



# 2018 Annual Consumer Confidence Report

Zone 7 Water Agency provides treated drinking water to four major water retailers, along with a small number of direct customers, serving more than 240,000 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. *All water supplied during 2018 met the regulatory standards set by the state and federal governments and, in almost all cases, the quality was significantly better than required.*

[DETAILS INSIDE ▶](#)

# Source Water Assessment

Zone 7 drinking water sources include local and imported surface water as well as groundwater. Protecting our source water is an important part of providing safe drinking water to the public.

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

Groundwater sources in general can be vulnerable to releases from chemical/petroleum pipelines, leaking tanks, groundwater contamination plumes, septic tanks, and wastewater-collection systems. Surface water is most vulnerable to contaminants 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). SBA water quality may also be vulnerable to pollution from local cattle grazing, wildlife activities, and recreational activities in the watersheds of the Bethany and Del Valle reservoirs. Zone 7 is proactively participating in a number of activities to improve the water supply reliability and 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**.

## 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).

## Terms Used

### 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.

## PFAS (Per- and polyfluoroalkyl substances) Information

PFAS are a large group of man-made substances that have been used extensively in consumer products designed to be waterproof, stain-resistant, or non-stick. In addition, they have been used in fire-retarding foam and various industrial processes. PFAS are unregulated emerging contaminants of concern in drinking water due to a host of health impacts and the tendency of PFAS to accumulate in groundwater.

Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are two of the most widely studied PFAS compounds. In July 2018, California DDW established a Notification Level of 14 parts per trillion (ppt) for PFOA and 13 ppt for PFOS and a recommended Response Level of 70 ppt for the sum of PFOA and PFOS in drinking water. These levels are health-based advisory levels established as precautionary measures for contaminants that may be considered candidates for establishment of maximum contaminant levels, but have not yet undergone or completed the regulatory standard setting process prescribed for the development of maximum contaminant levels and are not drinking water standards.

At Zone 7 protecting our customers' health and safety is our highest priority, therefore Zone 7 conducted monitoring for several PFAS at all sources from November 2018 - April 2019. This testing found some of its groundwater wells have PFOS above its notification level:

Supply Source	PFOS Average (ppt)	PFOS Range (ppt)
Chain of Lakes Wellfield	26	12-52
Mocho Wellfield	41	<2-93

PFOA was detected in some wells, but the levels were well below its Notification Level. Some additional PFAS were detected in Zone 7's sources, but at present there are no regulatory guidelines for these contaminants. Per DDW recommendation, quarterly monitoring will continue at groundwater production wells for at least one year.

Zone 7 has already taken actions to ensure that the PFOA and PFOS in our delivered water are less than the recommended Response Level. Treatment tools currently available at these wellfields include membrane filtration and blending of water sources.

Additional information is available at:

[www.waterboards.ca.gov/pfas/](http://www.waterboards.ca.gov/pfas/)

[www.epa.gov/pfas](http://www.epa.gov/pfas)

[www.zone7water.com/pfas-information](http://www.zone7water.com/pfas-information)

# What's in Your Water?

The table at the right shows the average level and range of each detected regulated contaminant. Detected secondary standards and additional parameters are also listed. The following components may be of particular interest to our customers:

**TURBIDITY** is a measure of the cloudiness of the water. We are required to monitor it because it is a good indicator of the effectiveness of the filtration system for surface-water treatment. Note that turbidity does not measure air bubbles, only particles.

**TOC (Total Organic Carbon)** has no health effects. However, TOC contributes to the formation of disinfection byproducts. These byproducts include THMs (trihalomethanes) and HAAs (haloacetic acids). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, including liver or kidney problems, nervous-system effects, and increased cancer risk. Regulatory TOC-removal requirements are applicable to conventional water-treatment plants only. Treatment operation is optimized for maximum TOC removal and Zone 7's Locational Running Annual Averages for THM and HAA levels are well below their respective MCLs. Zone 7 TOC removal typically exceeds regulatory requirements.

**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.

JANUARY–DECEMBER 2018 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)																	
Distribution System																	
CONTAMINANT	MCL	DLR (MRL)	PHG (MCLG) [MRDLG]	Highest percentage of monthly positive samples		Highest Locational Running Annual Average (RAA)		Range of all samples collected in 2017		System-Wide RAA		Range of Monthly Average Chloramines					
Total coliform bacteria	More than 5.0% of monthly samples are positive		(0)	0		30		16–45		14		8–17					
Total trihalomethanes (THMs), µg/L	80	1*	NA	30		16–45		14		8–17							
Haloacetic acids (five) (HAAs), µg/L	60	1*	NA	14		8–17											
Chloramines as Chlorine, mg/L	Maximum Residual Disinfectant Level (MRDL)=4.0		[4]	2.4		2.2–2.6											
Water Supply Sources																	
CONTAMINANT				DEL VALLE WATER TREATMENT PLANT		PATTERSON PASS WATER TREATMENT PLANT		MOCHO GROUNDWATER DEMINERALIZATION PLANT		MOCHO WELLFIELD		STONERIDGE WELL		HOPYARD WELLFIELD		CHAIN OF LAKES WELLFIELD	
Turbidity	TT=1 NTU Maximum			Highest Level Found=0.1 NTU		Highest Level Found=0.1 NTU		NA		NA		NA		NA		NA	
	TT=95% of samples ≤0.3 NTU			% of samples ≤0.3 NTU=100		% of samples ≤0.3 NTU=100		NA		NA		NA		NA		NA	
Total Organic Carbon	TT=Quarterly RAA Removal Ratio ≥ 1.0			Lowest Quarterly RAA Ratio=2.0		Lowest Quarterly RAA Ratio=1.8		NA		NA		NA		NA		NA	
Inorganic Chemicals	MCL	DLR (MRL)	PHG (MCLG) [MRDLG]	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Barium (µg/L)	1000	100	2000	ND	ND	ND	ND	ND	ND	109	ND–200	300	260–330	164	110–260	273	220–330
Chromium total (µg/L)	50	10	(100)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND–12
Selenium (µg/L)	50	5	30	ND	ND	ND	ND	ND	ND	ND	ND–9	ND	ND	6	5–8	ND	ND–10
Fluoride (mg/L)	2	0.1	1	ND	ND–0.1	ND	ND–0.1	ND	ND	ND	ND–0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nitrate (as N) (mg/L)	10	0.4	10	ND	ND–0.9	ND	ND–0.6	1.3	1.0–1.5	3.3	2.3–4.2	3.6	3.4–3.7	3.8	3.0–5.0	3.9	3.0–4.7
Radionuclides	MCL	DLR (MRL)	PHG (MCLG) [MRDLG]														
Uranium (pCi/L)	20	1	0.43	ND	ND	ND	ND	ND	ND–1.2	3	1–4	2	1–2	3	2–4	ND	ND–1
SECONDARY DRINKING WATER STANDARDS, established by DDW																	
Color	15	0	--	1.5	0–2.5	0	0	0	0	0	0	0	0	0	0	0	0
Conductivity (µS/cm)	1600		--	509	363–694	474	361–624	644	424–765	1414	1100–1706	924	822–975	978	885–1090	755	675–852
Chloride (mg/L)	500		--	94	57–140	91	57–140	80	45–102	181	146–209	93	80–100	81	68–90	67	45–95
Sulfate (mg/L)	500	0.5	--	30	11–50	32	12–75	43	24–52	109	63–148	58	52–61	67	46–86	43	38–50
Total Dissolved Solids (mg/L)	1000		--	265	182–361	253	182–321	379	228–463	845	606–1020	539	466–571	559	481–616	431	378–512
Turbidity (NTU)	5	(0.05)	--	NA	NA	NA	NA	ND	ND	0.4	ND–2.2	0.07	ND–0.3	0.1	ND–0.7	ND	ND–0.4
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)	--		--	67	44–115	62	48–74	175	120–212	405	302–484	285	266–298	334	310–362	249	228–267
Boron (µg/L)	--	100	--	129	ND–200	116	ND–200	1210	910–1520	1323	900–2010	400	330–470	466	330–580	333	290–400
Total Hardness as calcium carbonate (mg/L)	--		--	92	64–144	85	64–106	217	106–274	532	390–672	364	371–393	397	363–456	322	283–365
Potassium (mg/L)	--		--	3	2–4	2.5	2–3	1	1–2	3	2–4	2	2	2.1	2	2	2
Sodium (mg/L)	--		--	59	46–82	58	42–75	52	43–57	103	81–141	52	49–53	55	37–71	33	30–38
pH (Units)	--		--	8.6	8.4–9.0	8.6	8.3–9.0	8.1	7.7–8.7	7.3	7.2–7.6	7.6	7.5–7.7	7.4	7.2–7.6	7.6	7.4–7.8
Silica (mg/L)	--		--	10	7–14	10	8–13	12	8–15	29	24–33	29	27–30	26	24–28	28	24–31

## NOTES

\* THMs each component DLR is 1 µg/L. HAAs each component DLR is 1 µg/L except Monochloroacetic acid that has DLR of 2 µg/L. ND or value in range column indicates that more than one analysis was performed during the year.

## ABBREVIATIONS/UNITS

**MCL** = Maximum Contaminant Level, **DLR** = Detection Limit for Purposes of Reporting (DDW established), **MRL** = Minimum Reporting Level, **PHG** = Public Health Goal, **MCLG** = Maximum Contaminant Level Goal, **MRDLG** = Maximum Residual Disinfectant Level Goal, **NA** = Not Applicable, **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.

## Common Units in Everyday Equivalents

mg/L = Milligrams per liter (1 mg/L is like one penny in \$10,000)

µg/L = Micrograms per liter (1 µg/L is like one penny in \$10,000,000)

## 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 Division of Drinking Water prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Regulations also establish limits for contaminants in bottled water to provide protection for public health. More information is available on the USEPA's website, [www.epa.gov/safewater/](http://www.epa.gov/safewater/).

## MAJOR SOURCES OF DETECTED CONTAMINANTS

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

**TURBIDITY** Soil runoff.

**TOTAL ORGANIC CARBON** Various natural and man-made sources.

**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.

**URANIUM** Erosion of natural deposits.

# Contaminants Not Detected in Zone 7's Water Supply

PRIMARY STANDARDS: CONTAMINANTS NOT DETECTED IN ZONE 7 WATER SUPPLY			
ORGANIC CHEMICALS			
Volatile Organic Chemicals (VOCs)		Synthetic Organic Chemicals (SOCs)*	
Benzene	Monochlorobenzene	Alachlor	Heptachlor
Carbon Tetrachloride	Styrene	Atrazine	Heptachlor Epoxide
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane	Bentazon	Hexachlorobenzene
1,4-Dichlorobenzene	Tetrachloroethylene	Benzo(a)pyrene	Hexachlorocyclopentadiene
1,1-Dichloroethane	Toluene	Carbofuran	Lindane
1,2-Dichloroethane	1,2,4-Trichlorobenzene	Chlordane	Methoxychlor
Dichloroethylene	1,1,1-Trichloroethane	2,4-D	Molinate
cis-1,2-Dichloroethylene	1,1,2-Trichloroethane	Dalapon	Oxamyl
trans-1,2-Dichloroethylene	Trichloroethylene	Dibromochloropropane (DBCP)	Pentachlorophenol
Dichloromethane	Trichlorofluoromethane	Di(2-ethylhexyl)adipate	Picloram
1,2-Dichloropropane	1,1,2-Trichloro-1,2,2-Trifluoroethane	Di(2-ethylhexyl)phthalate	Polychlorinated Biphenyls
1,3-Dichloropropene	Vinyl Chloride	Dinoseb	Simazine
Ethylbenzene	Xylenes	Diquat	Thiobencarb
Methyl-tert-butyl ether (MTBE)		Endothall	Toxaphene
		Endrin	2,3,7,8-TCDD (Dioxin)
		Ethylene Dibromide (EDB)	2,4,5-TP (Silvex)
		Glyphosate	1,2,3-Trichloropropane (TCP)
INORGANIC CHEMICALS		RADIONUCLIDES***	
Aluminum	Cyanide	Radium-226, Radium-228	Beta/photon emitters
Antimony	Mercury		Tritium, Strontium-90
Arsenic	Nickel		
Asbestos**	Nitrite (as nitrogen)		
Beryllium	Perchlorate		
Cadmium	Thallium		

None of the primary standards listed above were detected at or above DLR in Zone 7 water supply during 2018 monitoring.

\* Although SOCs monitoring for groundwater sources was waived by DDW for 2017 to 2019 period, one representative well from each wellfield was monitored in 2017 for all SOCs except Dioxin.

\*\* Latest monitoring for asbestos was conducted in 2011.

\*\*\* Based upon low vulnerability, California DDW granted reduced monitoring for radionuclides for current supply sources on January 25, 2008. Only gross alpha particle activity monitoring is required once every nine years. Latest gross alpha monitoring conducted in 2017. Uranium monitoring is conducted for supplemental information as in-house capabilities are available.

## Lead and Copper Rule

This rule is applicable to Zone 7's direct customers only. Per California DDW approval, compliance monitoring is conducted once every three years. Data from June 20, 2018 monitoring is summarized below:

Contaminant	No. of Samples Collected	90th Percentile Level Detected	Number of Sites Exceeding AL	Action Level (AL)	PHG
Lead ( µg/L)	11	4	None	15	0.2
Copper ( µg/L)	11	71	None	1300	300

ND = Not detected at or above 5 µg/L

- ▶ *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).*

# About Water Treatment

State Water Project (SWP) water conveyed through the Delta, and then through the South Bay Aqueduct (SBA), makes up the majority of our surface-water supplies. Zone 7 has two facilities for the treatment of surface water: the Patterson Pass and the Del Valle water treatment plants. Because of the Del Valle plant's physical location, its water supply source can be from the SBA, Del Valle Reservoir, or a blend of the two. The Patterson Pass plant can receive water only from the SBA.

Zone 7 applies a multi-barrier approach to treat and remove pollutants from surface water, and the water is then disinfected using chloramination to minimize microbial risks. Groundwater is simply chloraminated to maintain a consistent residual disinfectant throughout the distribution system. Some groundwater may be filtered through reverse osmosis membranes to reduce the concentration of minerals in the groundwater.

## Our Primary Water Sources

**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.

**LOCAL GROUNDWATER.** This supply is pumped by Zone 7 from the aquifer that underlies the Livermore-Amador Valley; water in the aquifer comes from local rainfall and from the SWP.

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

## Commitment to Water Quality

Control strategies for seasonal taste-and-odor (T&O) control caused by algal growth in SBA water include periodic copper sulfate application to source water by the Department of Water Resources and use of Powdered Activated Carbon at both conventional treatment plants. Zone 7 is installing an advanced ozone treatment process at each of its treatment plants to provide more effective treatment for T&O and algal toxins while reducing disinfection by-products and improving overall water quality. The new ozone treatment process is anticipated to come online beginning in 2020 and fully operational by 2022.



May 2018, Groundbreaking Ceremony for the Del Valle Water Treatment Plant Ozonation Project

To address corrosion of lead and copper piping into drinking water, U.S. Environmental Protection Agency (USEPA) is currently considering revisions to the 1991 Lead and Copper Rule (LCR) to improve public health protection. Zone 7 and its retailers have been in compliance with the LCR requirements for many years and are 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 review existing processes and ensure that they are optimized for corrosion control.

► *More information about lead, including how to protect your family from exposures to lead, is available at: [www.epa.gov/lead/learn-about-lead](http://www.epa.gov/lead/learn-about-lead)*



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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.)*