



City of  
**Santa  
Monica**

WATER RESOURCES DIVISION

# ANNUAL WATER QUALITY REPORT

JUNE 2024



TO DOWNLOAD THIS REPORT VISIT

[SANTAMONICA.GOV/TOPIC-EXPLAINERS/YOUR-GUIDE-TO-WATER](https://santamonica.gov/topic-explainers/your-guide-to-water)

## Dear Community Members,

On behalf of the City of Santa Monica, I am pleased to present the 2024 Annual Drinking Water Quality Report which provides a summary of water quality data for the year of 2023. Throughout the year, Santa Monica Water has met and exceeded all federal and state drinking water standards established by the United States Environmental Protection Agency and the State Water Resources Control Board, Division of Drinking Water (DDW).

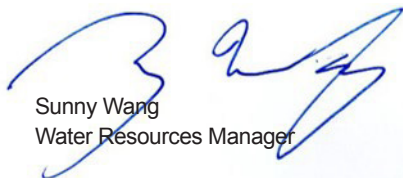
The City's Water Resources Division strives to consistently supply its residents with safe, high-quality, and sustainably sourced drinking water. Santa Monica's water is monitored daily through the management of reservoirs, treatment and distribution system operations, and extensive testing in City laboratories. Beyond ensuring the safety of our drinking water, we are dedicated to providing a climate resilient water supply to residents now and for years to come. Driven by our 2018 Sustainable Water Master Plan, the City continues to reduce reliance on imported water by developing sustainable and drought resilient alternative water supplies, expanding local groundwater production within sustainable yield limits, and implementing water conservation efforts to permanently reduce water demand.

The completion of the Arcadia Water Treatment Plant Expansion and Olympic Well Field Restoration Projects this year will further enhance sustainable groundwater management, restore water quality in the Olympic Sub-basin, and reduce the city's reliance on imported water. We are also near 50% completion in our advanced water meter retrofit project that provides each customer with real time water use data and leak detection capabilities to increase water use efficiency. Santa Monica's sustainability goals are not possible without the help and support of the community; we can continue successful water conservation efforts through rebate programs, outdoor watering restrictions, and mindful water consumption within our everyday routines. It is essential to carry on with efficient water use to help mitigate the effects of climate change on our water supply.

The City continues to invest in our water infrastructure through new water supply projects, advanced treatment technologies, and infrastructure upgrades, all culminating in a healthy and sustainable water supply portfolio for the community.

On behalf of the City of Santa Monica Public Works Department and the employees of the Water Resources Division, thank you for allowing us to serve you.

Sincerely,



Sunny Wang  
Water Resources Manager

*The City of Santa Monica Water Resources Division values transparency, we hope that you find this report clear and easy to understand. If you have any questions, please call us at (310) 434-2672.*

*El Departamento de Recursos de Agua de la ciudad de Santa Monica valora una gestión transparente; por consiguiente, esperamos que encuentre este informe claro y fácil de entender. Si usted tiene alguna pregunta, por favor comuníquese al (310) 434-2672.*

## Santa Monica's Water Source And Treatment System



*Granular Activated Carbon filters as part of new treatment plant expansion.*

The City of Santa Monica currently obtains up to 75% of its water from local groundwater wells within the City and in West Los Angeles. The City extracts its water from three sub-basins within the Santa Monica Basin (Charnock, Olympic, and Arcadia Sub-basins), with the Charnock Sub-basin being a local supply since 1924!

Over 20 years ago, Methyl tert-Butyl Ether (MTBE) and tert-Butyl Alcohol (TBA), compounds once used as gasoline additives, were detected in three of the Charnock Sub-basin wells. These contaminants found their way into the groundwater via Leaking Underground Storage Tanks from various gasoline stations within the Charnock Sub-basin. In response, the City of Santa Monica established the Charnock Well Field Restoration Project. The treatment from this project uses virgin Granular Activated Carbon (GAC) filtration, from coconut shells, to successfully treat MTBE and TBA concentrations to levels well below the Maximum Contaminant Level (MCL) of 5 ppb.

### TO PUT THESE UNITS INTO CONTEXT:

One part per billion (ppb)	= 1 second in 31.7 years
	= 1 teaspoon in 1.3 million gallons
One part per million (ppm)	= 1 second in 11.6 days
	= 1 teaspoon in 1,302 gallons



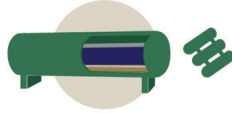


## SANTA MONICA WATER TREATMENT PROCESS



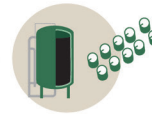
### Charnock Well Field

Charnock Wells  
Groundwater contaminated with the gasoline additive MTBE is pumped up from 400 feet below ground surface.



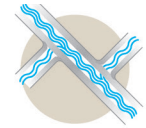
### Greensand and Filtration

The well water is filtered through greensand media to remove iron and manganese which would foul the carbon filters.



### GAC Filtration

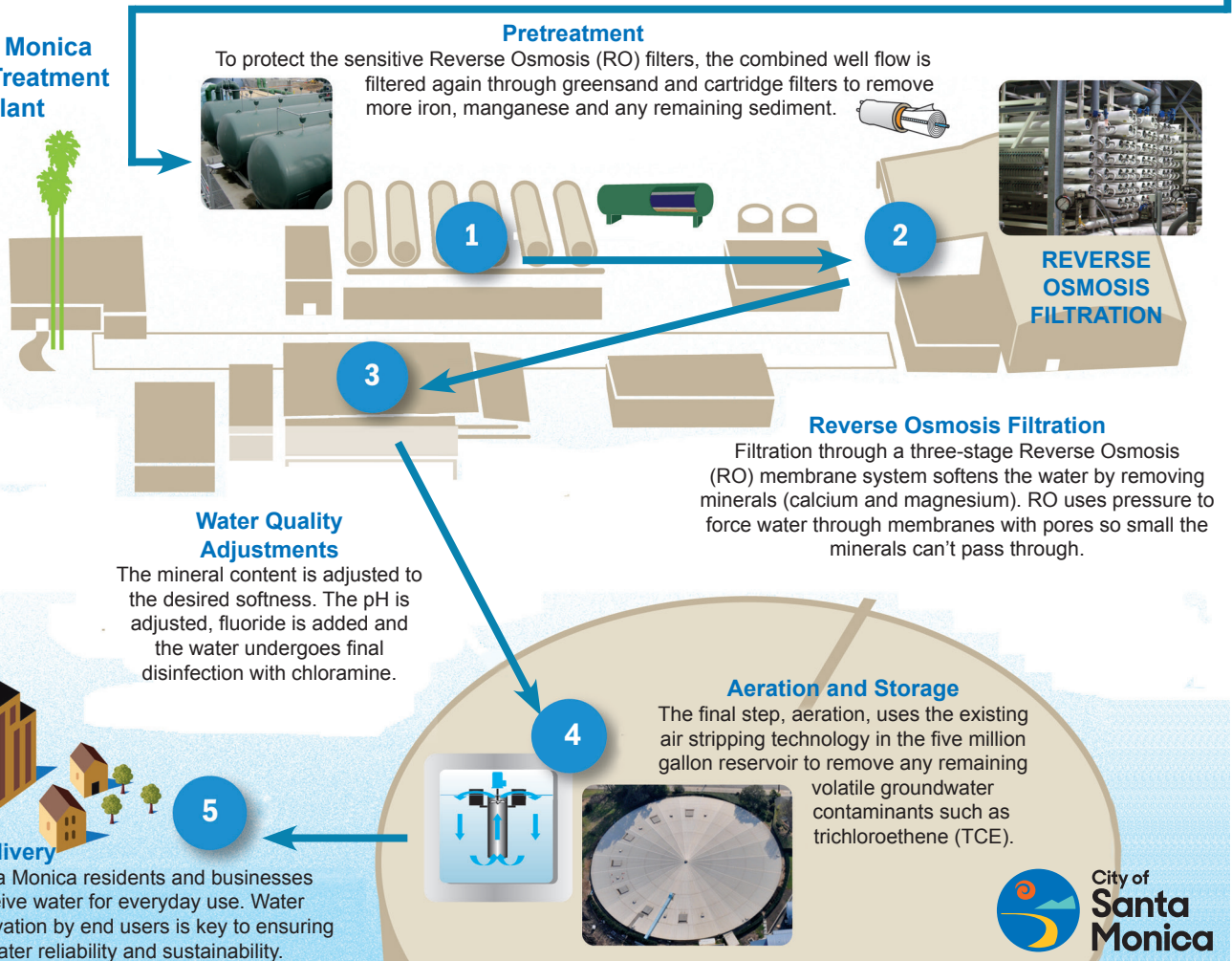
The MTBE is removed by filtering through Granular Activated Carbon (GAC) filters.



### Pump to Treatment Plant

The filtered water is combined with the flow of other wells and pumped to the Santa Monica Water Treatment Plant.

### Santa Monica Water Treatment Plant



The treated water from the Charnock Well Field is then sent to the Arcadia Treatment Plant, and along the way it blends with water from the Olympic and Arcadia Sub-basin wells. Once the water arrives at the Arcadia Treatment Plant, it undergoes a treatment process that includes Iron/Manganese removal, filtration, Reverse Osmosis (RO) softening, aeration, disinfection, and fluoridation.

Softening is the process of removing scale-forming calcium and magnesium from hard water. RO performs softening by forcing hard water through membranes with very small pores, sized from 0.0001 - 0.001 micrometers.

The remaining 25% of Santa Monica's drinking water is purchased from Metropolitan Water District (MWD). Treated MWD water is blended with our locally produced water, and then distributed to our residents. MWD imports water from two separate sources. One is the Colorado River water, which is delivered from Lake Havasu through a 242-mile-long aqueduct and originates as snowmelt from mountainous regions in Utah, Wyoming, and Colorado. The second is from the State Water Project, which is delivered through the 441-mile-long California Aqueduct and originates in the Sacramento-San Joaquin Delta. MWD water is filtered at their treatment plants and undergoes extensive treatment before entering Santa Monica's water system.



*The California Aqueduct in the Central Valley.*

For more information about the City's treatment facilities, please call the Water Resources Division (see back cover for contact information).

## Background on Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from

human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.\*\*
- Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants that can be naturally occurring or be the result of oil and gas production and mining activities

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the California State Water Resources Control Board (State Board) prescribe regulations that limit the concentration of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

*\*\* You can help protect source water purity by controlling what enters storm drains. The following site provide guides on how you can protect Drinking Water Sources:*

[www.epa.gov/sourcewaterprotection/easy-things-you-can-do-protect-drinking-water-sources](http://www.epa.gov/sourcewaterprotection/easy-things-you-can-do-protect-drinking-water-sources).

*To report storm drain pollution, please contact the City's Wastewater Department. See back cover for contact information.*

---

*\*Contact information is available on the last page of this report.*

---

*\*Contact information is available on the last page of this report.*



## Source Water Vulnerability Assessments

Between 2000 and 2012, the California State Water Resources Control Board, Division of Drinking Water (DDW) completed Source Water Vulnerability Assessments for all the City's groundwater wells. The assessments are required for all water utilities nationwide to evaluate the vulnerability of drinking water sources for "possible contaminating activities." Vulnerabilities most associated with contamination include commercial, industrial, urban runoff, and municipal activities. Based on the vulnerability assessments, Santa Monica Wells #3 and #4 located mid-city, Arcadia Wells #4 and #5, and Charnock Wells #13, #16, #18, #19 and #20, located in West L.A. are considered most vulnerable to commercial, industrial, residential, and municipal activities. Santa Monica Well #1, located on the north side of the city, Wells #3 and #4, and the Arcadia Wells are considered most vulnerable by their proximity to sewer collection systems, although monthly analyses have detected no related contamination.

For more information, please contact the Water Resources Division.\*

In March and June 2012, MWD completed a source water assessment of its Colorado and State Project supplies. Based upon the vulnerability assessments, the Colorado River and State Project supplies are most vulnerable to contamination resulting from recreation, urban/storm water runoff, increasing urbanization in the watershed, and wastewater.

A copy of the assessment can be obtained by contacting MWD (see back cover for contact information).

## Santa Monica's Drinking Water Quality

Permission and oversight to operate a community water system is granted annually by the DDW and the USEPA. Santa Monica's water supply undergoes constant field and laboratory testing to ensure the highest water quality before reaching your tap. The water is sampled and analyzed daily, weekly, monthly, quarterly, semi-annually, annually, and triennially. In addition, our water quality management practice includes ensuring optimum performance of all assets associated with water production and distribution. This includes the source wells, treatment plants, distribution system, and reservoirs. Managing reservoirs to meet varying demand and testing the water at over 100 locations throughout the City's distribution system monthly are just two examples of how water quality goals are maintained.

We look for more than 100 substances including microorganisms, pesticides, herbicides, asbestos, lead, copper, petroleum-based products, and by-products of industrial and water treatment processes. As a result, we conduct more than 8,000 laboratory tests each year.

\*Contact information is available on the last page of this report.



Our state certified laboratory perform routine tests to ensure clean and healthy drinking water.

## Water Quality Data Tables

Santa Monica Water continues to meet and exceed all USEPA and State Drinking Water Health Standards. The following data tables compare our water quality with Drinking Water Health Standards. The data is organized by source of water in two categories, each with two sub-parts:

### LOCAL GROUNDWATER

- Arcadia Treatment Plant: Collects water from 9 wells, completes treatment, and sends to distribution.
- Santa Monica Well #1: Treats supply at the source and pumps directly into distribution.

### METROPOLITAN WATER DISTRICT (MWD)

Treatment Plants from where Santa Monica receives treated water.

- Weymouth Plant
- Jensen Plant

The results are presented in two tables: Primary Drinking Water Quality Results and Secondary Drinking Water Quality Results. The primary results cover contaminants that may affect the public's health. These contaminants include hazardous chemicals, metals, bacteria, and radioactivity. The secondary results cover parameters that may affect the aesthetics of the water, such as taste, appearance, and odor. These parameters include turbidity, minerals, and pH among others.

For questions regarding water quality, call the Water Resources Division (see back cover for contact information).

\*Contact information is available on the last page of this report.

SUMMARY OF RESULTS FOR PRIMARY DRINKING WATER STANDARDS FOR 2023

PARAMETER	PHG/ {MCLG}/ {MRDLG}	State MCL/ {MRDL}	LOCAL WELL WATER Arcadia Plant		SM WELL #1(a)		IMPORTED SURFACE WATER Jensen Plant		IMPORTED SURFACE WATER Weymouth Plant		Dates Sampled if other than 2023(b)	Meets Std	MAJOR SOURCES IN DRINKING WATER
			Average	Range	Average	Range	Average	Range	Average	Range			
<b>PRIMARY DRINKING WATER STANDARDS (MANDATORY HEALTH-RELATED STANDARDS)</b>													
<b>Clarity</b>													
Maximum Turbidity (NTU)	NS	95% < 0.3	NA	NA	NA	NA	0.07	100% ≤ 0.3	0.06	100% ≤ 0.3		Y	Soil runoff
<b>Microbiological</b>													
Total Coliform Bacteria (% positive samples/month)	[0]	5%	Citywide Highest Monthly: 1.60% 0 Range: ND - 1.60%				No violations					Y	Naturally present in the environment
Fecal Coliform/E. Coli	[0]	(c)	Citywide Maximum: 0 Positive Samples									Y	Human and animal fecal waste
<b>Organic Chemical</b>													
Methyl tert-Butyl Ether (MTBE) (ppb)	13	13(5*)	ND	ND	ND	ND	ND	ND	ND	ND		Y	Leaking underground storage tanks
Trichloroethylene (ppb)	1.7	5	0.5	03 - 0.7	ND	ND	ND	ND	ND	ND		Y	Discharge from metal degreasing sites
1,2,3-Trichloropropane (TCP) (ng/L)	0.7	5	ND	ND	ND***	ND***	ND	ND	ND	ND	2021***	Y	Discharge and leaching from industrial/agricultural, and hazardous waste sites used as cleaning solvent for paint, varnish, and degreasing; pesticide by product
<b>Disinfection</b>													
<b>Byproducts &amp; Residuals</b>													
Total Trihalomethanes (ppb)	NS	80	Citywide LRAA: 26.8				Range: 6.5 - 49.4					Y	By-product of drinking water chlorination
Haloacetic Acids (ppb)	NS	60	Citywide LRAA: 6.5				Range: ND - 12.8					Y	By-product of drinking water chlorination
Total Chlorine/Chloramines (ppm)	{4}	{4}	Citywide Average: 2.08				Range: ND - 3.3					Y	Drinking water disinfectant added for treatment
Bromate (ppb)	0.1	10	NA	NA	NA	NA	7.6**	ND - 14	2.4**	ND - 12		Y	By-product of drinking water ozonation
Total Organic Carbon (ppm)	N/A	TT	NA	NA	NA	NA	2.1**	1.4 - 2.6	2.4**	1.8 - 3.0			
<b>Inorganic Chemicals</b>													
Aluminum (ppb)	600	1000 (200*)	ND	ND	ND***	ND***	ND**	ND - 83	115**	ND - 71	2022***	Y	Erosion of natural deposits; used in water treatment process
Arsenic (ppb)	0.004	10	ND	ND	ND***	ND***	ND	ND	ND	ND	2022***	Y	Erosion of natural deposits
Barium (ppm)	2	1	0.01	0.01	0.04***	0.04***	ND	ND	ND	ND	2022***	Y	Discharge from oil and metal industries; Erosion of natural deposits
Chromium (ppb)	{100}	50	ND	ND	ND***	ND***	ND	ND	ND	ND	2022***	Y	Discharge from steel and pulp mills; natural deposits erosion
Chromium 6 (ppb)	0.02	NS	0.1	0.1	1.7***	1.7***	ND	ND	ND	ND	2022***	Y	Naturally occurring; industrial waste discharge
Copper (d) (ppm)	0.3	AL=1.3 (1.0*)	Citywide, 90th percentile: 0.20				0 sites out of 35 exceeded the AL				2022	Y	Corrosion of household plumbing systems
Fluoride After Treatment (ppm)	1	2	Control Range: 0.6 - 1.2				Citywide Range: 0.6 - 1.0					Y	Water additive for dental health
Lead (d) (ppb)	0.2	AL=15	Citywide, 90th percentile: 2.10				0 sites out of 35 exceeded the AL (d)				2022	Y	Corrosion of household plumbing systems
Nitrate (as N) (ppm)	10	10	0.3	0.2 - 0.3	2.8	2.8	1.0	1.0	0.8	0.8		Y	Runoff from fertilizer use; leaching from sewage; erosion of natural deposits
Perchlorate (ppb)	1	6	ND	ND	0.7***	0.7***	ND	ND	ND	ND	2022***	Y	Industrial waste discharge
<b>Radionuclides</b>													
Alpha emitters (pCi/L)	[0]	15	ND	ND	ND	ND	ND	ND	ND	ND		Y	Erosion of natural deposits
Beta/photon emitters (pCi/L)	[0]	50	NA	NA	NA	NA	ND	ND	ND	ND - 6		Y	Decay of natural and man-made deposits
Combined Radium (pCi/L)	[0]	5	ND	ND	ND	ND	ND	ND	ND	ND		Y	Erosion of natural deposits
Uranium (pCi/L)	0.43	20	1.2	1.2	0.8***	0.8***	2	2 - 3	ND	ND - 3	2022***	Y	Erosion of natural deposits

KEY TO ABBREVIATIONS

**PDWS** = Primary Drinking Water Standards are MCLs, MRDLs, and Treatment Techniques TTs for contaminants that affect health, along with their monitoring and reporting requirements.

**PHG** = Public Health Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

**MCLG** = Maximum Contaminant Level Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the

U.S. Environmental Protection Agency.

**MCL** = Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**MRDLG** = Maximum Residual Disinfectant Level Goal is the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control

microbial contaminants.

**MRDL** = Maximum Residual Disinfectant Level is the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**LRAA** = Locational Running Annual Average. The running annual average is based on monitoring location.

**AL** = Regulatory Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**NA** = Not Applicable

**ND** = Monitored for but Not Detected

**NS** = No Standard

**NTU** = Nephelometric Turbidity Units - used to measure cloudiness of drinking water.

**TT** = Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

**ppb** = parts per billion, or micrograms per liter (µg/L)

**ppm** = parts per million, or milligrams per liter (mg/L)

**pCi/L** = picocuries per liter

\* = secondary standard

\*\* = Highest Running Average (RAA)

\*\*\*= Santa Monica Well #1 offline in 2023 for maintenance purposes. For reporting purposes this information is from 2021 or 2022.

(a) = SM Well#1 is pumped into a transmission line, is blended with Imported Surface Water and enters the system at 19th St. & Idaho Ave.

(b) = The City is not required to test for every parameter each year. If indicated, data is from a previous year.

(c) = The E. coli MCL is based on routine and repeat samples testing positive for coliforms and/or E. coli or failure to collect required repeat samples. Fecal Coliform/E. Coli constitutes an acute MCL violation. No Level 1 Assessments or MCL violations occurred for 2023.

(d) = The MCL has been replaced with a treatment technique requiring agencies to optimize corrosion control. Results given are from first draw, at-the-tap monitoring performed every three years.

FOR ADDITIONAL WATER QUALITY QUESTIONS CONTACT THE LEAD CHEMIST, CLEMENT DO, AT (310) 434-2672.

**SUMMARY OF RESULTS FOR SECONDARY DRINKING WATER STANDARDS FOR 2023**

PARAMETER	PHG/ [MCLG]	State MCL	LOCAL WELL WATER Arcadia Plant		SM WELL #1(a)		IMPORTED SURFACE WATER Jensen Plant		IMPORTED SURFACE WATER Weymouth Plant		Dates Sampled if other than 2023(b)	Meets Std	MAJOR SOURCES IN DRINKING WATER
			Average	Range	Average	Range	Average	Range	Average	Range			
<b>SECONDARY DRINKING WATER STANDARDS (AESTHETIC STANDARDS)</b>													
<b>Chemical Parameters</b>													
Chloride (ppm)	NS	500	26.5	25 - 28	112	112	53	48 - 58	44	34 - 55	2022***	Y	Runoff/leaching from natural deposits; industrial wastes
Color (units)	NS	15	<5	<5	<5	<5 - 8	1	1	1	1		Y	Naturally-occurring organic materials
Iron (ppb)	NS	300	24	ND - 48	6.8	6.8	ND	ND	ND	ND		Y	Leaching from natural deposits; industrial wastes
Manganese (ppb)	NS	50	ND	ND	5.6	5.6	ND	ND	ND	ND		Y	Leaching from natural deposits
Odor- Threshold (units)	NS	3	<1	<1	<1	<1	2	2	2	2		Y	Naturally-occurring organic materials; chlorine
Specific Conductance (µmho/cm)	NS	1600	341	317 - 354	1346	1339 - 1353	591	578 - 604	432	357 - 507		Y	Substances that form ions when in water; seawater influence
Sulfate (ppm)	NS	500	53	51-55	257	257	104	95 - 112	62	51 - 72		Y	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	NS	1000	207	204 - 209	947***	947***	362	357 - 367	252	209 - 296		Y	Runoff/leaching from natural deposits
Turbidity (NTU)	—	5	0.07	0.05 - 0.11	0.17	0.14 - 0.20	ND	ND	ND	ND		Y	Soil runoff

<b>ADDITIONAL PARAMETERS</b>														
Alkalinity (ppm)	NS	NS	77	70 - 94	337	337	94	85 - 102	72	65 - 78	2022***			
Boron (ppb)	NS	NL=1000	110	110	220***	220***	190	190	140	140				
Calcium (ppm)	NS	NS	25	22 - 27	133	133	40	39 - 40	24	20 - 28				
Hardness (as CaCO3) (ppm)	NS	NS	104	98 - 118	582	582	146	138 - 153	102	81 - 122				
Magnesium (ppm)	NS	NS	8.4	8.4	65***	65***	11	10 - 12	10	7.8 - 13				
pH (units)	NS	NS	8.5	8.2 - 8.6	7.3	7.3 - 7.4	8.4	8.2 - 8.6	8.6	8.6				
Potassium (ppm)	NS	NS	ND	ND	4.1***	4.1***	2.5	2.4 - 2.6	2.8	2.6 - 3.0				
Radon (pCi/L)	NS	NS	ND	ND	389***	389***	ND	ND	ND	ND				
Sodium (ppm)	NS	NS	23	23	89***	89***	64	60 - 38	47	39 - 55				
1, 4-Dioxane (ppb)	NS	NL=1	ND	ND	ND***	ND***	NA	NA	NA	NA				
N-Nitrosodimethylamine (NDMA) (ppt)	3	NL=10	NA	NA	NA	NA	3.5	3.5	ND	ND				
tert-Butyl Alcohol (TBA) (ppb)	NS	NL=12	ND	ND	NA	NA	ND	ND	ND	ND				

2022***
2022***
2022***
2022***
2022***
2022***

**KEY TO ABBREVIATIONS**

- PHG** = Public Health Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
- MCLG** = Maximum Contaminant Level Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.
- MCL** = Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- NL** = Notification Level is a health based advisory level established by Division of Drinking Water (DDW) for chemicals in drinking water that lack maximum contaminant levels, but warrants notification.
- NA** = Not Applicable
- NS** = No Standard
- ND** = Monitored for, but Not Detected
- NTU** = Nephelometric Turbidity Units - used to measure cloudiness of drinking water.
- ppb** = Parts per billion, or micrograms per liter (ug/l)
- ppm** = Parts per million, or milligrams per liter (mg/l)
- ppt** = Parts per trillion, or nanograms per liter (ng/l)
- umho/cm** = micromhos per centimeter
- <** = less than
- \*\*\*** = Santa Monica Well #1 offline in 2023 for maintenance purposes. For reporting purposes this information is from 2021 or 2022.
- (a)** = SM Well#1 is pumped into a transmission line, is blended with Imported Surface Water and enters the system at 19th St. and Idaho Ave.
- (b)** = We are not required to test for each parameter every year. If indicated, data is from a previous year.
- (c)** = MWD has developed a flavor-profile analysis method that can more accurately identify odor occurrences.

**FOR ADDITIONAL WATER QUALITY QUESTIONS, CONTACT CLEMENT DO, LEAD CHEMIST AT (310) 434-2672**







Operator performing preventative maintenance on plant equipment.

## 1,4-Dioxane and Drinking Water

1,4-Dioxane is a synthetic contaminant that has leached into numerous groundwater sources in Southern California. It is a colorless liquid solvent and solvent stabilizer used in industrial and commercial applications. 1,4-Dioxane is an unregulated contaminant, meaning it has not completed the regulatory standard setting process to be prescribed a maximum contaminant level (MCL). However, it has a notification level (NL) as a precautionary measure that represents a level of contamination that is not a health risk but justifies notification to the public. 1,4-Dioxane is classified as a probable carcinogen believed to cause health effects after long-term exposure or ingestion. In 2023, the City's newly expanded Arcadia Water Treatment Plant implemented an Ultraviolet Advanced Oxidation Process (UVAOP). The UVAOP uses UV light and hydrogen peroxide to effectively break down 1,4-dioxane into non-toxic molecular components.

## Facts about Radon

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. You should

*\*Contact information is available on the last page of this report.*

pursue radon removal for your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your state radon program (1-800-745-7236), the USEPA Safe Drinking Water Act Hotline (1-800-426-4791), or the National Safety Council Radon Hotline (1-800-767-7236).

Information is also available at the California EPA website:

<https://www.cdph.ca.gov/Programs/CEH/DRSEM/Pages/EMB/Radon/Radon-Testing.aspx>

## Per- and Polyfluoroalkyl Substances (PFAS)

PFAS are a group of compounds containing carbon to fluorine chemical bonds, one of the strongest in organic chemistry. They are manufactured and used to enhance repellency of water, grease, and soil in consumer products; thus, they are very stable and resistant to environmental degradation. If exposed, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonate (PFOS) are readily absorbed but not readily eliminated from the human body. According to the State Water Resources Control Board (SWRCB) potential health concerns, long-term exposure can cause harmful health effects; suppress the immune system; disrupt the thyroid function, increased liver weight; and can lead to cancer.\*

California State Water Resources Control Board, Division of Drinking Water (DDW) has issued drinking water notification levels (NLs) and response levels (RLs) for PFAS. According to OEHHA recommendations, these levels provide some health risk protection in sensitive populations and demonstrate low cancer risk with 70-year lifetime exposure.

If a utility exceeds the RL(s), regulations require the water source be taken out of service, provide treatment, or notify customers.

*\* The City of Santa Monica is still actively monitoring for PFAS even if not an annual screen.*

## Perfluoroalkyl and Polyfluoroalkyl Substances

PFAS Compound	Notification Level (ppt)	Response Level (ppt)
Perfluorooctanoic Acid (PFOA)	5.1ppt	10 ppt
Perfluorooctanesulfonic Acid (PFOS)	6.5 ppt	40 ppt
<i>Parts per trillion (ppt) = 1 second in 31,709.8 years</i>		

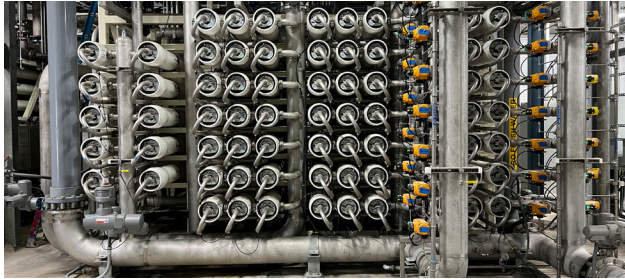
Apart from drinking water, PFOA and PFOS exposure can occur from other sources: firefighting foaming/fire preventing agents; products that repel water, grease, and soil.

*\*Contact information is available on the last page of this report.*



In April 2019, the SWRCB investigated source water wells in California most vulnerable to PFAS contamination. This included those near airports and landfills, and later those near secondary sources of PFAS activities. SWRCB did not require Santa Monica to sample its sources. However, since 2019, City staff proactively monitors and samples the City's Drinking Water sources for PFAS and it has not been detected in our drinking water supply. All PFAS samples analyzed by an outside laboratory were Non-Detect (ND).

Additionally, granular activated carbon (GAC) and reverse osmosis (RO), both part of the City's treatment process, are effective at removing many PFAS compounds.



*Newly upgraded reverse osmosis system.*

## Answers to the Most Commonly Asked Questions About Your Tap Water

### What affects the taste of my water?

The taste of drinking water is affected by its mineral content, as well as the presence of chloramine, which is used to protect against potential pathogens. Occasionally, pipes can cause a metallic taste when the water has been static in the pipes for many hours.

### How hard is my water?

The water delivered to our customers has an average hardness of 161 ppm. To convert to grains per gallon, divide the hardness in ppm by 17.1. The average hardness in our water is 9.42 grains per gallon.

### What type of disinfectant is in my water?

A low level of chloramine disinfectant is added to your tap water to protect from waterborne pathogens. Chloramine is formed when a small amount of ammonia is added to chlorinated water. This type of disinfectant is very stable and reduces the formation of disinfection by-products in your water. These by-products are an unintended consequence of the disinfection process but are far below the allowable limit in Santa Monica water. We carefully monitor the amount of the chloramine disinfectant to protect the quality of your water.

### Is the City's water fluoridated?

The City of Santa Monica is required by state law to add fluoride to drinking water to help prevent dental decay in

consumers. Current regulations require fluoride levels in the treated water be maintained between 0.6 to 1.2 ppm with an optimum dose of 0.7 ppm. Our monitoring showed that fluoride levels in the treated water distribution system averaged 0.74 ppm.

According to the American Dental Association and CDC, it is safe to use optimally fluoridated water for preparing infant formula. If an infant is primarily fed infant formula prepared with fluoridated water, there may be an increased chance for mild enamel fluorosis, but enamel fluorosis does not affect the health of the infant or the health of the infant's teeth. To lessen this chance, deionized, purified, distilled or demineralized bottled water can be used. If you have additional questions about fluoride, contact your health provider.

Additional information can be found at the State Board website: [www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/Fluoridation](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation) or the CDC website: [www.cdc.gov/fluoridation](http://www.cdc.gov/fluoridation).



*Recently added pump station to meet demand of the City's growing community.*

### What about lead from my plumbing?

The lead contamination that made the news in Flint, Michigan is highly unlikely in Santa Monica. The quality of our source water is much different than Flint's, and our corrosion control processes comply with state drinking water regulations. A pool of "high risk" homes, which were plumbed before the ban on lead in solder, have been tested every three years since 1992 and has continually indicated there is little tendency of our water to leach lead out of plumbing. Our laboratory chemists closely monitor lead results to ensure healthy drinking water, and to evaluate and determine Santa Monica's water system has achieved "optimized corrosion control". The next round of testing is scheduled for 2025.

If your home plumbing contains lead, there is a limited potential for lead to leach into your water. Fortunately, the minerals in our water help to protect against pipe corrosion, greatly reducing the potential of lead entering the water. These minerals form a film called "scale" that prevents

water from coming into direct contact with home plumbing. The most common place to find lead in household plumbing is in chrome-plated brass faucets and fixtures. California enacted stricter regulations for plumbing fixtures in 2010 further reducing the potential for lead leaching from household plumbing.

If present, however, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Santa Monica Water Resources Division is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants. If you are concerned about lead in your water, you may wish to have your water tested. To get your water tested, please call the Water Quality Office. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline\* or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## Do I really need to buy a water filter or home treatment system?

The decision to buy a water filter or home treatment system is a matter of personal preference. Our water meets or exceeds rigid state and federal health standards. If you decide to buy a filter or system, be a smart shopper and do some homework. Any treatment device you buy should be registered with the National Sanitation Foundation (NSF). Contact NSF toll free at (800) 673-6275 or visit [www.nsf.org](http://www.nsf.org).

## What about bottled water?

Again, the decision is yours. You may find that keeping a pitcher of tap water in your refrigerator is a low-cost, water-thrifty alternative to buying more expensive bottled water, and it's far better for the environment. Even when the bottle is reused or recycled, the petrochemicals used in creating the bottle and the transportation of the water have a significant impact on the environment.

## Water Conservation

The City of Santa Monica has developed a sustainable water supply and taken responsible steps to improve water conservation amid a changing climate. The City provides many programs and incentive for our customers to conserve and improve the City's water supply for future generations. To continue meeting our water conservation goals, the City urges our residents to continue their conservation efforts because small changes make a difference. For more information and water saving tips, please visit [www.santamonica.gov/topic-explainers/water-conservation](http://www.santamonica.gov/topic-explainers/water-conservation).

\*Contact information is available on the last page of this report.

## Sustainability

The City of Santa Monica offers programs and incentives for environmentally friendly measures for the community. For more information, please call or visit the Office of Sustainability website at [www.santamonica.gov/categories/programs/sustainability-and-the-environment](http://www.santamonica.gov/categories/programs/sustainability-and-the-environment).



*Santa Monica Pier*

## We need you!

Public involvement is fundamental to ensuring that we are meeting our water supply demand, water quality goals, and the highest customer service level. We welcome your feedback and invite you to get involved with the City of Santa Monica in the following ways:

- Participate in conservation events
- Attend City Council and community meetings
- Sign up for the newsletters and alerts
- Please let us know how we are doing.

For information on these opportunities, please call Water Resources and the Office of Sustainability and the Environment. For a digital copy of this report, please visit:

<https://www.santamonica.gov/departments/public-works/office-of-sustainability-and-the-environment>

\*Contact information is available on the last page of this report.



## Where Can I Get More Information?

City of Santa Monica Public Works and  
Water Resources Division Offices:

Water Resources/Water Quality .....	(310) 434-2672
24-Hour Water Emergencies .....	(310) 434-2672
Wastewater .....	(310) 458-8532
Lead Chemist.....	(310) 434-2672
Billing Office.....	(310) 458-8224

Visit our website:

<https://www.santamonica.gov/topic-explainers/your-guide-to-water>

Santa Monica City Council Meetings:

2nd & 4th Tuesdays of each month  
Council Chamber  
1685 Main Street, Santa Monica

[www.santamonica.gov/departments/city-clerks-office](http://www.santamonica.gov/departments/city-clerks-office)

City of Santa Monica Office of Sustainability and  
the Environment ..... (310) 458-2213  
Conservation Office ..... (310) 458-8972

[www.santamonica.gov/categories/programs/sustainability-and-the-environment](http://www.santamonica.gov/categories/programs/sustainability-and-the-environment)

Metropolitan Water District (MWD)

of Southern California..... (213) 217-6000

Toll Free..... (800) 354-4420

[www.mwdh2o.com](http://www.mwdh2o.com)

California State Water Resources Control Board

Division of Drinking Water .....(818) 551-2004

[www.waterboards.ca.gov/drinking\\_water/](http://www.waterboards.ca.gov/drinking_water/)

U.S. Environmental Protection Agency

Office of Ground Water & Drinking Water

Safe Drinking Water Hotline .....(800) 426-4791

[www.epa.gov/safewater/dwhealth.html](http://www.epa.gov/safewater/dwhealth.html)

[water.epa.gov/drink/guide](http://water.epa.gov/drink/guide)



City of  
**Santa  
Monica**

**Water Resources Division**

P.O. Box 2200, 1685 Main Street  
Santa Monica, CA 90406-2200

*This brochure is printed with vegetable-based inks  
on paper made from recycled paper.*

City of Santa Monica Water Resources Division  
Summary of Results for Primary and Secondary Drinking Water Standards for 2022

PARAMETER	PHG/ [MCLG]/ {MRDLG}	State MCL/ {MRDL}	LOCAL WELL		SM WELL #1 (a)		IMPORTED SURFACE		IMPORTED SURFACE		Dates Sampled if other than 2023(b)	MAJOR SOURCES IN DRINKING WATER
			WATER Plant Average Range	Arcadia	Average	Range	WATER Plant Average Range	Jensen	WATER Weymouth Plant Average	Range		
<b>Clarity</b>												
Maximum Turbidity (NTU)	NS	95% <0.3	NA	NA	NA	NA	0.07	100% ≤ 0.3	0.06	100% ≤ 0.3		Soil runoff
<b>Organic Chemicals</b>												
Methyl tert-Butyl Ether (MTBE) (ppb)	13	13(5*)	ND	ND	ND	ND	ND	ND	ND	ND		Leaking underground storage tanks
Trichloroethylene (ppb)	1.7	5	0.5	0.3 - 0.7	ND	ND	ND	ND	ND	ND		Discharge from metal degreasing sites
1,2,3-Trichloropropane (TCP) (ng/L)	0.7	5	ND	ND	ND***	ND***	ND	ND	ND	ND	2022***	
<b>Disinfection Byproducts &amp; Residuals</b>												
Bromate (ppb)	0.1	10	NA	NA	NA	NA	7.6 **	ND - 14	2.4 **	ND - 12		By-product of drinking water ozonation
Total Organic Carbon (ppm)	NA	TT	NA	NA	NA	NA	2.1 **	1.4 - 2.6	2.4 **	1.8 - 3.0		
<b>Inorganic Chemicals</b>												
Aluminum (ppb)	600	1000 (200*)	ND	ND	ND***	ND***	ND **	ND - 83	115**	ND - 71	2022***	Erosion of natural deposits; used in water treatment process
Arsenic (ppb)	0.004	10	ND	ND	ND***	ND***	ND	ND	ND	ND	2022***	Erosion of natural deposits
Barium (ppm)	2	1	0.01	0.01	0.04***	0.04***	ND	ND	ND	ND	2022***	Discharge from oil & metal industries; erosion of natural deposits
Chromium (ppb)	[100]	50	ND	ND	ND***	ND***	ND	ND	ND	ND	2022***	Discharge from steel and pulp mills; natural deposits erosion
Chromium 6 (ppb)	0.02	NS	0.1	0.1	1.7***	1.7***	ND	ND	ND	ND	2022***	Naturally occurring; industrial waste discharge
Nitrate (as N) (ppm)	10	10	0.3	0.2 - 0.3	2.8	2.8	1	1	0.8	0.8		Runoff from fertilizer use; leaching from sewage; erosion of natural deposits
Perchlorate (ppb)	1	6	ND	ND	0.7***	0.7***	ND	ND	ND	ND	2022***	Industrial waste discharge
<b>Radionuclides</b>												
Alpha emitters (pCi/L)	[0]	15	ND	ND	ND	ND	ND	ND	ND	ND		Erosion of natural deposits
Beta/photon emitters (pCi/L)	[0]	50	NA	NA	NA	NA	ND	ND	ND	ND - 6		Decay of natural and man-made deposits
Combined Radium (pCi/L)	[0]	5	ND	ND	ND	ND	ND	ND	ND	ND		Erosion of natural deposits
Uranium (pCi/L)	0.43	20	1.2	1.2	0.8***	0.8***	2	3-Feb	ND	ND - 3	2022***	Erosion of natural deposits

PARAMETER	PHG/ [MCLG]/ {MRDLG}	State MCL/ {MRDL}	CITYWIDE DISTRIBUTION SYSTEM				Dates Sampled if other than 2023(b)	MAJOR SOURCES IN DRINKING WATER
			WATER Plant Average Range	Arcadia	Average	Range		
<b>Microbiological</b>								
Total Coliform Bacteria (% positive samples/month)	[0]	5%	Citywide Highest Monthly: 1.60% Range: ND - 1.60% No violations					Naturally present in the environment
Fecal Coliform/E. Coli	[0]	(c)	Citywide Maximum: 0 Positive Samples					Human and animal fecal waste
<b>Disinfection Byproducts &amp; Residuals</b>								
Total Trihalomethanes (ppb)	NS	80	Citywide LRAA: 26.8 Range: 6.5 - 49.4					By-product of drinking water chlorination
Haloacetic Acids (ppb)	NS	60	Citywide LRAA: 6.5 Range: ND - 12.8					By-product of drinking water chlorination
Total Chlorine/Chloramines (ppm)	{4}	{4}	Citywide Average: 2.08 Range: ND - 3.3					Drinking water disinfectant added for treatment
<b>Inorganic Chemicals</b>								
Copper (d) (ppm)	0.3	AL=1.3(1.0*)	Citywide 90th percentile: 0.20 0 sites out of 35 exceeded the AL				2022	Corrosion of household plumbing systems
Fluoride After Treatment (ppm)	1	2	Control Range: 0.6 - 1.2 Citywide Range: 0.6 - 1.0					Water additive for dental health
Lead (d) (ppb)	0.2	AL=15	Citywide 90th percentile: 2.10 0 site out of 35 exceeded the AL (d)				2022	Corrosion of household plumbing systems



Table 3: Summary of Results for Secondary Drinking Water Standards for 2022 (Aesthetic Standards)

PARAMETER	PHG/ [MCLG]/ {MRDLG}	State MCL/ {MRDL}	LOCAL WELL		SM WELL #1 (a)		IMPORTED SURFACE WATER		IMPORTED SURFACE WATER		Dates Sampled if other than 2023(b)	MAJOR SOURCES IN DRINKING WATER
			WATER Plant Average Range	Arcadia Plant Average Range	Average Range	Average Range	WATER Plant Average Range	Jensen Plant Average Range	WATER Weymouth Plant Average Range	SURFACE WATER Plant Average Range		
<b>Chemical Parameters</b>												
Chloride (ppm)	NS	500	26.5	25 - 28	112	112	53	48 - 58	44	34 - 55		Runoff/leaching from natural deposits; industrial wastes Naturally-occurring organic materials Leaching from natural deposits; industrial wastes Leaching from natural deposits Naturally-occurring organic materials; chlorine Substances that form ions when in water; seawater influence Runoff/leaching from natural deposits; industrial wastes Runoff/leaching from natural deposits Soil runoff
Color (units)	NS	15	<5	<5	<5	<5 - 8	1	1	1	1		
Iron (ppb)	NS	300	24	ND - 48	6.8	6.8	ND	ND	ND	ND		
Manganese (ppb)	NS	50	ND	ND	5.6	5.6	ND	ND	ND	ND		
Odor-Threshold (units)	NS	3	<1	<1	<1	<1	2	2	2	2		
Specific Conductance (umho/cm)	NS	1600	341	317 - 354	1346	1339 - 1353	591	578 - 604	432	357 - 507		
Sulfate (ppm)	NS	500	53	51 - 55	257	257	104	95 - 112	62	51 - 72		
Total Dissolved Solids (ppm)	NS	1000	207	204 - 209	947***	947***	362	257 - 367	252	209 - 296	2022***	
Turbidity (NTU)	-	5	0.07	0.05 - 0.11	0.17	0.14 - 0.20	ND	ND	ND	ND		

Table 4: Additional Parameters of Interest

PARAMETER	PHG/ [MCLG]/ {MRDLG}	State MCL/ {MRDL}	LOCAL WELL		SM WELL #1 (a)		IMPORTED SURFACE WATER		IMPORTED SURFACE WATER		Dates Sampled if other than 2023(b)
			WATER Plant Average Range	Arcadia Plant Average Range	Average Range	Average Range	WATER Plant Average Range	Jensen Plant Average Range	WATER Weymouth Plant Average Range	SURFACE WATER Plant Average Range	
Alkalinity (ppm)	NS	NS	77	70 - 94	337	337	94	85 - 102	72	65 - 78	
Boron (ppb)	NS	NL=1000	110	110	220***	220***	190	190	140	140	2022***
Calcium (ppm)	NS	NS	25	22 - 27	133	133	40	39 - 40	24	20 - 28	
Hardness (as CaCO3) (ppm)	NS	NS	104	98 - 118	582	582	146	138 - 153	102	81 - 122	
Magnesium (ppm)	NS	NS	8.4	8.4	65***	65***	11	10 - 12	10	7.8 - 13	2022***
pH (units)	NS	NS	8.5	8.2 - 8.6	7.3	7.3 - 7.4	8.4	8.2 - 8.6	8.6	8.6	
Potassium (ppm)	NS	NS	ND	ND	4.1***	4.1***	2.5	2.4 - 2.6	2.8	2.6 - 3.0	2022***
Radon (pCi/L)	NS	NS	ND	ND	389***	389***	ND	ND	ND	ND	2022***
Sodium (ppm)	NS	NS	23	23	89***	89***	64	60 - 38	47	39 - 55	2022***
1,4-Dioxane (ppb)	NS	NL=1	ND	ND	ND***	ND***	NA	NA	NA	NA	2022***
N-Nitrosodimethylamine (NDMA) (ppt)	3	NL=10	NA	NA	NA	NA	3.5	3.5	ND	ND	
tert-Butyl Alcohol (TBA) (ppb)	NS	NL=12	ND	ND	NA	NA	ND	ND	ND	ND	

All results meet standard.

## **KEY TO ABBREVIATIONS**

**PDWS** = Primary Drinking Water Standards are MCLs, MRDLs, and Treatment Techniques TTs for contaminants that affect health, along with their monitoring and reporting requirements.

**PHG** = Public Health Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

**MCLG** = Maximum Contaminant Level Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**MCL** = Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water.

Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible.

Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**MRDLG** = Maximum Residual Disinfectant Level Goal is the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**MRDL** = Maximum Residual Disinfectant Level is the highest level of a disinfectant allowed in drinking water.

There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**LRAA** = Locational Running Annual Average. The running annual average based on monitoring location.

**AL** = Regulatory Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**NL** = Notification Level is a health based advisory level established by Division of Drinking Water (DDW) for chemicals in drinking water that lack maximum contaminant levels, but warrants notification.

**NA** = Not Applicable

**NS** = No Standard

**ND** = Monitored for, but Not Detected

**NTU** = Nephelometric Turbidity Units – used to measure cloudiness of drinking water.

**TT** = Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water.

**ppb** = parts per billion, or micrograms per liter (ug/l)

**ppm** = parts per million, or milligrams per liter (mg/l)

**ppt** = parts per trillion, or nanograms per liter (ng/l)

**pCi/L** = picocuries per liter

**\*** = secondary standard

**\*\*** = Highest Running Annual Average (RAA)

**\*\*\*** = Santa Monica Well #1 offline in 2023 for maintenance purposes. For reporting purposes this information is from 2021 or 2022.

**umho/cm** = micromhos per centimeter

**<=** less than

**(a)** = SM Well #1 is pumped into a transmission line, is blended with Imported Surface Water and enters the system at 19th St. & Idaho Ave.

**(b)** = The City is not required to test for every parameter each year. If indicated, data is from a previous year.

**(c)** = The E. coli MCL is based on routine and repeat samples testing positive for coliforms and/or E. coli, or failure to collect required repeat samples. Fecal Coliform/E. Coli constitutes an acute MCL violation. No Level 1 Assessments or MCL violations occurred for 2022.

**(d)** = The MCL has been replaced with a treatment technique requiring agencies to optimize corrosion control. Results given are from first draw, at-the-tap monitoring performed every three years.

**(e)** = MWD has developed a flavor-profile analysis method that can more accurately identify odor occurrences.