

SANTA MARGARITA WATER DISTRICT 2010 PUBLIC HEALTH GOALS REPORT

Background:

Provisions of the California Health and Safety Code (Section 116470 (2)[b]) specify that water utilities with over 10,000 services connections prepare a special report by July 1, 2010. Public Health Goals (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. (Attachment No. 1 is a list of all regulated constituents with the MCLs and PHGs or MCLGs.)

If a constituent was detected in the District's water supply between 2007 and 2009 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 (if applicable) 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.

The Association of California Water Agencies (ACWA) formed a workgroup which prepared guidelines for water utilities to use in preparing these required reports. The ACWA guidelines were used in the preparation of our report.

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 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 by our water system between 2007 and 2009 for purposes of determining compliance with drinking water standards was considered. This data was all summarized in our 2007, 2008, and 2009 annual Consumer Confidence Reports which have been mailed to all of our customers. The pertinent PHGs are reported in Table 1.

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 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 2007, 2008, and 2009, we collected between 150 & 195 samples each month for coliform analysis. Occasionally a sample was found to be positive for coliform bacteria but resamples were negative and follow up actions were taken. A maximum of 0.6% of the monthly samples were positive in any month during 2007; a maximum of 0.5% occurred during 2008; and a maximum of 0.6% during 2009.

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 may 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 indicator organisms which are ubiquitous in nature and 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.

Chloramines are added to our water sources to assure that the water served is microbiologically safe. The chloramine residual levels are carefully controlled to provide the best health protection without causing the water to have undesirable taste or odor, or an increase of disinfection byproducts. This careful balance of treatment processes is essential to continue supplying our customers with safe drinking water. We are working closely with our regional water supplier and have instituted new disinfection procedures to provide for a slightly higher disinfectant residual.

Other equally important measures that we 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, California Code of Regulations.

Lead and/or Copper:

There is no MCL for Lead or Copper. 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 and 1.3 mg/L for copper. The PHG for lead is 0.002 mg/L. The PHG for copper is 0.17 mg/L.

The category of health risk for lead is damage to the kidneys or nervous system of humans. The category of health risk for copper is gastrointestinal irritation. Numerical health risk data on lead and copper have not yet been provided by OEHHA, the state agency responsible for providing that information.

Based on extensive sampling of our distribution system in 2009, our 90th percentile value for lead was 0.011mg/L. The 90th percentile for copper was 0.149 mg/L. Our water system is in full compliance with the Federal and State Lead and Copper Rule. Based on our extensive sampling, according to State regulatory requirements, we meet the Action Levels for Lead and Copper. 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.

Radiological:

Most drinking water sources have very low levels of radioactive contaminants, which are not considered to be a public health concern. Most of the contaminations are naturally occurring, although contamination of drinking water sources from human-made nuclear materials can also occur. During the 2007-2009 period, our supplier detected minor levels of Gross Alpha and Gross Beta particle emitters, as indicated in Table 1.

Currently there is no PHG for drinking water regarding either Gross Alpha or Gross Beta activity. The most important reason is that the designation of Gross Alpha or Gross Beta activity does not refer to specific chemical contaminants, but rather to a group of radioactive elements. CDHS is in the process of developing PHGs for the isotopes for which there are MCLs.

Table 1: SMWD Analytical Results Summary

Parameter	Units	State or Federal MCL	PHG or MCLG	Range Average	2007	2008	2009
Gross Alpha (particle activity)	pCi/L	15	0	Range	ND – 7.2	3.8 - 9.3	3.8 – 9.3
				Average	ND	5.6	5.6
Gross Beta (particle activity)	pCi/L	50	0	Range	ND – 6.4	ND – 6.4	ND – 6.4

activity)							
				Average	ND	4.8	4.3
Uranium (particle activity)	pCi/L	20	0.43	Range			2.9 – 3.4
				Average			3.3
Arsenic	ppb	10	0.004	Range	ND – 2.8	ND - 2.9	ND - 2.6
				Average	ND	2.4	2.3
Lead	ppm	0.015	0.002	Range			ND - 0.016
				90th %			0.011
Coliform Bacteria	%	5.0	0		0.6	0.5	0.6

Recommendations For Further Action:

The drinking water quality of the Santa Margarita Water District meets all State of California, Department of Health Services 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.