

# THE WONDROUS WORLD OF WATER

## 2020 Annual Consumer Confidence Report

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# WELCOME TO THE WONDROUS WORLD OF WATER

With a commitment to excellence, Zone 7 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 your water with our state-of-the-art treatment and monitoring systems.

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 provides untreated water to local agricultural users and provides flood protection to 425 square miles of eastern Alameda County. Working closely with our partners, we pride ourselves at Zone 7 on not only meeting but also exceeding 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 2020 met the regulatory standards set by the state and federal governments and, in almost all cases, the quality was significantly better than required.**

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## ZONE 7 ESSENTIAL WORKERS RESPOND TO COVID-19

Zone 7 Water Agency has actively monitored guidance from public health authorities throughout the COVID-19 pandemic. We want our customers to know that the safety and reliability of your water is Zone 7's highest priority. The standard treatment and disinfectant processes used for Zone 7 water are highly effective against viruses, including COVID-19. **Your water is safe to drink and use every day.**

Our highly trained staff at Zone 7 work around the clock to ensure the quality and safety of your water. These essential workers have remained diligent and dedicated to serving the Tri-Valley's needs during ever-changing requirements for remote work, events and social distancing. Through it all, we are proud that our committed staff of public servants have maintained consistent service and quality for our customers.

**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](http://www.cdc.gov/coronavirus/2019-ncov/php/water.html)**



# WHERE IN THE WORLD DOES THE TRI-VALLEY'S WATER COME FROM?

## Source Water Assessment

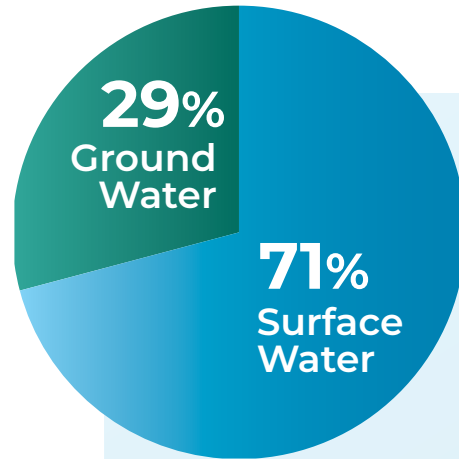
Zone 7 Water Agency draws from a diverse portfolio of drinking water sources, including local and imported surface water as well as groundwater from wells. We carefully monitor all these sources to ensure their continued quality and to protect the safety of our water supply.

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. After leaving the Delta, water is transported to Zone 7 via the South Bay Aqueduct (SBA). The SBA water quality can become polluted from local cattle grazing, wildlife activities, and recreational activities in the watersheds of the Bethany and Del Valle reservoirs. In order to deliver the high-quality water we expect in Zone 7, we proactively participate in a number of activities to improve water supply reliability and the water quality of the SBA.



Copies of any public outreach materials, source water assessment reports or sanitary surveys are available by calling Gurpal Deol at: 925-447-0533.



## 2020 ZONE 7 WATER SUPPLY SOURCES

### Our Primary Water Sources

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

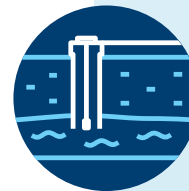


#### IMPORTED SURFACE WATER. .

The majority of our water supply originates as Sierra Nevada snowmelt and is conveyed by the State Water Project through the Delta and then via the South Bay Aqueduct.\*



**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.

## THE TRI-VALLEY WATER SUPPLY JOURNEY

The majority of the Tri-Valley's water supply is imported from outside the region, on average 70% of our water comes from the Sierra Nevada Mountains and arrives via the South Bay Aqueduct. We also are fortunate to have the Livermore Valley Groundwater Basin in our area. This important natural resource provides approximately 10% of our water supply in any given year, though we must be strategic about managing this resource sustainably to ensure the

basin is not overdrawn. We also receive water in the form of rainfall stored in our local reservoir, Lake Del Valle. Dry seasons, such as the one we are experiencing now, mean we use different sources of water, which are treated differently as well.

- Follow the path of our source water in the infographic below.
- See page 11-12 for information on how we treat different types of source water, or visit our website at [www.zone7water.com/waterquality](http://www.zone7water.com/waterquality) to watch our Wondrous World of Water videos.



# 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 manufacturing multiple products present in our daily lives. People can be exposed to them through food, packaging, air pollution, dust and drinking water. The health impacts of PFAS on humans are not yet fully understood, but the U.S. 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 PFAS – and we proactively take necessary steps if contaminants exceed certain levels. All water delivered to our customers meets or exceeds state and federal regulations, including the new state guidelines for PFAS.

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.



## PFAS Regulatory Update

Over the past several years, the science on PFAS and its impacts to the environment and public health have prompted regulatory actions. The EPA has a 70 nanograms per liter (ng/L) Lifetime Health Advisory for two types of PFAS, perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), either singly or combined, and is moving forward with regulatory development for these two PFAS. The California State Water Resources Control Board has issued drinking water advisory levels for three PFAS (including PFOS and PFOA) so far and is pursuing advisory levels for six additional PFAS found throughout the state. The State Water Board is also in the process of developing Public Health Goals (PHGs) for PFOA and PFOS, which is the first step in establishing a Maximum Contaminant Levels (MCLs) for these PFAS.

## State Regulatory Advisory Levels for PFAS (ng/L)\*

PFAS	Notification Level	Response Level
Perfluorooctanesulfonic acid (PFOS)	6.5	40
Perfluorooctanoic acid (PFOA)	5.1	10
Perfluorobutanesulfonic acid (PFBS)	500	5,000

\* When a contaminant is found at concentrations greater than its advisory level, certain notification requirements and recommendations apply.

## Monitoring Water Supplies

At Zone 7, protecting public health and safety is the highest priority, including actively monitoring for PFAS in groundwater and surface water supplies.

**In 2020, Zone 7 did not detect any PFAS in its treated surface water supplies, which made up the majority of the total water delivered to its customers.**

No PFAS have been detected in Zone 7's Hopyard wellfield. Although Zone 7 detected some PFAS 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.

## 2020 PFAS Monitoring Summary

WATER SUPPLY SOURCES	PFAS**** (ng/L)									
	PFOS		PFOA		PFBS		PFHxS		PFHxA	
	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
<b>Mocho Wellfield*</b>										
Mocho Well 2 (before treatment)**	41	40 - 41	5	5 - 5	7	7 - 7	34	34 - 35	6	6 - 7
Mocho Well 3	33	30 - 35	5	5 - 5	6	5 - 7	26	22 - 28	5	5 - 6
Mocho Well 4	14	12 - 15	ND	ND	5	5 - 5	15	14 - 17	ND	ND
<b>Blended/Treated Mocho Water</b>	<b>24</b>	<b>18 - 30</b>	<b>ND</b>	<b>ND - 4</b>	<b>4</b>	<b>ND - 6</b>	<b>20</b>	<b>16 - 24</b>	<b>ND</b>	<b>ND - 5</b>
<b>Chain of Lakes (COL) Wellfield</b>										
COL Well 1	32	28 - 38	ND	ND - 5	5	4 - 6	24	21 - 29	ND	ND - 5
COL Well 2	14	13 - 15	ND	ND	ND	ND	14	12 - 15	ND	ND
COL Well 5 (before treatment)***	31	15 - 46	ND	ND	ND	ND	17	9 - 24	ND	ND
<b>Blended COL Water</b>	<b>22</b>	<b>19 - 25</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND - 4</b>	<b>17</b>	<b>14 - 20</b>	<b>ND</b>	<b>ND</b>
<b>Stoneridge Well</b>	10	8 - 16	ND	ND	ND	ND - 6	12	9 - 18	ND	ND
<b>Hopyard Wellfield (Well 6 and 9)</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Treated Surface Water</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

## Learn More

Zone 7 will continue to closely monitor the quality of the community's drinking water supplies. As the science advances, we will utilize proven technologies and best practices to ensure that any emerging PFAS issues are managed in a transparent and responsible manner. For more details about PFAS in Zone 7's water supply and how we are ensuring the safety of your water, visit [www.Zone7Water.com/pfas](http://www.Zone7Water.com/pfas)

## Protecting Water Quality

Zone 7 has been proactive in monitoring for PFAS in water supplies well before any requirements took effect because we know PFAS tend to accumulate in groundwater and 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. Zone 7 recently completed a PFAS Potential Source Investigation Study in December 2020 to assist in characterizing the extent of PFAS across Tri-Valley's groundwater basin and to identify potential sources of contamination. 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 and there are no known local manufacturing sites.

Zone 7 also has completed a PFAS Treatment Feasibility Study in summer of 2020 and is in the process of planning and designing a new PFAS treatment facility at the COL wellfield to ensure compliance with anticipated new state regulations in 2025.

**NOTES:** ng/L = nano grams per liter; ND indicates no detection at or above the Consumer Confidence Report Detection Level (CCRD) which is 4 ng/L for the above analytes; ND or value in range column indicates that more one sample was collected.

\*Mocho 1 Well is a standby emergency well that was not used in 2020.

\*\*Mocho Well 2 was blended/treated at the Mocho Groundwater Demineralization Plant (MGDP) whenever the well was online; All Mocho wells can also be treated at the MGDP.

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

\*\*\*\*Eighteen analytes were tested per EPA method 537.1; Only detected analytes above the CCRDL are shown on the table; PFOS = perfluoro-octane sulfonic acid, PFOA = perfluoro-octanoic acid, PFBS = perfluorobutane sulfonic acid, PFHxA = perfluorohexanoic acid, PFHxS = perfluorohexane sulfonic acid

## WHAT'S IN YOUR WATER?

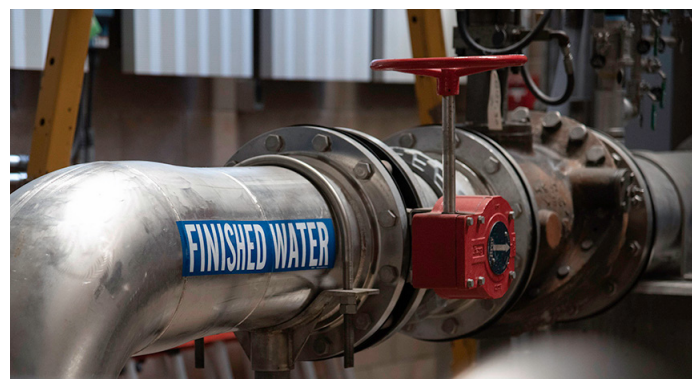
### Water Quality Testing

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.

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

**RANGE:** Range of detected results from Not Detected (ND) to the highest test result based on all samples collected during the year.

### How to Read the Table

CONTAMINANT	STATE STANDARDS			ZONE 7 RESULTS			
	MCL	DLR (MRL)	PHG (MCLG) (MRDLG)	SURFACE WATER		GROUNDWATER	
				RAA	Range	RAA	Range
1 Selenium µg/L	2 50	3 5	4 30	5 ND	6 ND	7 ND	8 ND-10

- 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 Running Annual Average (RAA) of Surface Water test results
- 6 Range of results from Surface Water samples
- 7 Running Annual Average (RAA) of Groundwater test results
- 8 Range of results from Groundwater samples



# 2020 WATER QUALITY TESTING RESULTS

JANUARY-DECEMBER 2020 WATER QUALITY DATA - CONTAMINANTS DETECTED IN WATER SUPPLY								
Primary Drinking Water Standards, established by the State Water Resources Control Board, Division of Drinking Water (DDW)								
CONTAMINANT	MCL	DLR (MRL)	PHG (MCLG) [MRDLG]	Major Sources in Drinking Water				
Total Coliform Bacteria	5.0% of monthly samples are positive		(0)	Highest Percentage of Monthly Positive Samples				
				1.1		Naturally present in the environment		
Total Trihalomethanes (TTHMs), µg/L	80	1*	NA	Highest Locational Running Annual Average	Range of All Samples Collected in 2019		Byproduct of drinking water disinfection	
				41	19 - 66			
Haloacetic Acids (five) (HAA5), µg/L	60	1*	NA	16	4.8 - 19			
Chloramines as Chlorine, mg/L	Maximum Residual Disinfectant Level (MRDL) = 4.0		[4]	System-wide Running Annual Average (RAA)	Range of Monthly Average Chloramines		Drinking water disinfectant added for treatment	
				2.6	2.5 - 2.8			
Water Supply Sources								
CONTAMINANT				SURFACE WATER		GROUND WATER		
Turbidity	TT = 1 NTU maximum		NA	Highest Level Found = 0.20 NTU		NA		Soil runoff
	TT = 95% of samples ≤ 0.3 NTU		NA	% of samples ≤ 0.3 NTU = 100		NA		
Total Organic Carbon	TT = Quarterly RAA Removal Ratio ≥ 1.0		NA	Lowest Quarterly RAA Ratio = 1.5		NA		Various natural and manmade sources
<b>Inorganic Chemicals</b>				<b>Average</b>	<b>Range</b>	<b>Average</b>	<b>Range</b>	
Aluminum (µg/L)	1000	50	600	ND	ND	ND	ND - 65	Erosion of natural deposits.
Barium (µg/L)	1000	100	2000	ND	ND	149	ND - 374	Erosion of natural deposits; discharge of drilling wastes; and discharge from metal refineries
Bromate (µg/L)	10	5	0.1	ND	ND - 6	NA	NA	Byproduct of drinking water disinfection
Chromium total (µg/L)	50	10	(100)	ND	ND	ND	ND - 14	Erosion of natural deposits; discharge from steel and pulp mills and chrome plating
Selenium (µg/L)	50	5	30	ND	ND	ND	ND - 8	Erosion of natural deposits; discharge from mines and industrial wastes.
Fluoride (mg/L)	2	0.1	1	ND	ND - 0.1	ND	ND - 0.1	Erosion of natural deposits and discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen) (mg/L)	10	0.4	10	ND	ND - 0.8	2.5	0.9 - 4.4	Erosion of natural deposits; runoff from fertilizer use; and leaching from septic tanks and sewage
<b>Radionuclides</b>								
Gross Alpha Particle Activity (pCi/L)**	15	3	(0)	3	3	3	ND - 6	Erosion of natural deposits
Uranium (pCi/L)	20	1	0.43	ND	ND	1	ND - 4	Erosion of natural deposits
Secondary Drinking Water Standards, established by DDW								
Conductivity (µS/cm)	1600		-	522	377 - 657	968	656 - 1486	Substances that form ions when in water; seawater influence
Chloride (mg/L)	500		-	83	43 - 137	108	46 - 187	Runoff/leaching from natural deposits; seawater influence
Iron (µg/L)	300	(100)	-	ND	ND	ND	ND - 122	Leaching from natural deposits; industrial wastes
Sulfate (mg/L)	500	0.5	-	46	13 - 80	68	37 - 128	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	1000		-	293	196 - 355	574	399 - 866	Runoff/leaching from natural deposits
Turbidity (NTU)	5	(0.05)	-	ND	ND - 0.12	0.06	ND - 0.69	Soil runoff
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)	-		-	83	62 - 140	283	194 - 419	Naturally-occurring minerals
Boron (µg/L)	-	100	-	152	ND - 300	821	270 - 1360	Naturally-occurring mineral
Total Hardness as calcium carbonate (mg/L)	-		-	101	70 - 140	345	205 - 521	Naturally-occurring minerals
Potassium (mg/L)	-		-	2.6	2 - 3.5	2.12	1.5 - 3.5	Naturally-occurring mineral
Sodium (mg/L)	-		-	70	50 - 93	78	31 - 129	Naturally-occurring mineral
pH (Units)	-		-	8.5	7.5 - 8.9	7.5	7.2 - 7.7	Naturally-occurring minerals
Silica (mg/L)	-		-	8.2	2.8 - 15	25	18 - 30	Naturally-occurring mineral

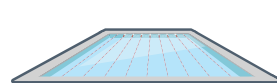
## NOTES:

\* 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.

\*\* = Gross alpha data is from 2017.

**ABBREVIATIONS / UNITS:** MCL = Maximum Contaminant Level, DLR = Detection Limit for Purposes of Reporting (State Water Board established), MRL = Minimum Reporting Level, NA = Not Applicable, PHG = Public Health Goal, MCLG = Maximum Contaminant Level Goal, MRDLG = Maximum Residual Disinfectant Level Goal, RAA = Running Annual Average, TT = Treatment Technique, NTU = Nephelometric Turbidity Unit, µg/L = Micrograms per liter, mg/L = Milligrams per liter, µS/cm = Microsiemens per centimeter, pCi/L = Picocuries per liter, ND = Monitored for but not detected at or above DLR or MRL.

## So, how much is THAT? Let's compare:



There are about 2.5 million liters of water in an Olympic-size swimming pool. To make the pool as salty as the ocean, it would take 2 standard shipping containers full of salt!



mg/L = Milligrams/Liter or parts per million (ppm)

About **2 quarts** of salt in the pool



µg/L = Micrograms/Liter or parts per billion (ppb)

About **1/2 teaspoon** of salt in the pool



ng/L = Nanograms/Liter or parts per trillion (ppt)

About **1 pinch** 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.



**EMERGENCY PREPAREDNESS:  
ALWAYS A GOOD TIME FOR PREP**

California's unpredictable climate means long dry spells in the summer often followed by sudden heavy rainstorms during the winter.

Our emergency preparedness guru, Flood Ready Freddy, has lots of great tips to make sure you don't get caught off guard when storms approach.

- Prepare an emergency kit
- Have an evacuation plan
- Keep storm drains clear of debris
- Maintain overgrown vegetation

You can watch and share videos, one-sheets, checklists and resources that will help you, your family and friends prepare for all different types of emergencies.

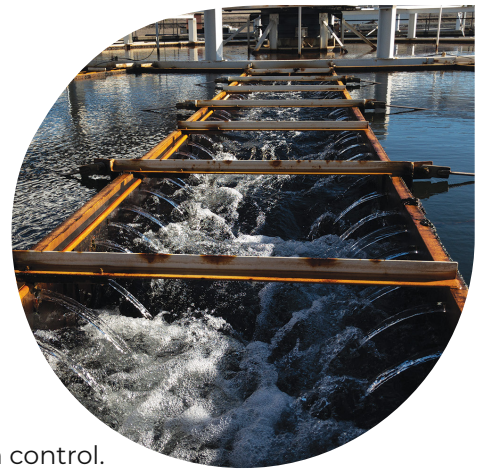
Visit [zone7water.com/floodready](http://zone7water.com/floodready) to become a #ReadyFreddy, too!

**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)*	Arsenic Antimony Asbestos Beryllium Cadmium Cyanide Mercury Nickel Nitrite (as nitrogen) Perchlorate Thallium Zinc	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)		
SECONDARY STANDARDS: CONTAMINANTS NOT DETECTED IN ZONE 7 WATER SUPPLY			
Color Copper Foaming Agents (MBAS) Manganese*		Methyl-tert-butylether (MTBE) Odor-Threshold Silver Thiobencarb	
<b>NOTES:</b> *Manganese was detected above the DLR during internal operational samples, but the average remained below the secondary standard. None of the secondary standards listed above were detected at or above DLR in Zone 7 water supply during 2020 monitoring.			

**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.



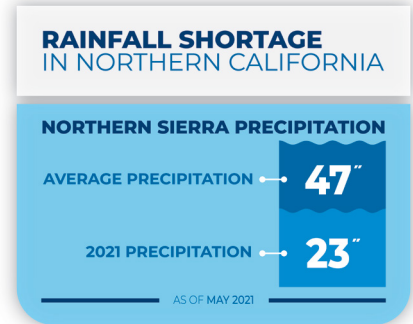
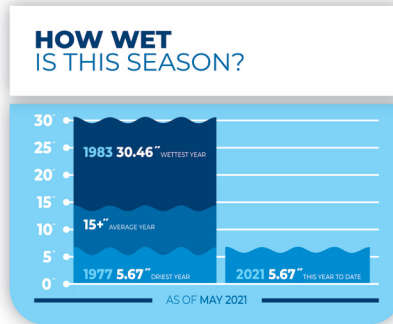
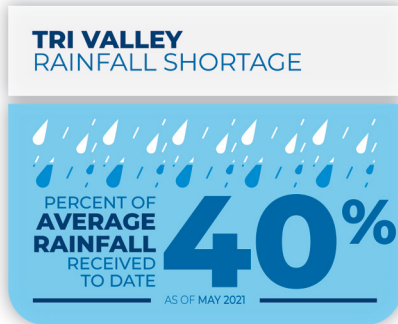
The following monitoring data is for Zone 7's direct customers only. Per State Water Board approval, compliance monitoring is conducted once every three years. Data from June 20, 2018 monitoring is summarized below:

CONTAMINANT	NUMBER OF SAMPLES COLLECTED	90TH PERCENTILE LEVEL DETECTED	NUMBER OF SITES EXCEEDING AL	ACTION LEVEL (AL)	PHG
Lead (µg/L)	11	4.1	None	15	0.2
Copper (µg/L)	11	71	None	1300	300

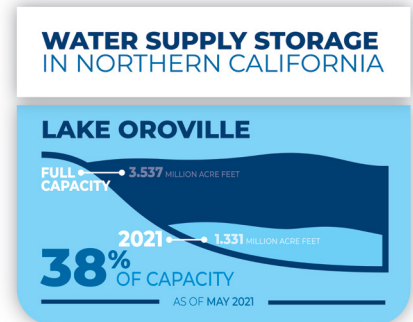
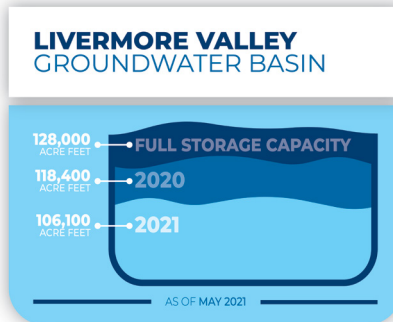
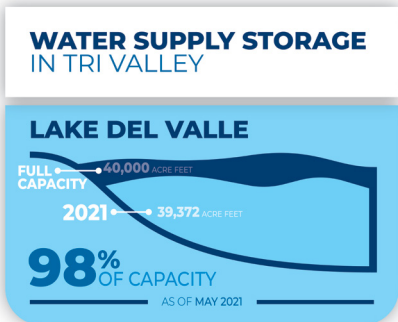
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Zone 7 Water Agency is responsible for providing high quality drinking 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](http://www.epa.gov/safewater/lead).

# THE DROUGHT AND WHAT YOU CAN DO ABOUT IT

## California Rainfall Shortage



## Tri Valley Water Storage



### WHAT YOU CAN DO ABOUT THE DROUGHT

## Be Water Wise

California is currently facing the most severe drought since 2012-2016. Our rainfall is in par with the drought season of 1976-77. We can't control the weather, but that doesn't mean we can't help. Water Wise Wendy is the Tri-Valley's water saving wizard! She is full of helpful tips and tricks (not to mention costumes, because what kid isn't?) that will help you find and fix leaks, save water outside in your yard and reduce your use inside your home.

Visit [www.zone7water.com/waterwise](http://www.zone7water.com/waterwise) for shareable videos and additional resources.

# HOW DO WE ENSURE WATER SAFETY?

## About Water Treatment


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 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:

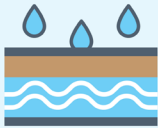
Best management practices to protect our watersheds and wellfields.

### 1 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

### 2 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

## CONVENTIONAL DUAL-MEDIA FILTRATION:

Treatment processes for surface water supplies, which remove particles and greater than 99% of waterborne pathogens, including viruses.

### 1 Add Minerals



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

### 2 Coagulation



The particles then bind together or coagulate.

### 3 Flocculation



Gentle mixing helps create larger particle groups called flocs.

### 4 Sedimentation



The heavy flocs settle, leaving clarified water.

### 5 Filtration



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

### 6 Purified Water



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

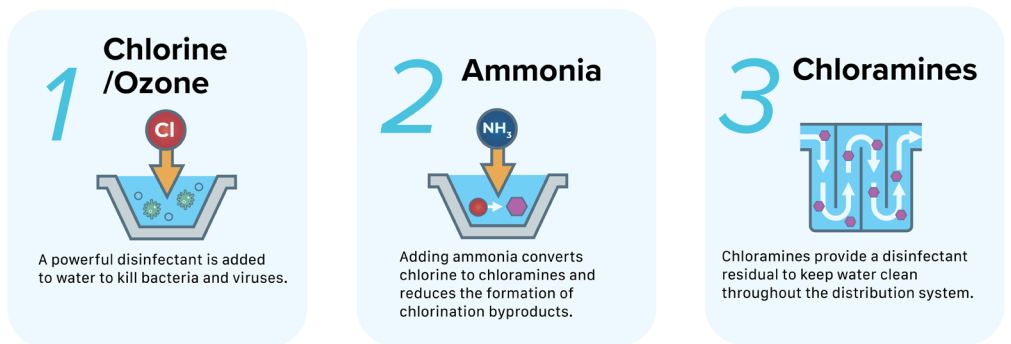
## BLENDING AND/OR FILTRATION:

Treatment through reverse osmosis membranes as needed, to reduce the concentration of minerals and contaminants in the groundwater.



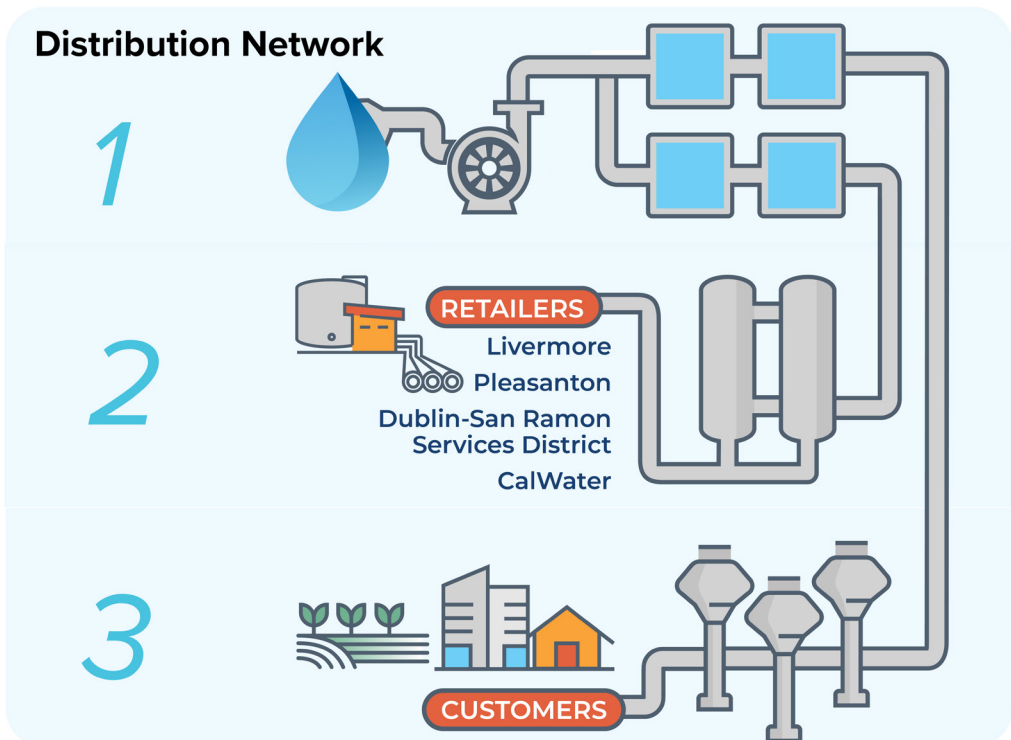
## DISINFECTION:

The scientifically proven addition of chemicals to inactivate or kill remaining pathogens.



## SAFE STORAGE AND DISTRIBUTION:

Maintaining a consistent disinfectant residual level in the distribution systems to prevent bacterial growth as water travels to your tap.



## Patterson Pass Water Treatment Plant Ozonation and Expansion Project

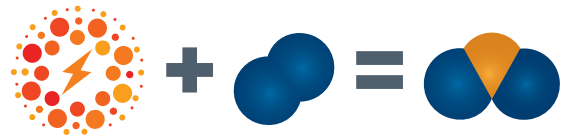
This project will modernize the plant so that Zone 7 can continue to meet its commitment to providing a reliable supply of high-quality water. The project will:

- Increase plant and process reliability by replacing aging treatment facilities
- Increase plant production capacity from 12 million gallons of water a day (mgd) to 24 mgd
- Increase in-plant storage capacity of finished water by approximately 5 million gallons
- Add ozonation facilities to improve treated water quality

Once completed, the Patterson Pass Water Treatment Plant will essentially be a brand new 24-mgd plant and will provide much needed back-up in case of potential outages at the Del Valle Water Treatment Plant. Additional operational flexibility provides for a reliable water supply in the event of emergencies such as earthquakes.



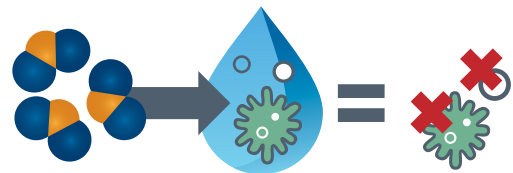
## HOW DOES OZONE TREATMENT WORK?



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.

## Patterson Pass Water Treatment Plant Milestones

- 1962** — Construction of Patterson Pass Water Treatment Plant, with a capacity of 7.5 million gallons per day (mgd).
- 1969** — Plant capacity was expanded to 12 mgd, with the installation of additional filters and treated water storage.
- 2003** — Plant capacity was expanded by 8 mgd, with the installation of a parallel ultrafiltration membrane treatment processes.
- 2019-2021** — Construction of new facilities including an ozone generation building, contactor structures, six filters, chemical storage and feed facilities, a 5-million gallon treated water storage tank, a pump station and new emergency generator. Demolition of aging facilities, including the ultrafiltration membrane treatment processes, and modification of existing clarifiers, wash water recovery ponds, and chemical facilities.
- 2022** — New ozonation process is expected to be fully operational next spring.

## WATER TREATMENT PLANT OZONATION PROJECTS

### Algal Blooms Cause Taste, Odor Impacts

The major source of raw water supply for the Del Valle and Patterson Pass Water Treatment Plants is surface water imported through the Sacramento-San Joaquin River Delta and conveyed via the South Bay Aqueduct. Local runoff from Lake Del Valle can also be treated at the Del Valle Water Treatment Plant.

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 conventional treatment processes 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.

### Improvements to Treatment Process and Finished Water Quality

As part of Zone 7's commitment to high-quality water, we have completed upgrading the Del Valle Water Treatment Plant to utilize a powerful disinfectant called ozone. The plant can treat up to 40 million gallons of water per day (mgd) and provides majority of water supply in the Tri-Valley. Since late summer of 2020, ozone has replaced chlorine as the primary disinfectant in the treatment process, resulting in even higher quality water for our customers. This project is part of Zone 7's Capital Improvement Plan and is a capital investment of \$49 million, financed through bonds. Approximately \$1.3M net increase in annual operating cost is anticipated due to addition of ozone treatment.

Zone 7 is also in the process of upgrading the Patterson Pass Water Treatment Plant to utilize ozone while expanding the plant capacity from 12 to 24 mgd. The new treatment facilities at the Patterson Pass Water Treatment Plant should be fully operational by spring of 2022. This project is a capital investment of \$110 million, financed through water rates, new connection fees, and bonds. Approximately \$1 million net increase in annual operating and maintenance costs is anticipated to operate the new ozone system and pump station.

This investment in ozonation will improve our water by removing organic substances that cause 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.

### 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. Previously, 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.





100 North Canyons Parkway  
Livermore, CA 94551  
925-454-5000 | [www.zone7water.com](http://www.zone7water.com)

*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.)*



## 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](http://www.zone7water.com).