



**Report on Water Quality
Relative to Public Health
Goals for 2022-2024**

CITY OF POWAY

WATER QUALITY RELATIVE TO PUBLIC HEALTH GOALS

Published June 2025, covering years 2022 - 2024
California Health and Safety Code Section 116470(b)

Background

California Health and Safety Code Section 116470(b) specifies that public water systems with over 10,000 service connections prepare a brief triennial report if their water quality measurements have exceeded Public Health Goals (PHGs). PHGs are non-enforceable goals established by the California Environmental Protection Agency's (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA). The report must also list the detection of any contaminant above the Maximum Contaminant Level Goals (MCLGs) set by the United States Environmental Protection Agency (USEPA). Only constituents that have a California primary drinking water standard and for which a PHG or MCLG has been set are addressed in this report. This report covers the years 2022, 2023, and 2024 and follows Association of California Water Agencies (ACWA) guidelines. These reports, unique to California, are required in addition to the extensive public reporting of water quality information that the City of Poway (City) has been providing for many years and in addition to the federally mandated Consumer Confidence Reports (CCR).

The City of Poway's drinking water quality meets all State and Federal drinking water standards.

Public water systems conduct frequent and extensive tests to ensure the quality of their water. A few constituents are routinely detected at levels well below drinking water standards for which no PHG or MCLG has been adopted by OEHHA or USEPA including Total Trihalomethanes. These will be addressed in a future report after a PHG has been adopted. If a constituent was detected in the City's water supply between 2022 and 2024 at a level exceeding an applicable PHG or MCLG, this report provides information regarding the constituent as required by law, which includes:

- the numerical public health risk associated with the Maximum Contaminant Level (MCL), 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 appropriate and feasible.

WHAT ARE PUBLIC HEALTH GOALS?

Public Health Goals are set by the OEHHA, which is part of the California Environmental Protection Agency (CalEPA). The PHGs are non-enforceable and are not required to be met by any public water system. MCLGs are the federal equivalent to PHGs. There is a difference in how each organization

categorizes carcinogens. The MCLGs for carcinogens are set at zero because the EPA assumes there is no safe level of exposure to them. Conversely, PHGs are set at a level considered to pose no significant risk of cancer. This is usually denoted as a “one-in-a-million” cancer risk for a lifetime of exposure. At that level, not more than one person in a population of one million people drinking water daily for 70 years would be expected to develop cancer from exposure to that chemical. Determinations of health risk at these levels are theoretical and have not been quantified or proven through scientific experimentation.

WATER QUALITY DATA

All water quality data collected from the City’s public water system in 2022, 2023, and 2024 for purposes of determining compliance with drinking water standards was considered in this report. The water quality data was summarized in the City’s 2022, 2023, and 2024 Annual Water Quality Reports made available to all residents and customers. Water quality data from 2022-2024 considered for this report contained no constituents that exceeded state or federal compliance standards. This report discusses five constituent classifications that were detected above the PHG or MCLG limits.

CONSTITUENTS DETECTED THAT EXCEED A PHG OR MCLG.

Radioactivity –

Gross Alpha: Radionuclides such as gross alpha particle in water supplies are from erosion of naturally occurring deposits. Gross alpha particle activity is a measure of the total amount of radioactivity in a water sample attributable to the radioactive decay of alpha-emitting elements. The EPA’s MCLG for gross alpha particle activity is zero (0) and the MCL is 15 picocuries per liter of water (pCi/L). From 2022-2024 samples collected and analyzed from untreated surface water ranged from non-detect (ND) to 3.39 (+/- 1.74) pCi/L. Although there is no PHG for Gross Alpha, the MCLG is zero. The health risk category for gross alpha particles is carcinogenicity. The numerical health risk for gross alpha, based on the MCL, is one cancer case of one-thousand people exposed over a lifetime.

Gross Beta: Gross Beta particle activity is a measure of the total amount of radioactivity in a water sample attributable to the radioactive decay of natural and man-made deposits. OEHHA concluded in 2003 that a PHG was not practical. The MCLG for gross beta particle is zero (0) and the MCL is 4 millirems per year (4 mrem/yr) annual dose equivalent with an MCL ‘trigger’ of 50 pCi/l which will require additional testing. From 2022-2024 samples collected and analyzed from untreated surface water detected and ranged from ND to 5.99 (+/- 1.52) pCi/L. The health risk category is carcinogenicity. The numerical health risk for Gross Beta, based on the MCL, is two cancer cases in a population of ten-thousand people exposed over a lifetime.

Uranium: Uranium is a natural-occurring radioactive element ubiquitous in geological formations and the earth’s crust. Uranium is found in ground and surface waters due to erosion of natural deposits. The MCL for uranium is 20 pCi/L and PHG is 0.43 pCi/L. Samples collected from untreated surface water in 2022-2024 contained values that ranged from non-detect ND to 2.69 pCi/L, with all samples below the MCL. The health risk category for uranium

is carcinogenicity. The numerical health risk for uranium, based on the PHG, is one cancer case in a population of one-million people exposed over a lifetime. The actual cancer risk may be lower. These detections do not constitute a violation of drinking water regulations or indicate the water was unsafe to drink.

Arsenic – Arsenic is a naturally occurring element in the earth's crust and is widely distributed in the environment. All humans are exposed to microgram quantities of arsenic (inorganic and organic) largely from food (25 to 50 µg/day) and to a lesser degree from drinking water and air. In certain geographical areas, natural mineral deposits may contain large quantities of arsenic, and this may result in higher levels of arsenic in water. The main commercial use of arsenic in the U.S. is in pesticides, herbicides and wood preservatives. Misapplication or accidental spills of these materials could result in contamination of nearby water supplies. Arsenic does not tend to accumulate in the body at low environmental exposure levels. The levels of arsenic that most people ingest in food and water (50 µg/day) have not posed health concerns. The MCL for arsenic is 10 ppb and the PHG is 0.004 ppb. From 2022-2024 samples collected and analyzed from untreated surface water detected arsenic levels above the PHG of 2.11 ppb and below the MCL of 10 ppb.

The category of health risk associated with arsenic is carcinogenicity. The Office of Environmental Health Assessment has set the PHG at 0.004 ppb. The PHG is based on a level that will result in not more than one excess cancer case 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 numerical health risk associated with the MCL is 2.5 cases per thousand people exposed.

Lead and Copper – There is no MCL for lead or copper. However, it is required that 90% of samples taken from household taps in the distribution system cannot exceed an Action Level (AL) of 0.015 mg/l for lead and 1.30 mg/l for copper. The USEPA MCLG for lead is zero (0) and for copper is 1.30 mg/l.

The lead and copper sample data for this report was taken from the 2022 Lead and Copper Report submitted to the State Water Resources Control Board Division of Drinking Water (DDW). Thirty-two (32) locations were sampled from single family household taps. Samples were collected on August 8, 11, 15, and 22, 2022. The 90th percentile lead level at those locations was 0.00185 mg/l and 90th percentile copper level was 0.22 mg/l. The lead level of samples taken collectively falls below the 90th percentile. The copper level is below the action level as well represented as the 90th percentile level collectively. The public health goals of copper 0.3 mg/l and lead .0002 mg/l were not exceeded. The EPA MCLG for copper 1.30 mg/l was not exceeded. The EPA MCLG for lead (0) was exceeded. The City will submit the next required triennial Lead and Copper Report in 2025.

The action levels for lead and copper refer to a concentration measured at the tap. Much of the lead and copper in drinking water is derived from household plumbing (The Lead and Copper Rule, Title 22, California Code of Regulations section 64672.3). The category of health risk for lead is developmental neurotoxicity, cardiovascular toxicity, and carcinogenicity. The category of health risk for copper is digestive system toxicity. The numerical health risk for lead at the MCLG is one person in a million per lifetime of exposure. At the California MCL the health risk is one cancer case per million people exposed. At the MCL the actual cancer risk may be lower. The numerical health risk for copper at the California MCL is two cases per million people per lifetime of exposure.

Our public water system complies with the federal and state Lead and Copper Rule Regulations. Based on our sampling it was determined, according to regulatory requirements, that the city meets the Action Levels for lead and copper. Therefore, we are deemed by the State Water Resources Control Board Division of Drinking Water (DDW) to have “optimized corrosion control” for our distribution system. In general, optimizing corrosion control is 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 pH, hardness, alkalinity, total dissolved solids and, if necessary, will take additional action to continue 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 chemicals that could raise additional water quality issues. Therefore, no estimate of cost has been included.

BEST AVAILABLE TREATMENT TECHNOLOGY AND COST ESTIMATES

Both the EPA and DDW adopt the best available technologies which are the best methods of reducing contaminant levels to the MCL. It is not always possible or feasible to determine what treatment is needed to further reduce a constituent downward towards 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 a 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.

Reverse osmosis (RO) is the best available technology to lower the level of the detected constituents listed in this report below the associated PHGs since the levels are already below the MCL. Please note that accurate cost estimates are difficult, highly speculative, and theoretical. Cost estimating guides from ACWA guidance reports were used in determining the estimated cost to implement the best available technologies. According to the ACWA Cost Estimates for Treatment Technologies Survey, to install, operate, and maintain a large reverse osmosis surface water treatment plant, costs could range between approximately \$2.40-\$5.15 per 1,000 gallons of water treated. The Lester J. Berglund Water Treatment Plant (WTP) production capacity is 24 million gallons per day. The estimated capital cost for an RO system could be between \$21,000,000 and \$46,000,000. The cost per customer service connection, assuming 14,000 service connections and the full capacity utilized at the WTP could range from \$1,500- \$3,286 per service connection annually. There could be additional annualized costs for water conditioning to ensure water treated by RO is optimized for distribution system corrosion control. Costs including annualized capital, construction, engineering, planning, environmental, contingency, and O&M are estimated, only general assumptions can be made without extensive research and assessment by a qualified professional engineer.

RECOMMENDATIONS FOR FURTHER ACTION

The drinking water quality in the City of Poway meets all state and federal drinking water standards set to protect public health. All constituents discussed in this report were detected below the health based MCLs established for “safe drinking water.” To reduce those levels even further would require a substantial undertaking of engineering analysis and cost estimating. The review would take into consideration multiple variables, including advanced treatment methods such as reverse osmosis and ultrafiltration. The effectiveness of additional or alternative treatment processes to provide any

significant reductions in constituent levels is uncertain. The health benefits of further hypothetical reductions are not clear and may not be quantifiable. The city spends approximately \$4,500,000 annually on conventional water treatment, including operation and maintenance of the WTP and chemicals for disinfection and conventional treatment. Therefore, since the City's drinking water meets all state and federal standards set to protect public health, no additional action is proposed.

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