JUNE 2025

CITY OF RIALTO

REPORT ON WATER QUALITY

RELATIVE TO PUBLIC HEALTH GOALS

FOR YEARS 2022, 2023, 2024

BACKGROUND:

Provisions of the California Health and Safety Code (Section 116470 (b))[1] specify that larger water utilities (>10,000 service connections) prepare a special report by July 1, 2025 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 Maximum Contaminant Level Goals (MCLGs) adopted by United States Environmental Protection Agency (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. This report covers the "detection" of contaminants above both PHGs and MCLGs found in the City's water system during calendar years 2022, 2023 and 2024.

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 has MCLG 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.

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 the information required by 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 PHG'S:

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 Division of Drinking Water 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 2022 and 2024 for purposes of determining compliance with drinking water standards was considered. This data was all summarized in our 2022, 2023, and 2024 Consumer Confidence Reports and was made available online at www.rialtoca.gov.

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 guidelines were used in the preparation of our report. No guidance was available from state regulatory agencies.

BEST AVAILABLE TREATMENT TECHNOLOGY AND COST ESTIMATES:

Both the USEPA and DDW 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:

With three exceptions, the City of Rialto's water supply complies with the Public Health Goal (PHG) and Maximum Contaminant Level Goal (MCLG) standards. This report details the constituents identified in the drinking water sources that exceeded the PHG, or in the absence of a PHG, the MCLG.

ARSENIC:

Arsenic is a semi-metal element in the periodic table. The PHG for arsenic is 0.004 ppb (parts per billion). Effective January 23, 2006, the MCL for arsenic was lowered from 50 ppb to the revised standard of 10 ppb. The City of Rialto is required to sampleS on a quarterly basis.

When a system is sampling for arsenic annually or less frequently at any sampling point and has a monitoring result that exceeds the MCL, the system must increase the frequency of monitoring at that sampling point to quarterly sampling. Since the initial detection of arsenic on March 22, 2023 during the routine triennial sampling, the City has been on a quarterly sampling plan for arsenic at City Well 2.

Arsenic test results for the City for the years 2023 and 2024 from all groundwater and import sources had a range of not detected to 9.7 ppb. Arsenic was found to occur in one groundwater well (City Well 2). It should be noted that City Well 2 water is blended with additional water sources that contain no detectable levels of arsenic. The following well had detection levels above the PHG of 0.004 ppb:

SOURCE	PHG ppb	MCL ppb	RESULT ppb	DATE
City Well 2	0.004	10	9.7	3/22/2023
City Well 2	0.004	10	5.2	6/29/2023
City Well 2	0.004	10	5.1	9/13/2023
City Well 2	0.004	10	5.2	12/14/2023
City Well 2	0.004	10	5.3	3/21/2024
City Well 2	0.004	10	5.4	6/7/2024
City Well 2	0.004	10	5.9	9/17/2024

Arsenic is a naturally occurring element that is found in combination with either inorganic or organic substances to form many different compounds. Inorganic arsenic compounds are found in soils, sediments and groundwater. These compounds occur naturally or as a result of mining, ore smelting, and industrial use of arsenic. Organic arsenic compounds are found mainly in fish and shellfish. In the past, inorganic forms of arsenic were used in pesticides and paint pigment. They were also used as wood preservatives and as a treatment for a variety of ailments. Today, usage of arsenic–containing pesticides and wood preservatives is restricted.

People are most likely to be exposed to inorganic arsenic through drinking water and, to a lesser extent, through various foods. Unusually large doses of inorganic arsenic can cause symptoms ranging from nausea, vomiting, and diarrhea to dehydration and shock. Long-term exposure to high levels of inorganic arsenic in drinking water has been associated with skin disorders and increased risks for diabetes, high blood pressure, and several types of cancer. Inorganic arsenic and arsenic compounds are considered to be cancer-causing chemicals. Forms of organic arsenic found in seafood are not known to be toxic to humans.

Arsenic has no smell, taste, or color when dissolved in water, even in high concentrations, and therefore only laboratory analysis can determine the presence and concentration of arsenic in water. It occurs naturally in rocks, mineral deposits, and soil, water, air, and plants and animals. It can be further released

into the environment through natural activities such as volcanic action, erosion of rocks and forest fires, or through human actions.

Because it occurs naturally in the environment and as a by-product of some agricultural and industrial activities, it can enter drinking water through the ground or as runoff into surface water sources.

The City water system is in full compliance with federal and state rules for arsenic.

The BATs for arsenic to lower the level below the MCL are activated alumina, coagulation/filtration, ion exchange, lime softening, electro-dialysis, RO, and oxidation/filtration. Although the City of Rialto arsenic levels are below the MCL, RO would be required to lower the arsenic level additionally below the PHG. Although cost estimates for large-scale treatment installations are difficult, estimated costs for RO include annualized capital, construction, engineering, planning, environmental, contingency, operations and maintenance, and are based on the ACWA Public Health Goals Survey of Cost Estimates for Treatment Technologies (2012). The updated (2021) cost estimate for RO for the City of Rialto's well using this data is estimated to be $35 million. This would result in an average estimated cost of $2,200 per customer per year. This includes additional costs for corrosion control because water treated by RO is corrosive and could cause the water to exceed lead and copper regulations. The City does not intend to install BATs for arsenic at this time.

HEXAVALENT CHROMIUM:

Hexavalent chromium (Cr(VI) can come from both natural and industrial sources. Natural sources include rocks and minerals. Weathering processes can release chromium from these minerals into soil and groundwater. Industrial sources include processes like electroplating, stainless steel production, and the use of chromium in various industrial applications like pigments, dyes, and coatings.

People are most likely to be exposed to hexavalent chromium through breathing in fumes, mists, or dusts, ingesting it in food or water, or through direct skin contact. Major sources of exposure include welding, metal finishing, and the use of chromate pigments in various industries. Hexavalent chromium is a known human carcinogen, particularly when inhaled, and poses various health risks, including lung cancer, skin irritation, and reproductive harm. Exposure to Cr(VI) can also cause irritation of the nose, throat, and lungs. It is important to note that while trivalent chromium is an essential nutrient, hexavalent chromium is a less common form that is often man-made and associated with industrial sources.

Hexavalent chromium is odorless and tasteless when dissolved in water, making it difficult to detect even in high concentrations, and therefore only laboratory analysis can determine the presence and concentration of hexavalent chromium in water.

Because it occurs naturally in the environment and as a by-product of some industrial activities, it can enter drinking water through the ground or as runoff into surface water sources.

The City water system is in full compliance with federal and state rules for hexavalent chromium.

Hexavalent chromium was found to occur in all groundwater wells and import water. Cr(VI) test results for the City for the year 2024 from all groundwater and import sources had a range of 0.16 ppb to 2.8 ppb.

SOURCE	PHG ppb	MCL ppb	RESULT ppb	DATE
Chino 2	0.02	10	2.8	10/17/2024
City 2	0.02	10	0.97	10/17/2024
City 4A	0.02	10	0.58	10/17/2024
Rialto 3	0.02	10	1.7	10/17/2024
Miro 3	0.02	10	1.2	10/17/2024
EW-1	0.02	10	1.2	10/17/2024
SWTP	0.02	10	0.16	10/17/2024
Baseline Feeder	0.02	10	1.4	10/17/2024

The Best Available Technology (BATs) to lower hexavalent chromium are coagulation/filtration, ion exchange, and Reverse Osmosis (RO). These BATs would be required to lower hexavalent chromium levels below the PHG. Estimated costs for RO include annualized capital, construction, engineering, planning, environmental, contingency, operations and maintenance, and are based on the ACWA Public Health Goals Survey of Cost Estimates for Treatment Technologies (2012). The updated (2021) cost estimate for RO for the City's wells and surface water treatment plant using this data is estimated to be $35 million. This would result in an average estimated cost of $2,200 per customer per year. Since the City's hexavalent chromium levels are below the former MCL, the City does not intend to install BATs for hexavalent chromium at this time.

2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD):

2,3,7,8-TCDD, often shortened to "dioxin", is a highly toxic and persistent environmental pollutant. It's a colorless solid with no odor, and it's usually formed as a byproduct of burning processes or organic synthesis. TCDD is known for its toxic and carcinogenic effects on animals, and it is considered a probable human carcinogen.

People are most likely to be exposed to TCDD through various industrial processes like herbicide and insecticide manufacturing, waste incineration, and metal processing. TCDD can accumulate in the food chain, particularly in animal fat, so exposure can occur through consuming meat, milk, eggs and fish. In some cases, TCDD can be released into the environment through industrial accidents or spills, potentially contaminating soil and water. The US Environmental Protection Agency and National Institutes of Health (NIH) classify TCDD as a human carcinogen, with studies suggesting an increased risk of certain cancers, including lymphomas and lung cancer. Acute exposure to TCDD can cause liver enzyme alterations and potential liver damage. Chronic exposure can lead to alterations in immune function and may increase the risk of cardiovascular disease. Exposure can cause mild neuropathies and potentially affect the

developing nervous system. TCDD can cross the placental barrier and affect fetal development, potentially leading to developmental toxicity. Long term exposure can impact the endocrine system.

There are methods for removing dioxin from water, including filtration through granulated sorbents and ozonization. It was found that the method of filtration through granulated sorbents was most effective at removing dioxins from water: 90-95% of all PCDD and PCDF isomers were removed from water samples. This research also shows that the most toxic congener, 2,3,7,8-TCDD, can be removed effectively and efficiently. An engineering study needs to be performed to determine the cost of removal.

The City water system is in full compliance with federal and state rules for 2,3,7,8-TCDD.

SOURCE	PHG picogram/liter	MCL picogram/liter	RESULT picogram/liter	DATE
Chino 2	0.05	30	3.46	6/7/2023
City 2	0.05	30	2.64	6/7/2023
EW-1	0.05	30	4.92	6/7/2023
Miro 3	0.05	30	2.86	6/7/2023
Baseline Feeder	0.05	30	1.17	6/7/2023

RECOMMENDATIONS FOR FURTHER ACTION:

The drinking water provided to the City of Rialto's residents meets all state and federal drinking water standards established by the State of California, the Division of Drinking Water (DDW), and the U.S. Environmental Protection Agency (USEPA). These standards are stringently set to protect public health and ensure the safety of the water supply.

While the water quality already meets these rigorous standards, certain constituents have been identified in the water at levels significantly below the Maximum Contaminant Levels (MCLs). MCLs are health-based limits established to define "safe drinking water" and ensure that no adverse health effects occur due to long-term exposure.

Although the levels of these identified constituents are well below the MCLs, it is technically possible to further reduce them through additional and costly treatment processes. However, the effectiveness of these processes in achieving significant reductions at such low levels is uncertain. Moreover, the potential health benefits of these further reductions are unclear and may not be quantifiable, as the current levels already pose minimal risk to public health.

Given the substantial costs associated with additional treatment, the uncertainty of its effectiveness, and the lack of clear and quantifiable health benefits at these already low levels, no further action to reduce the levels of these constituents is proposed at this time. The current water treatment processes are sufficient to ensure the safety and quality of the drinking water for the City of Rialto's residents.

REFERENCES:

1. Excerpt from California Health and Safety Code, Section 116470(b).