



THE WONDROUS WORLD of WATER

With a commitment to excellence, Zone 7 Water Agency provides high-quality water for residences and businesses throughout the Tri Valley area. You can be confident that Zone 7 is actively monitoring the quality of the water – and our treatment systems are state-of-the-art.

Zone 7 delivers treated drinking water to four major water retailers, along with a small number of direct customers, serving over a quarter million people in Pleasanton, Livermore, Dublin, and the Dougherty Valley area of San Ramon. Zone 7 also manages the groundwater basin, provides untreated water to local agricultural users and owns and maintains 37 miles of local flood-protection channels, about a third of all the Valley's channels and creeks. Working closely with our partners, we pride ourselves at Zone 7 on doing better than all state and federal health standards. That's why we developed our own Zone 7 goals – setting a higher bar for the quality of our water.

This collaborative approach makes a world of difference in ensuring our water supply is safe, clean and sustainable. Through comprehensive programs of planning, source water protection, treatment and monitoring, Zone 7 has been able to achieve internal water quality goals that are more stringent than regulatory standards. This report represents a combination of strategic investment in advanced treatment infrastructure, rigorous testing, and our commitment to transparency in sharing these results.

Rest assured, all Zone 7 water supplied in 2019 met the regulatory standards set by the state and federal governments and, in almost all cases, the quality was significantly better than required.

2019 Annual CONSUMER CONFIDENCE REPORT



WHERE DOES OUR WATER COME FROM?

Source Water Assessment

Zone 7 Water Agency draws from a diverse portfolio of drinking water sources, including local and imported surface water as well as groundwater from wells. We carefully monitor all these sources to ensure their continued quality and to protect the safety of our water supply.

A source water assessment is conducted on each groundwater well as required by the California State Water Resources Control Board (State Water Board). Sanitary surveys for surface water supplies are conducted every five years. The latest sanitary survey for the California Delta and the State Water Project (SWP) was completed in June 2017.

Protecting our source water is an important part of providing safe drinking water to the public that meets the stringent Zone 7 water quality goals. By monitoring for potential contaminants, we can proactively address threats to water quality. For example, groundwater sources can be vulnerable to releases from chemical/petroleum pipelines, leaking tanks, groundwater contamination plumes, septic tanks, and wastewater-collection systems. Surface water can become contaminated as it travels through the Sacramento and San Joaquin watersheds and the Delta. Zone 7 actively monitors and manages our local groundwater supply, a basin under the cities of Dublin, Livermore, and Pleasanton. Zone 7 administers multiple programs to ensure the protection of groundwater quality relating to water wells, toxic site surveillance, salt and nutrient management.

After leaving the Delta, water is transported to Zone 7 via the South Bay Aqueduct (SBA). The SBA's water quality can become polluted from local cattle grazing, wildlife activities, and recreational activities in the watersheds of the Bethany and Del Valle reservoirs. Zone 7 actively works with state and local partners to provide educational programs, signage, vegetation and grazing management, road design and maintenance, and good housekeeping around rural livestock facilities, such as corrals and watering locations.



Our Primary Water Sources

The water that flows from your tap originated from a number of sources – including snowpack, rainfall and underground aquifers.



IMPORTED SURFACE WATER. More than three-quarters of our water supply originates as Sierra Nevada snowmelt and is conveyed by the SWP through the Delta and then via the SBA.*



LOCAL SURFACE WATER. This is comprised of local rain runoff stored in Del Valle Reservoir.



GROUNDWATER. This supply, carefully managed by Zone 7, is pumped from the aquifer that underlies the Livermore-Amador Valley; water in the aquifer comes from local rainfall and from strategic recharges made with imported water to ensure access during dry years.

** In wet years, we store surplus SWP supplies in local and offsite groundwater basins for use when needed, and for reliability during droughts.*



STAY IN TOUCH

Request copies of any public outreach materials, source water assessment reports or sanitary surveys

Call Gurpal Deol, Water Quality Manager
925-447-0533
gdeol@zone7water.com

Report a spill or dumping

During business hours:
Zone 7 administrative offices at
925-454-5000

After hours:
Water Treatment Plant Operation at
925-447-6704, ext. 1

Claims and incidence reporting

Email claims@zone7water.com
Fax: 925-454-5724

Questions on water quality

Email the Water Quality team:
waterquality@zone7water.com

WHO KEEPS YOUR WATER SAFE?

Zone 7's essential workers are committed to providing you clean water every day. Our highly trained staff at Zone 7 work around the clock to ensure the quality and safety of your water. Our team of water quality technicians, field operators, engineers, planners, and support staff, have worked throughout the COVID-19 pandemic to ensure the Tri Valley community has water available 24/7 – when water plays such a vital role in keeping us protected. Whether it is maintaining flood channels through rainstorms, or ensuring our treatment plants are operating seamlessly, we want to ensure you have no interruptions in service and can rely on us to keep your water flowing for the health and safety of all.

Zone 7 Response to COVID-19

Zone 7 Water Agency is actively monitoring guidance from public health authorities related to the Coronavirus (COVID-19) crisis. We understand there are many questions about COVID-19. First and foremost, we want our customers to know that the safety and reliability of your water is Zone 7's highest priority.

Your Water is Safe to Drink and Use Every Day

The standard treatment and disinfectant processes used for Zone 7 water are designed to be highly effective against viruses, including COVID-19.

The Centers for Disease Control and Prevention states: "The virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use filtration and disinfection, such as those in most municipal drinking water systems, should remove or inactivate the virus that causes COVID-19."



COVID-19 is transmitted person-to-person, not through water, according to the Centers for Disease Control and Prevention. Additional information is available at: www.cdc.gov/coronavirus/2019-ncov/php/water.html

WHAT ARE PFAS AND WHY IS EVERYONE TALKING ABOUT THEM?

PFAS (Per- and Polyfluoroalkyl Substances) Information

PFAS are contaminants of emerging concern that are widely used in the manufacturing of multiple products and are present in many areas of our daily lives, including water. People can be exposed to them through various avenues including food, packaging, air pollution, dust, and drinking water. The health impacts of PFAS on humans are not yet fully understood, but the Environmental Protection Agency (EPA) states: “There is evidence that exposure to PFAS can lead to adverse health outcomes in humans.”

Zone 7 Water Agency tests water supplies for common contaminants, including PFAS – and we proactively take any necessary steps if contaminants are found to exceed certain levels. All water delivered to our customers meets all state and federal regulations, including the new state guidelines for PFAS, and in fact, our water quality is usually even better than required.



Studies in laboratory animals have indicated that exposure to PFAS can cause reproductive and developmental, liver and kidney, and immunological effects, along with tumors. However, studies in humans are not conclusive, with the most consistent findings showing increased cholesterol levels among those who are exposed to the chemical. Other studies have found limited or no evidence that human exposure to PFAS is linked with human disease.

Even though many questions remain about exposure to PFAS and what level of exposure poses a risk to humans, health effects cannot be ruled out. In addition, the chemicals have an ability to bio-accumulate in the human body over time. Thus, the chemicals are considered contaminants of emerging concern by federal and state authorities, and we take all contaminants very seriously at Zone 7.

One place that PFAS have been found to accumulate is in groundwater. Thus, monitoring for PFAS and taking actions to reduce the level of these contaminants is part of Zone 7's comprehensive approach to water quality.



Commonly Used in Products

First commercialized in 1945 by DuPont under the brand name “Teflon,” the PFAS family of chemicals is ubiquitous in modern life. PFAS is the name we use for “per- and polyfluoroalkyl substances,” a large group of man-made substances extensively used since the 1940s in common consumer products designed to be waterproof, stain-resistant, or nonstick. They are also important components of fire-retarding foam and are utilized in various industrial processes.

More than 6,300 different PFAS have been manufactured and used in a variety of industries. Many everyday items used in homes and offices contain PFAS, such as nonstick skillets, clothing, fast-food wrappers, and carpets. People can be exposed through contact with any of these products. After disposal, these products continue to end up in landfills, wastewater, and stormwater. The chemicals can make their way into groundwater and take many years to break down. PFAS-containing firefighting foam, used in military bases, airports, oil refineries, and chemical manufacturing plants, is also a source of environmental contamination.

‘Forever Chemicals’

The very properties that make PFAS chemicals so useful in products, such as resistance to heat, water and oil, also make them problematic when they are introduced into the environment.

These chemicals have one or more carbon-fluorine bonds – the strongest chemical bond in nature – making them extremely stable. Unfortunately, the downside of this stability is they do not break down easily, leading some experts to dub them “forever chemicals.” This makes them challenging and costly to remove from the environment.

Monitoring Water Supplies

Water agencies around the U.S., especially in areas where manufacturing industries are located, have detected PFAS in drinking water supplies. While acknowledging that people are exposed to PFAS in many other ways beyond water, the EPA has issued health advisories for the chemicals in drinking water because they are contaminants of emerging concern.

At Zone 7, protecting public health and safety is the highest priority, which is why we actively monitor for PFAS in groundwater and surface water supplies. While California has not set drinking water standards for these substances at this time, the state is moving toward regulating PFAS, and current rules require water agencies to notify customers if they are detected at certain levels.

Perfluorooctanic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are two of the most widely studied PFAS chemical compounds. California currently has a drinking water notification level of 5.1 nanograms per liter (ng/L), for PFOA and 6.5 ng/L for PFOS (effective August 2019). Agencies are required to respond when levels reach 10 ng/L for PFOA and 40 ng/L for PFOS, based on a running annual average (RAA) of the last four quarters of results (effective February 2020). These are health-based advisory levels established as precautionary measures for contaminants that may be considered candidates to establish drinking water standards, but have yet to undergo or complete the regulatory standard-setting process. When a contaminant is found at concentrations greater than noted levels, certain notification requirements and recommendations apply.

In 2019, Zone 7 did not detect any PFOA or PFOS in its treated surface water supplies, which make up the majority of total water delivered to customers.

No PFAS have been detected in Zone 7's Hopyard wellfield, but the chemicals were detected in other groundwater sources. Although Zone 7 did detect PFOA and/or PFOS in certain wells, this groundwater was blended and/or treated using reverse osmosis to reduce the contaminant level below the applicable response level – ensuring that water delivered to our customers met our high standards.

Learn More

As the science advances, we will utilize proven technologies and best practices to ensure any emerging PFAS issues are managed in a transparent and responsible manner. For details about how we are ensuring the safety of your water, visit www.Zone7Water.com/pfas-information.

WATER SUPPLY SOURCES	PFOS (ng/L)		PFOA (ng/L)	
	RAA	Range	RAA	Range
Chain of Lakes (COL) Wellfield				
COL Well 1	34	28-44	4	4-6
COL Well 2	14	12-16	2	ND-3
COL Well 5*	37	15-52	1	ND-2
Blended COL Water	25	19-31	3	2-3
Mocho Wellfield				
Mocho Well 1**	94	73-110	9	8-10
Mocho Well 2**	41	26-50	6	5-6
Mocho Well 3	34	30-39	6	5-6
Mocho Well 4	11	4-14	3	3-4
Blended/Treated Mocho Water	22	9-30	4	3-4
Stoneridge Well	8	5-12	1	ND-2
Hopyard Wellfield (Well 6 and 9)	ND	ND	ND	ND
Treated Surface Water	ND	ND	ND	ND

Notes: ND indicates no detection at or above the analytical reporting limit of 2 ng/L.
ng/L=Nanograms/Liter.

* COL Well 5 was blended with other COL well water whenever it was online.

** Mocho Well 1 (the lowest priority well that was rarely used) and Mocho Well 2 were blended with other Mocho well water whenever either well was online. All Mocho wells can be treated via reverse osmosis membranes at the Mocho Groundwater Demineralization Plant.

Protecting Water Quality

Zone 7 proactively monitored for PFAS in water supplies well before any requirements took effect because we know PFAS are commonly found in groundwater sources throughout the developed world. Because they are so common, it can be difficult or impossible to link PFAS to a single source, and multiple sources can accumulate over time. We continue to investigate existing and potential sources of PFAS in our groundwater basin. At this time, there is no indication of a single source for this contamination because of the widespread prevalence of PFAS in thousands of consumer products. There are no known local manufacturing sites.

We anticipate completing a new study to recommend future sampling and investigation efforts by the fall of 2020. In order to provide an even more reliable supply of high-quality water, Zone 7 has also invested in a study to assess additional treatment options and costs to achieve our goal of reducing PFAS to the lowest levels that are technically and economically feasible. The study is anticipated to be completed in the summer of 2020.

WHAT'S IN YOUR WATER?

Water Quality Testing

As part of rigorous quality control, Zone 7 Water Agency regularly checks for a range of substances in our water supplies to ensure we can deliver safe and clean water to customers. The results table shows the average level and range of each detected regulated contaminant in our water supplies. Detected secondary standards and additional parameters are also listed. The following components may be of interest to our customers:

TURBIDITY is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of the filtration system for surface water treatment.

TOTAL ORGANIC CARBON (TOC) has no health effects. However, TOC provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the maximum contaminant levels (MCL) may lead to adverse health effects, including liver or kidney problems, nervous-system effects, and increased cancer risk. TOC removal requirements are applicable to surface water treatment plants only.

NITRATE in drinking water at levels above 10 mg/L (as nitrogen) is a health risk for infants less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 10 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider. Nitrate levels in Zone 7's surface water supplies are typically very low (less than 1 mg/L) as compared to groundwater, but both sources meet all standards.



Terms to Know

MAXIMUM CONTAMINANT LEVEL (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals or Maximum Contaminant Level Goals as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

MAXIMUM CONTAMINANT LEVEL GOAL (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.

MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL): 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.

MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG): 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.

PUBLIC HEALTH GOAL (PHG): 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.

PRIMARY DRINKING WATER STANDARD (PDWS): MCLs and MRDLs for contaminants that affect health, along with their monitoring and reporting requirements, and water-treatment requirements.

TREATMENT TECHNIQUE (TT): A required process intended to reduce the level of a contaminant in drinking water.

REGULATORY ACTION LEVEL (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

DETECTION LIMIT FOR PURPOSES OF REPORTING (DLR) or MINIMUM REPORTING LEVEL (MRL): The level at which water agencies must notify the public and regulatory bodies of the results.

RUNNING ANNUAL AVERAGE (RAA): Test results based on an average of the previous four quarters.

How to Read the Table

CONTAMINANT	STATE STANDARDS			ZONE 7 RESULTS	
	MCL	DLR (MRL)	PHG (MCLG) [MRDLG]	RAA	Range
1 Selenium µg/L	2 50	3 5	4 30	5 ND	6 ND

- 1 The contaminant being tested for in our labs.
- 2 The highest level of a contaminant allowed for drinking water. Our results must be lower than this amount.
- 3 The level at which we must report our results, even though they are lower than the standard.
- 4 Goal levels at which the state would like to keep our results below.
- 5 Average test results based on the last year's results for Zone 7's water supply.
- 6 Range – from Not Detected (ND) to the highest test result based on all samples collected from Zone 7's water supply during the year.

2019 WATER QUALITY TESTING RESULTS

JANUARY-DECEMBER 2019 WATER QUALITY DATA - CONTAMINANTS DETECTED IN WATER SUPPLY							
Primary Drinking Water Standards, established by the State Water Resources Control Board (State Board), Division of Drinking Water (DDW)							
CONTAMINANT	MCL	DLR (MRL)	PGH (MCLG) [MRDLG]				
Total Coliform Bacteria	5.0% of monthly samples are positive		(0)	Highest Percentage of Monthly Positive Samples			
				1.1			
Total Trihalomethanes (TTHMs), µg/L	80	1*	NA	Highest Locational Running Annual Average		Range of All Samples Collected in 2019	
				32		15 - 44	
Haloacetic Acids (five) (HAA5), µg/L	60	1*	NA	17		5 - 28	
Chloramines as Chlorine, mg/L	Maximum Residual Disinfectant Level (MRDL) = 4.0		[4]	System-wide Running Annual Average (RAA)		Range of Monthly Average Chloramines	
				2.4		2.3 - 2.7	
Water Supply Sources							
CONTAMINANT				SURFACE WATER		GROUND WATER	
Turbidity	TT = 1 NTU maximum TT = 95% of samples ≤ 0.3 NTU		NA	Highest Level Found = 0.21 NTU		NA	
			NA	% of samples ≤ 0.3 NTU=100		NA	
Total Organic Carbon	TT = Quarterly RAA Removal Ratio ≥ 1.0		NA	Lowest Quarterly RAA Ratio = 1.7		NA	
Inorganic Chemicals				Average	Range	Average	Range
Arsenic (µg/L)	10	2	0.004	ND	ND	ND	ND - 2
Barium (µg/L)	1000	100	2000	ND	ND	192	ND - 390
Chromium total (µg/L)	50	10	(100)	ND	ND	ND	ND - 16
Selenium (µg/L)	50	5	30	ND	ND	ND	ND - 10
Fluoride (mg/L)	2	0.1	1	ND	ND - 0.1	ND	ND - 0.1
Nitrate (as N) (mg/L)	10	0.4	10	ND	ND - 1.3	3.0	0.8 - 5.1
Radionuclides							
Gross Alpha Particle Activity (pCi/L)**	15	3	(0)	3	3	3	ND - 6
Uranium (pCi/L)	20	1	0.43	ND	ND	1.3	ND - 3.9
Secondary Drinking Water Standards, established by DDW							
Conductivity (µS/cm)	1600		-	351	212 - 782	945	372 - 1501
Chloride (mg/L)	500		-	62	29 - 170	103	40 - 200
Iron (µg/L)	300	(100)	-	ND	ND	ND	ND - 250
Sulfate (mg/L)	500	0.5	-	19	8 - 47	64	22 - 129
Total Dissolved Solids (mg/L)	1000		-	188	103 - 439	567	208 - 940
Turbidity (NTU)	5	(0.05)	-	NA	NA	0.11	ND - 1.1
Zinc (µg/L)	5000	(10)	-	ND	ND	ND	ND - 50
Additional Parameters - included to assist consumers in making health or economic decisions, i.e. low-sodium diet, water softening, etc.							
Alkalinity as calcium carbonate (mg/L)	-		-	59	35 - 90	283	101 - 424
Boron (µg/L)	-	100	-	63	ND - 130	739	210 - 1560
Total Hardness as calcium carbonate (mg/L)	-		-	72	36 - 127	355	87 - 572
Potassium (mg/L)	-		-	1.8	1.1 - 4.7	2.0	0.7 - 3.5
Sodium (mg/L)	-		-	44	25 - 104	68	27 - 140
pH (Units)	-		-	8.5	7.3 - 8.8	7.5	7.2 - 8.8
Silica (mg/L)	-		-	9	5 - 16	23	6 - 29

NOTES:

* TTHMs each component DLR is 1 µg/L. HAA5 each component DLR is 1 µg/L except Monochloroacetic acid that has DLR of 2 µg/L.

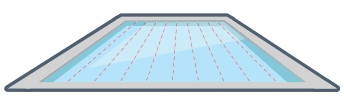



ABBREVIATIONS:

TT = Treatment Technique; NA = Not Applicable; ND = Monitored for but not detected at or above DLR or MRL; ND or value in range column indicates that more than one analysis was performed during the year.

UNITS OF MEASUREMENT:

NTU = Nephelometric Turbidity Unit; µS/cm = Microsiemens per centimeter; pCi/L = Picocuries per liter; mg/L = Milligrams per liter; µg/L = Micrograms per liter; ng/L = Nanograms per liter

So, how much is THAT? Let's compare.

			
There are 2.5 million liters of water in an Olympic-size swimming pool	mg/L = Milligrams/Liter or parts per million (ppm)	µg/L = Micrograms/Liter or parts per billion (ppb)	ng/L = Nanograms/Liter or parts per trillion (ppt)
	About 1/2 cup of salt in the pool	About 1 pinch of salt in the pool	About 1 grain of salt in the pool

Where Do Contaminants Come From?

The sources of drinking water (both tap 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 it 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 wastewater-treatment plants, septic systems, agricultural-livestock operations, landscaping, agriculture 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, which 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, which are byproducts of industrial processes and petroleum production. They can also come from gas stations, urban stormwater runoff, and septic systems.

RADIOACTIVE CONTAMINANTS which 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 USEPA and the State Water Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

How Do Contaminants Enter Our Water Supply?

Major sources of regulated contaminants detected in Zone 7 water supplies are listed below:

TOTAL COLIFORM BACTERIA - Naturally present in the environment.

TTHMs - Byproduct of drinking water disinfection.

HAA5 - Byproduct of drinking water disinfection.

CHLORAMINES - Drinking water disinfectant added for treatment.

TURBIDITY - Soil runoff.

TOC - Various natural and man-made sources.

ARSENIC - Erosion of natural deposits; runoff from orchards; glass and electronics production wastes.

BARIIUM - Erosion of natural deposits; discharge of drilling wastes; and discharge from metal refineries.

CHROMIUM - Erosion of natural deposits; discharge from steel and pulp mills and chrome plating.

SELENIUM - Erosion of natural deposits.

FLUORIDE - Erosion of natural deposits and discharge from fertilizer and aluminum factories.

NITRATE - Erosion of natural deposits; runoff from fertilizer use; and leaching from septic tanks and sewage.

GROSS ALPHA PARTICLE ACTIVITY - Erosion of natural deposits.

URANIUM - Erosion of natural deposits.

CONDUCTIVITY - Substances that form ions when in water; seawater influence.

CHLORIDE - Runoff/leaching from natural deposits; seawater influence.

IRON - Leaching from natural deposits; industrial wastes.

SULFATE - Runoff/leaching from natural deposits; industrial wastes.

TDS - Runoff/leaching from natural deposits.

ZINC - Runoff/leaching from natural deposits; industrial wastes.

Contaminants Not Detected in Zone 7's Water Supply

PRIMARY STANDARDS: CONTAMINANTS NOT DETECTED IN ZONE 7 WATER SUPPLY			
Organic Chemicals		Inorganic Chemicals	Radionuclides***
VOLATILE ORGANIC CHEMICALS (VOCs)	SYNTHETIC ORGANIC CHEMICALS (SOCs)*	Aluminum Antimony Asbestos* Beryllium Cadmium Cyanide Mercury Nickel Nitrite (as nitrogen) Perchlorate Thallium	Radium-226, Radium-228 Beta/photon emitters Tritium, Strontium-90
Benzene Carbon Tetrachloride 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene Dichloromethane 1,2-Dichloropropane 1,3-Dichloropropane Ethylbenzene Methyl-tert-butyl ether (MTBE) Monochlorobenzene Styrene 1,1,2,2-Tetrachloroethane Tetrachloroethylene Toluene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene Trichlorofluoromethane 1,1,2-Trichloro-1,2,2-Trifluoroethane Vinyl Chloride Xylenes	Alachlor Atrazine Bentazon Benzo(a)pyrene Carbofuran Chlordane 2,4-D Dalapon Dibromochloropropane (DBCP) Di(2-ethylhexyl)adipate Di(2-ethylhexyl)phthalate Dinoseb Diquat Endothall Endrin Ethylene Dibromide (EDB) Glyphosate Heptachlor Heptachlor Epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Molinate Oxamyl Pentachlorophenol Picloram Polychlorinated Biphenyls Simazine Thiobencarb Toxaphene 2,3,7,8-TCDD (Dioxin) 1,2,3-Trichloropropane (TCP) 2,4,5-TP (Silvex)	NOTES: None of the primary standards listed above were detected at or above DLR in Zone 7 water supply during 2019 monitoring. * Latest monitoring for asbestos was conducted in 2011. ** Although SOCs monitoring for groundwater sources was waived by State Water Board for the 2017 to 2019 period, one representative well from each wellfield was monitored in 2017 for all SOCs except Dioxin.	



HOW DO WE ENSURE WATER SAFETY?

About Water Treatment

The world of water treatment is complex! There is a great deal of work that goes into preparing the water that originates as rain, snowmelt or underground aquifers to meet the Zone 7 water quality goals, so that it can be delivered to homes and businesses. Our water treatment process is carefully designed and managed, taking water from different sources through multiple steps and stages before it reaches you. Thanks to best-in-class systems and a highly skilled team of experts, you can be confident in drinking Zone 7 water, straight from the tap.

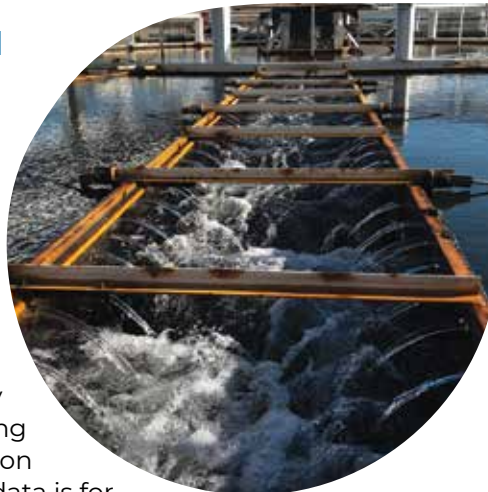
Zone 7 Water Agency applies a multi-barrier approach from source to tap to safeguard water supplies and achieve the high quality we expect from our drinking water.

Our approach to water treatment includes the following multi-step process:

- **Source water protection**
- **Conventional dual-media filtration**
- **Blending and/or filtration**
- **Disinfection**
- **Safe storage and distribution**

Lead and Copper Rule and Corrosion Control

Zone 7 Water Agency and its retailers have been in compliance with the Lead and Copper Rule requirements for many years and we continue actively monitoring for lead and copper in our delivered water. In addition, Zone 7 completed a corrosion control treatment evaluation study in September 2017 to ensure existing processes are optimized for corrosion control. The following monitoring data is for Zone 7's direct customers only. Per State Water Board approval, compliance monitoring is conducted once every three years. Data from June 20, 2018 monitoring is summarized below:



CONTAMINANT	NUMBER OF SAMPLES COLLECTED	90TH PERCENTILE LEVEL DETECTED	ACTION LEVEL (AL)	NUMBER OF SITES EXCEEDING AL	PHG
Lead (µg/L)	11	4	15	None	0.2
Copper (µg/L)	11	71	1300	None	300

If present, 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. Zone 7 Water Agency 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 are concerned about lead in your water, you may wish to have your water tested. 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.

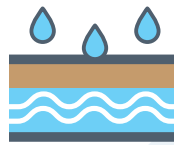
SOURCE WATER PROTECTION

We help prevent contaminants from entering our water supply as much as possible:



SURFACE WATER

- Reduce the amount of untreated sewer spills into surface waters
- Restrict direct runoff from cattle ranching operations near surface water sources
- Properly treat wastewater before discharge



GROUNDWATER

- Limit pesticides and fertilizers and avoid excess irrigation to reduce runoff
- Ensure chemicals are stored and disposed of properly
- Ensure proper construction and destruction of wells and septic tanks

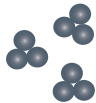
WATER FILTRATION

Groundwater is filtered naturally. Surface water is filtered at our state-of-the-art plant using a multi-step process:



ADD MINERALS

Iron or aluminum salts called coagulants are added to water containing unwanted particles.



COAGULATION

The particles then bind together or coagulate.



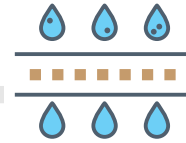
FLOCCULATION

Gentle mixing helps create larger particle groups called flocs.



SEDIMENTATION

The heavy flocs settle, leaving clarified water.



FILTRATION

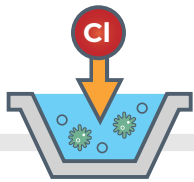
Clarified water is pushed through sand and gravel to remove remaining sediment.



These treatment processes remove at least 90% of viruses and at least 99.7% of larger pathogens.

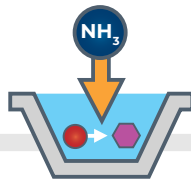
DISINFECTION FOR SURFACE WATER

We disinfect our surface water using a chlorination process:



CHLORINE

A powerful disinfectant called chlorine is added to water to kill bacteria and viruses.

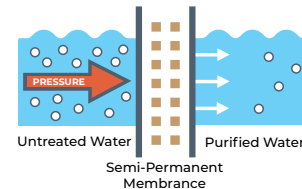


AMMONIA

Adding ammonia converts chlorine to chloramines and reduces the formation of chlorination byproducts.

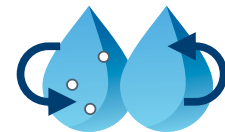
BLENDING AND/OR FILTRATION FOR GROUNDWATER

Groundwater is filtered naturally. Some groundwater is blended and some is further filtered through the reverse osmosis process.



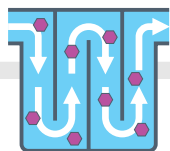
REVERSE OSMOSIS

Some of our groundwater is pushed through a semi-permeable membrane by applying pressure to reduce the amount of minerals.



BLENDING

Some contaminants cannot be removed naturally, so the water is blended with other sources to reduce the amount of unwanted particles to a safe level.



CHLORAMINES

Chloramines provide a disinfectant residual to keep water clean throughout the distribution system.

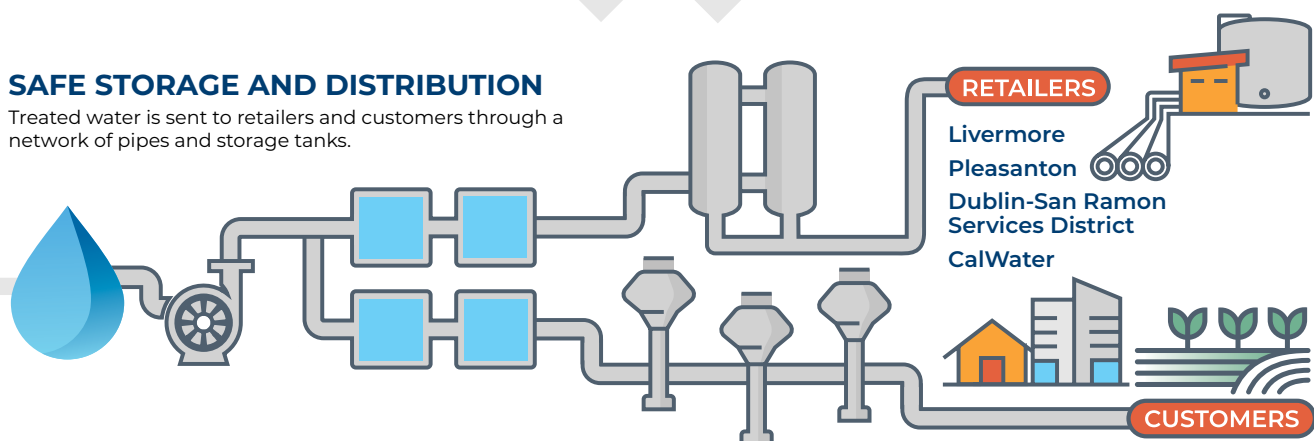
CHLORAMINES

Chloramines are added to our groundwater to keep a consistent level of disinfectant residual in our system, keeping it safe as it travels to your home.



SAFE STORAGE AND DISTRIBUTION

Treated water is sent to retailers and customers through a network of pipes and storage tanks.





DEL VALLE WATER TREATMENT PLANT OZONATION PROJECT

Improvements to Treatment Process and Finished Water Quality

As part of Zone 7's commitment to high-quality water, we are upgrading the Del Valle Water Treatment Plant to utilize a powerful disinfectant called ozone. Ozone will replace chlorine as the primary disinfectant in the treatment process, resulting in even higher quality water for our customers.

This investment in ozonation will improve our water by destroying organic substances that can impact taste and odor, reducing the formation of chlorine-related byproducts, and neutralizing even more pathogens than chlorine. It will make our water cleaner, safer and better tasting – straight from the tap.

Algal Blooms Cause Taste, Odor Impacts

The major source of raw water supply for the Del Valle Water Treatment Plant is surface water imported through the Sacramento-San Joaquin River Delta and conveyed via the South Bay Aqueduct. Local runoff from the Del Valle Reservoir is also included in our raw water supply.



In recent years, more frequent algal blooms have affected the water we receive for treatment. Seasonal overgrowths of algae can cause taste and odor changes – such as an earthy, musty taste – and make the water more complex to treat. Some algae can also plug up filters and produce toxins. Treating this water supply with the current processes at the Del Valle Water Treatment Plant has become increasingly difficult and costly.

Multiple studies over the years have identified ozone as a more effective alternative to chlorine to make the treatment process more efficient, and to improve finished water quality.

Better Tasting, Safer Water

The transition from chlorine to ozone disinfection is expected to improve the overall quality of water treated at Del Valle Water Treatment Plant to the benefit of our customers. Currently, Zone 7 uses chlorine as a disinfectant to treat raw water. Chlorine is highly effective in killing bacteria and viruses; however, it can react with organic material in the water to create odors and potentially harmful chemical byproducts.



A powerful oxidant and disinfectant, ozone is bubbled into pretreated raw water as an ozone-in-oxygen gas mixture. It is highly effective at killing bacteria and neutralizing large pathogens such as Giardia and Cryptosporidium. By adding ozone treatment, Zone 7 will be able to reduce the use of chlorine and minimize potentially harmful disinfection byproducts from chlorine disinfection. Ozone treatment will also reduce the need for other chemicals in the treatment process.

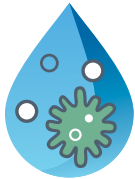
Ozonation is more effective than chlorine at treating organic matter and destroying algal byproducts. This will make our water more palatable by removing many of the compounds that can cause unpleasant taste and odors in drinking water, including those created by algal blooms that affect our raw water supply.

Adding to its value, ozone treatment is the technology of choice for treating other contaminants of emerging concern, such as cyanotoxins produced by blue-green algae, endocrine disruptors and pharmaceuticals that can make their way into raw water supplies.

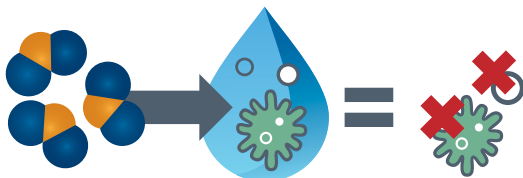
HOW DOES OZONE TREATMENT WORK?



Adding an electric spark to Oxygen (O_2) creates supercharged Ozone (O_3) molecules.



Contaminants in water may include bacteria, viruses, and algal byproducts that impact taste and odor.



Ozone is injected into the water as a gas at our new ozonation site in the Del Valle Water Treatment Plant. The Ozone seeks out and destroys contaminants in the water.



Ozonation leaves behind pure, high-quality water, without the byproducts left behind by other disinfectants.



Ozonation Project

The ozone project is part of Zone 7's Capital Improvement Plan and is a capital investment of \$49 million, financed through bonds. It includes construction or modification of the following facilities at Del Valle Water Treatment Plant:

- New ozone generation building
- New ozone contactor structure, where the ozone will be applied to incoming water
- New ozone destructor which converts excess ozone back to pure oxygen
- New chemical storage facilities for liquid oxygen used to create ozone, and carbon dioxide used for pH stabilization
- New utility water pump station
- Modifications to the existing filters, electrical systems, yard piping, and chemical systems
- New emergency/back-up power generator

Del Valle Water Treatment Plant Milestones

Located in Livermore, the Del Valle Water Treatment Plant is a central facility for treating our water supply to meet Zone 7's high standards. Constructed nearly half a century ago, it was later expanded to double its capacity. The ozonation project, which is part of Zone 7's Capital Improvement Plan, brings best-in-class disinfection technology to this water treatment plant.

- 1974** — Construction of Del Valle Water Treatment Plant, with a capacity of 18 million gallons per day.
- 1988** — Plant is expanded to capacity of 36-40 million gallons per day, with the installation of a new treatment process, additional filters and additional treated water storage.
- 2018-2020** — Construction of ozone treatment system to provide more powerful disinfection and improve water quality.
- 2020** — New ozonation process will be fully operational this summer.



WATER AGENCY

Delivering Quality, Reliability and Safety

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Livermore, CA 94551
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Este Informe Contiene Información Muy Importante Sobre Su Agua Potable. Tradúzcalo O Hable Con Alguien Que Lo Entienda Bien. (This Report Contains Important Information About Your Drinking Water. Translate it, or speak with someone who understands it.)



Meeting Community Expectations

More than three-quarters of our water supply flows through the South Bay Aqueduct (SBA). This SBA water can be affected by natural algal growth at certain times of the year, causing tastes and odors that customers may notice. In addition, certain algae can also produce potentially harmful toxins in the source water.

Zone 7 uses several strategies to address these impacts to ensure high-quality water for our customers. Our current treatment strategies include periodic copper sulfate application to the source water and use of Powdered Activated Carbon at Zone 7's two surface water treatment plants. Zone 7 is installing an advanced ozone treatment process at each of its treatment plants.

The Del Valle Water Treatment Plant will have fully operational ozone treatment online in summer 2020, and the Patterson Pass Water Treatment Plant will have operational ozone treatment in 2022.

Educational Information

- 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 U.S. Environmental Protection Agency's (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, and infants can be particularly at risk from 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).

We Welcome Your Participation

Zone 7 Water Agency is committed to transparency and invites public participation. You are invited to engage in our public forum and voice questions or concerns about your drinking water. Regular meetings of the Board of Directors are open to the public and held the third Wednesday of each month at 7 p.m. Special meetings are scheduled as needed. Meeting agendas are posted online at www.zone7water.com.