment level of N/D to 1.5 ppb, and the Hirschdale Well which has a pre treatment level of 40 ppb and post treatment level of N/D to 9 ppb. The estimated cost to install and operate such a treatment system on all 7 Wells would reliably reduce the Arsenic level to 4 ppt and would cost approximately \$6,831,000 for the initial construction with an additional O&M cost of \$5,471,400 per year. This would result in an assumed increased cost for each customer of \$492 per year.

## **Coliform Bacteria:**

During 2006 and 2007, we collected between 40 and 50 samples each month for Coliform analysis. Occasionally, a sample was found to be positive for Coliform Bacteria. Check samples were negative and follow up action was taken. A maximum of 2.5% of these samples were positive in any month. In 2008 there were no positive samples.

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 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 where no known or anticipated adverse effects on persons would occur”, they indicate that they cannot do so with coliforms.

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.

TDPUD adds chlorine at our sources to assure that the water served is microbiologically safe. The chlorine residual levels are carefully controlled 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 our customers with safe drinking water.

Other equally important measures that we have implemented include: an effective cross-connection control program, maintenance of the 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.

## **Lead**

There is no MCL for Lead. Instead the 90th percentile value of all samples from household taps in the distribution system cannot exceed an Action Level of 0.015 mg/l for lead. The PHG for lead is 0.002 mg/l. Lead and copper enter drinking water primarily through plumbing materials on the customer’s side of the water service. There is no MCL for Lead in source water from wells.

Exposure to lead and copper may cause health problems ranging from stomach distress to brain damage. On June 7, 1991, USEPA published a regulation to control lead and copper in drinking water. This regulation is known as the Lead and Copper Rule (also referred to as the LCR or 1991 Rule) which has also been adopted by CDPH. Numerical health risk

data on lead has not yet been provided by OEHHA, the State agency responsible for providing that information.

All of our source water samples for lead in 2006, 2007, and 2008 were less than the PHG. Based on extensive sampling of our distribution system in 2007, our 90th percentile value for lead was 0.004 mg/l which was over the PHG of 0.002 mg/L.

The treatment technique for the rule requires systems to monitor drinking water at customer taps. If lead concentrations exceed an action level of 15 ppb or copper concentrations exceed an action level of 1.3 ppm in more than 10% of customer tap samples, the system must undertake a number of additional actions to control corrosion. If the action level for lead is exceeded, the system must also inform the public about steps they should take to protect their health and may have to replace lead service lines under their control.

Our water system is in full compliance with the Federal and State Lead and Copper Rule. Based on our extensive sampling, it was determined according to State regulatory requirements that we meet the Action Levels for Lead. Therefore, we are deemed by CDHS to have “optimized corrosion control” for our system. In general, optimizing corrosion control is considered to be the best available technology to deal with corrosion issues and with any lead or copper findings. We continue to monitor our water quality parameters that relate to corrosivity, such as the pH, hardness, alkalinity, total dissolved solids, and will take action if necessary to maintain our system in an “optimized corrosion control” condition.

Since we are meeting the “optimized corrosion control” requirements, it is not prudent to initiate additional corrosion control treatment as it involves the addition of other chemicals and there could be additional water quality issues raised. Therefore, no estimate of cost has been included.

#### **RECOMMENDATIONS FOR FURTHER ACTION:**

The drinking water quality of the Truckee Donner Public Utility District at this time meets all State of California, Department of Public Health 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 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.