



GOLDEN STATE WATER COMPANY SAN DIMAS

2022 Public Health Goal Report

**Pursuant to Section 116355
of the California Health and Safety Code**

JUNE 2022



**Main San Gabriel Basin
WATERMASTER**

2022 Public Health Goal (PHG) Report

Golden State Water Company-San Dimas System

1.0 Introduction

Under the Calderon-Sher Safe Drinking Water Act of 1996, public water systems in California serving greater than 10,000 connections must prepare a report containing information on 1) detection of any contaminant in drinking water at a level exceeding a Public Health Goal (PHG), 2) estimate of costs to remove detected contaminants to below the PHG using Best Available Technology (BAT), and 3) health risks for each contaminant exceeding a PHG. This report must be made available to the public every three years. The initial PHG Report was due on July 1, 1998, and subsequent reports are due every three years thereafter.

The 2022 PHG Report has been prepared to address the requirements set forth in Section 116470 of the California Health and Safety Code. It is based on water quality analyses during calendar years 2019, 2020, 2021 or, if certain analyses were not performed during those years, the most recent data available. The PHG Report has been designed to be as informative as possible, without unnecessary duplication of information contained in the Consumer Confidence Report, which is made available to customers by July 1 of each year.

There are no regulations explaining requirements for the preparation of PHG reports. A workgroup of the Association of California Water Agencies (ACWA) Water Quality Committee has prepared suggested guidelines for water utilities to use in preparing PHG reports. The ACWA guidelines were used in the preparation of our report. These guidelines include tables of cost estimates for BAT. The State of California (State) provides ACWA with numerical health risks and category of health risk information for contaminants with PHGs. This health risk information is appended to the ACWA guidelines.

2.0 California Drinking Water Regulatory Process

California Health and Safety Code Section 116365 requires the State to develop a PHG for every contaminant with a primary drinking water standard or for any contaminant the State is proposing to regulate with a primary drinking water standard. A PHG is the level which poses no significant health risk if consumed for a lifetime. The process of establishing a PHG is a risk assessment based strictly on human health considerations. PHGs are recommended targets and are not required to be met by any public water system.

The State office designated to develop PHGs is the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA). The PHG is then forwarded to the State Water Resource Control Board, Division of Drinking Water (DDW) for use in revising or developing a Maximum Contaminant Level (MCL) in drinking water. The MCL is the highest level of a contaminant that is allowed in drinking water. State MCLs cannot be less stringent than federal MCLs and must be as close as is technically and economically

feasible to the PHGs. DDW is required to take treatment technologies and cost of compliance into account when setting an MCL. Each MCL is reviewed at least once every five years.

Two radiological contaminants (gross alpha particle and gross beta particle) have MCLs but do not yet have designated PHGs. For these contaminants, the Maximum Contaminant Level Goal (MCLG), the federal U.S. Environmental Protection Agency (USEPA) equivalent of PHGs, is used in the 2022 PHG Report.

3.0 Identification of Contaminants

Section 116470(b)(1) of the Health and Safety Code requires public water systems serving more than 10,000 connections to identify each contaminant detected in drinking water that exceeded the applicable PHG. Section 116470(f) requires the MCLG to be used for comparison if there is no applicable PHG.

Golden State Water Company (Golden State Water) - San Dimas System has approximately 16,118 service connections. From 2019 to 2021, Golden State Water's water supplies included local groundwater, treated surface water purchased from Covina Irrigating Company (CIC), and purchased water from Three Valleys Municipal Water District (TVMWD) which includes surface water treated by TVMWD and Metropolitan Water District of Southern California (MWDSC). The following constituents were detected at one or more locations within the drinking water system at levels that exceeded the applicable PHGs or MCLGs.

- Arsenic is naturally occurring in treated surface water purchased from CIC.
- Gross Alpha Particle Activity (gross alpha) is naturally occurring in local groundwater and treated surface water purchased from CIC.
- Gross Beta Particle Activity (gross beta) is naturally occurring in treated surface water purchased from TVMWD.
- Uranium is naturally occurring in local groundwater, and treated surface water purchased from the CIC and TVMWD.

Table 1 shows the applicable PHG or MCLG and MCL for each contaminant identified above. Table 1 includes the maximum, minimum, and average concentrations of each contaminant which exceeds a PHG or MCLG in drinking water supplied by Golden State Water in calendar years 2019 to 2021.

4.0 Numerical Public Health Risks

Section 116470(b)(2) of the Health and Safety Code requires disclosure of the numerical public health risk, determined by OEHHA, associated with the MCLs, PHGs and MCLGs. Available numerical health risks developed by OEHHA for the contaminants identified above are shown on Table 1. Only numerical risks associated with cancer-causing chemicals have been quantified by OEHHA.

Arsenic - OEHHA has determined the health risk associated with the PHG is one excess case of cancer in a million people. USEPA has determined the risk associated with the MCL is 2.5 excess cases of cancer in 1,000 people over a lifetime exposure of 70 years.

Gross Alpha - OEHHA has not established a PHG. USEPA has established an MCLG of 0. USEPA has determined the risk associated with the MCL is one excess case of cancer in 1,000 people over a lifetime exposure of 70 years.

Gross Beta - OEHHA has not established a PHG. USEPA has established an MCLG of 0. USEPA has determined the risk associated with the MCL is 2 excess cases of cancer in 1,000 people over a lifetime exposure of 70 years.

Uranium - OEHHA has determined the health risk associated with the PHG is one excess case of cancer in a million people. USEPA has determined the risk associated with the MCL is 5 excess cases of cancer in 100,000 people over a lifetime exposure of 70 years.

5.0 Identification of Risk Categories

Section 116470(b)(3) of the Health and Safety Code requires identification of the category of risk to public health associated with exposure to the contaminant in drinking water, including a brief, plainly worded description of those terms. The risk categories and definitions for the contaminants identified above are shown on Table 1.

6.0 Description of Best Available Technology

Section 116470(b)(4) of the Health and Safety Code requires a description of the BAT, if any is available on a commercial basis, to remove or reduce the concentrations of the contaminants identified above. The BATs are shown on Table 1.

7.0 Costs of Using Best Available Technologies and Intended Actions

Section 116470(b)(5) of the Health and Safety Code requires an estimate of the aggregate cost and cost per customer of utilizing the BATs identified to reduce the concentration of a contaminant to a level at or below the PHG or MCLG. In addition, Section 116470(b)(6) requires a brief description of any actions the water purveyor intends to take to reduce the concentration of the contaminant and the basis for that decision.

Arsenic - The BATs for removal of arsenic in water for large water systems are: activated alumina, coagulation/filtration, lime softening, ion exchange, and reverse osmosis. Arsenic was detected above the PHG in treated surface water purchased from CIC. All drinking water supplies comply with the MCL for arsenic. The estimated cost to reduce arsenic levels to below the PHG of 0.004 microgram per liter ($\mu\text{g}/\text{l}$) using ion exchange was calculated. Because the Detection Limit for purposes of Reporting (DLR) for arsenic is 2 $\mu\text{g}/\text{l}$, treating arsenic to below the PHG level means treating arsenic to below the DLR of 2 $\mu\text{g}/\text{l}$. There are numerous factors influencing the actual cost of reducing arsenic levels to the PHG. Achieving the water quality

goal for arsenic could cost approximately \$417,000 per year, or \$26 per service connection per year.

Gross Alpha, Gross Beta, and Uranium - The only BAT for the removal of gross alpha in water for large water systems is reverse osmosis, which can also remove gross beta and uranium, if detected. Gross alpha was detected above the MCLG at two groundwater wells and in treated surface water purchased from CIC. Gross beta was also detected above the MCLG in treated surface water purchased from TVMWD. Uranium was detected above the PHG at all groundwater wells, and treated surface water purchased from CIC and TVMWD. The cost of providing treatment using reverse osmosis to reduce gross alpha levels in groundwater and in treated surface water to the MCLG (and consequently gross beta and uranium below the MCLG and PHG, respectively) was calculated. Because the DLR for gross alpha is 3 pCi/liter (pCi/l), treating gross alpha to 0 pCi/l means treating it to below the DLR of 3 pCi/l. Achieving the water quality goal for gross alpha, gross beta, and uranium could range from \$3,170,000 to \$27,100,000 per year, or between \$196 and \$1,681 per service connection per year.

All Contaminants - In addition, a cost estimate to treat all water produced or purchased by Golden State Water using reverse osmosis to remove all the contaminants detected above the PHGs or MCLGs was calculated. All contaminants listed in Table 1 may be removed to non-detectable levels by reverse osmosis. As shown on Table 1, achieving the water quality goals for all contaminant using reverse osmosis could range from \$3,170,000 to \$27,100,000 per year, or between \$196 and \$1,681 per service connection per year.

For additional information, please contact Mr. George Zakhari, Water Quality Engineer at (760) 515-8322, or write to Golden State Water Company, 401 S. San Dimas Canyon Road, San Dimas, CA 91773.

TABLE 1
2022 PUBLIC HEALTH GOAL REPORT
GOLDEN STATE WATER COMPANY - SAN DIMAS SYSTEM

PARAMETER	UNITS OF MEASUREMENT	PHG OR (MCLG)*	MCL	DLR	CONCENTRATION		CATEGORY OF RISK	CANCER RISK AT PHG OR MCLG	CANCER RISK AT MCL	BEST AVAILABLE TECHNOLOGIES	AGGREGATE COST PER YEAR	COST PER SERVICE CONNECTION PER YEAR
					VALUE	RANGE						
INORGANIC CHEMICALS												
Arsenic	µg/l	0.004	10	2	ND	ND - 4.2	C	1 x 10 ⁻⁶	2.5 x 10 ⁻³	AA,C/F,E,IE,LS,O/F,RO	\$417,000 (a)	\$26 (a)
RADIOLOGICAL												
Gross Alpha Particle Activity	pCi/l	(0)	15	3	ND	ND - 5.2	C	0	1 x 10 ⁻³	RO	\$3,170,000 - \$27,100,000 (b)	\$196 - \$1,681 (b)
Gross Beta Particle Activity	pCi/l	(0)	50	4	ND	ND - 6	C	0	2 x 10 ⁻³	IE, RO	--	--
Uranium	pCi/l	0.43	20	1	2.2	ND - 4.1	C	1 x 10 ⁻⁶	5 x 10 ⁻⁵	IE, RO, LS, C/F	--	--
ALL CONTAMINANTS	--	--	--	--	--	--	--	--	--	RO	\$3,170,000 - \$27,100,000 (c)	\$196 - \$1,681 (c)

* MCLGs are shown in parentheses. MCLGs are provided only when no applicable PHG exists.

RISK CATEGORIES

C (Carcinogen) = A substance that is capable of producing cancer.

NOTES

PHG = Public Health Goal
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
ND = Not Detected
µg/l = micrograms per liter or parts per billion
pCi/l = picoCuries per liter
DLR = Detection Limit for Purposes of Reporting

TREATMENT TECHNOLOGIES

AA = Activated Aluminum
C/F = Coagulation/Filtration
E = Electrodialysis
IE = Ion Exchange
LS = Lime Softening
O/F = Oxidation/Filtration
RO = Reverse Osmosis

(a) Estimated cost to remove arsenic using IE.

(b) Estimated cost to remove gross alpha particle activity using RO, which also removes gross beta particle activity and uranium.

(c) Assuming treating the entire production by RO, which can remove all contaminants listed in the above table to below the detectable levels.