



**DATE:** December 6, 2016

**CATEGORY:** Public Hearing

**DEPT.:** Public Works

**TITLE:** **Approval of the Mountain View 2016 Water System Public Health Goals Report on Water Quality**

### **RECOMMENDATION**

1. Accept public comment regarding the City of Mountain View 2016 Water System Public Health Goals Report on Water Quality.
2. Approve the City's 2016 Water System Public Health Goals Report on Water Quality and direct staff to file the report with the California State Water Resources Control Board.

### **BACKGROUND**

The City of Mountain View tests for contaminants in its drinking water supply to comply with water quality requirements established by the Safe Drinking Water Act, the U.S. Environmental Protection Agency (EPA), and the State Water Resources Control Board (SWRCB). The standards, depending on the specific contaminant, are:

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected health risk. PHGs are nonenforceable goals established by the California Office of Environmental Health Hazard Assessment (OEHHA) and are based on health risk assessments.

PHGs are not regulatory requirements, but represent nonmandatory goals and are set at a level at which no known or anticipated adverse effects on health will occur with an adequate margin of safety. PHGs are established based on numerous criteria, including consideration of possible synergistic effects resulting from exposure to two or more contaminants, and consideration of potential adverse effects on members of subgroups that comprise a meaningful proportion of the population, including, but not limited to, infants, children, pregnant women, the elderly, and individuals with a history of serious illness. PHGs for cancer-causing chemicals are typically established at a risk level that one person in a population of

one million people drinking the water daily for 70 years would be expected to develop cancer as a result of exposure to that chemical.

Although PHGs are not regulatory requirements, State law requires the SWRCB to set drinking water requirements for chemical contaminants as close to the corresponding PHG as is economically and technologically feasible. PHGs adopted by the OEHHA are reviewed at least once every five years and revised as necessary based on the availability of new scientific data. There are no penalties for exceeding PHGs.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs are set by the U.S. EPA.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs (those that address health concerns) are set as close to PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to regulate the odor, taste, and appearance of drinking water. MCLs established by the SWRCB must be at least as stringent as the Federal MCL, if one exists.

### PHG EXCEEDANCES

The California Health and Safety Code requires California water retailers serving more than 10,000 service connections to prepare a report every three years informing consumers of water quality contaminants that exceeded the PHGs during the reporting period. The City is also required to accept comment at a public hearing and present the report to its governing body for approval.

While the City's water met all water quality regulatory requirements during this three-year reporting period, water quality testing identified two contaminants that had levels exceeding PHGs during the 2013-2015 reporting period. This public hearing and the attached report (Attachment 1) satisfy the regulatory requirements for the contaminant exceedances. No other actions are required by the regulations.

Since the reporting requirements were established in 1996, the City has not exceeded any PHGs until this reporting period and has not prepared such a report in the past.

## Hexavalent Chromium

Every five years, the EPA issues new lists of unregulated contaminants to be monitored by public water systems. The most recent list was issued in 2012, and required monitoring of hexavalent chromium; the City conducted tests for hexavalent chromium (also known as chromium 6) in 2014. The next required test will occur in 2017.

Chromium is a heavy metal that occurs throughout the environment. Hexavalent chromium is a soluble form of chromium and is recognized as a carcinogen. Hexavalent chromium enters waters from sources such as electroplating factories, leather tanneries, and textile manufacturing facilities. Hexavalent chromium is also naturally occurring and can enter groundwater from rocks and geologic formations that contain chromium.

The PHG for hexavalent chromium is 0.02 parts per billion (PPB). The test results for hexavalent chromium in the City's three water sources and in the City's distribution system were:

- Hexavalent chromium levels exceeded the PHG at four potable groundwater wells, with measurements of 0.84 to 1.6 PPB.
- Hexavalent chromium levels in water supplied by the San Francisco Public Utilities Commission (SFPUC) measured up to 0.12 PPB.
- Hexavalent chromium levels in water supplied by the Santa Clara Valley Water District (SCVWD) measured up to 0.12 PPB.
- Water in the City's distribution system, which is a mixture of water from the City's wells and water from the SFPUC or the SCVWD, measured up to 0.29 PPB.

The California MCL for hexavalent chromium in drinking water is 10 PPB; there is no Federal MCL for hexavalent chromium. All test results were below the State's MCL, but as the City's water sources tested above the PHG, the City is required to issue a PHG report.

## Lead

Lead is a metallic element which has been used primarily in piping, paints, cable coverings, bullets, radiation shielding material, and as a gasoline additive. Lead is a widespread contaminant and occurs in drinking water primarily as a consequence of

leaching from plumbing containing lead. Lead has multiple toxic effects on the human body. In particular, decreased intelligence in children and increased blood pressure in adults are among the more serious noncarcinogenic effects. Lead is also a carcinogen in animals and a probable carcinogen in humans.

Lead can be leached from pipes and fixtures containing lead within consumers' homes. The corrosion of household plumbing systems such as those containing lead-based solder used to join copper pipe, brass, and chrome-plated brass faucets, lead pipe connections from homes to the water main, brass/bronze water meters, and brass/bronze valves can all contribute to lead leaching.

Effective June 19, 1986, Federal regulations established in the Safe Drinking Water Act defined the allowable content of lead in pipes, solder, or flux to be considered "lead free." The regulations also required installation of these "lead-free" components in public water systems or any residential or nonresidential facility that is connected to a public water system and provides water for human consumption. California further reduced the allowable amounts of lead as of January 1, 2010.

New pipe and meter installations in the City distribution system meet all requirements for lead-free plumbing materials. Although the City is not required to test for lead in the distribution system, during the 2016 lead testing process, staff conducted tests of SFPUC and SCVWD source water and no lead was detected at the City's connection to these systems.

The City tests lead levels at approximately 30 to 40 residences every three years as required by the SWRCB. During the tests conducted in 2013, lead levels exceeded the PHG of 0.2 PPB at six of 34 residences tested, ranging from 7 to 27 PPB.

The U.S. EPA adopted a MCLG of zero for lead in drinking water based on occurrence of low-level effects and because the U.S. EPA classifies lead as a "probable human carcinogen." The U.S. EPA has not adopted an MCL for lead in drinking water because they regard the development of such a level as "not feasible" and rely on a treatment approach to achieve the objective of reducing exposures to lead. However, the U.S. EPA has set an "action level" for lead in drinking water of 15 PPB, the level the U.S. EPA believes is feasible for public water systems to attain by such measures as adjusting the physical characteristics of the water (pH, hardness) which affect the corrosivity of the water. If lead concentrations exceed 15 PPB in more than 10 percent of customer taps sampled, the water system operator must undertake a number of additional actions to control corrosion.

The City recently completed testing for 2016. Of the 34 samples tested, only 1 exceeded the action level, so the City is not required to take any action. Residents participating in the testing program have been provided with the results from their residence, as well as information regarding how to address related water quality concerns such as additional testing inside their home.

### **ANALYSIS**

In accordance with SWRCB requirements, staff prepared the attached 2016 Public Health Goals report to comply with reporting guidelines. The report includes the following required elements:

- The identification of each contaminant detected in drinking water that exceeds the applicable PHG.
- The MCL and PHG for each contaminant identified.
- The category or type of risk to health that could be associated with each contaminant.
- The best treatment technology commercially available, if any, that could be used to reduce or remove the contaminant.
- An estimate of the cost to use that treatment if it is appropriate and feasible.
- A description of what action, if any, the City intends to take to reduce the concentration of the contaminant.

At this time, the City of Mountain View Water system meets all drinking water standards set by the State and Federal agencies. No further action is required after the City approves the PHG report.

### **Best Available Technologies and Costs**

The City relies on its suppliers, the SFPUC and SCVWD, to provide water that meets all water quality standards, and the treated water received by the City currently meets all requirements. Although PHGs are not regulatory requirements, PHG rules require the City to estimate the cost of treating water to the PHG using commercially best available technologies (BATs). Because SFPUC- or SCVWD-treated water meets all water quality

requirements, both agencies have recommended no additional treatment be added to meet the PHG.

### Hexavalent Chromium

There are several treatment processes identified by the EPA as BATs, although the effectiveness of these technologies varies depending on several factors such as the initial hexavalent chromium concentration and the pH of the water. The majority of BATs are effective with low pH water, which limits treatment options available to the City.

The SCVWD is not a water retailer and is not required to develop an estimate for treatment costs. The SFPUC developed a high-level estimate of the cost of treatment to meet PHGs. The 20-year total cost (capital, operations, and maintenance) to treat water delivered by the SFPUC to all of its customers is \$835 million, which would raise the City's cost of water by an estimated 148 percent.

Staff developed cost estimates for treatment at City facilities using the estimated SFPUC costs to provide a perspective on the scale of potential costs of meeting PHGs. The estimated cost to construct, operate, and maintain the facilities for a 20-year period at the City's well sites is approximately \$24.0 million. However, because the City operates five well sites, it is likely the costs would be higher, as treatment facilities would be required at multiple sites. The estimated cost to construct, operate, and maintain the facilities for a 20-year period at the City's SFPUC supply sites is approximately \$53.0 million, and the cost for the City's SCVWD supply is approximately \$8.0 million. The total cost to treat all City water for hexavalent chromium (SFPUC, SCVWD, and City wells) for a 20-year period is estimated to be approximately \$85.0 million. Treatment facilities for the SFPUC and SCVWD sites would likely be too large to fit on the current location of the City's connections. The costs for treatment sites are not included in the above estimates.

### Lead

The SWRCB considers optimizing corrosion control as the BAT for reducing lead in drinking water, recommending a minimum pH of 8.2 be maintained throughout the distribution system.

From 2013 to 2015, the pH of the water supplied by the SFPUC averaged 8.9, and the pH of the water supplied by the SCVWD averaged 7.7; the pH of water produced from City wells ranged from 7.5 to 7.8. Water supplied by the SCVWD is treated

with corrosion inhibitors and is considered to be compliant with BATs. Water supplied by the SFPUC exceeds minimum pH levels, so no additional treatment would be recommended.

To implement BATs for water produced from City wells, the City would likely need to install chemical injection facilities at each well site to ensure pH remained at optimal levels. The costs to construct, operate, and maintain the facilities for a 20-year period at the City's well sites is approximately \$7.0 million.

Because the City's water is below the action level for reducing lead levels and the levels of hexavalent chromium are far below the MCL, the City is not required to, nor does staff recommend, the City implement additional water quality control measures.

### **FISCAL IMPACT**

There is no financial impact from this report.

The data available for developing cost estimates and analyzing the effectiveness of various BATs is complex and incomplete. To fully understand the potential financial impact of meeting the PHGs, staff would need to contract for an analysis of available technologies and development of a cost estimate specific to Mountain View's facilities.

### **ALTERNATIVES**

1. Provide comments or changes to the PHG Report.
2. Provide alternate direction to staff.

**PUBLIC NOTICING**

Agenda posting and a notice of the public hearing was published in two newspapers of general circulation, the *San Jose Post Record* and the *Mountain View Voice*.

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AT-KH-WM/GAH/3/CAM  
761-12-06-16CR-E

Attachment: 1. City of Mountain View 2016 Public Health Goals Report