WATER SUPPLY • WATER QUALITY • FLOOD PROTECTION

Zone 7 Water Agency

2015 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 approximately 220,000 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 2015 met the regulatory standards set by the state and federal governments and, in almost all cases, the quality was significantly better than required.

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, also known as a sanitary survey, is conducted on each drinking water source as required by the California State Water Resources Control Board Division of Drinking Water (DDW). Surface water is most vulnerable to contaminants as it travels through the Sacramento and San Joaquin watersheds and Delta. The latest sanitary survey for the Delta and the State Water Project (SWP) was completed in June 2012. It identified key vulnerabilities and sources of contaminants as wastewater-treatment plant discharges, urban runoff, recreational activities, and conversions of some agricultural Delta islands to wetlands. The sanitary survey includes an action plan to address these key vulnerabilities and sources of contaminants. In the past, the sanitary survey has been conducted every five years.

Sanitary surveys are now being produced on an annual basis, and focus on a narrower scope. Every five years these smaller annual surveys are being compiled into a complete survey and updated to reflect current conditions. One of these annual sanitary surveys, focusing on the San Joaquin River watershed, was completed in June 2015. Additional surveys will be completed and packaged together by June 2017, in time for the required submittal to DDW.

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 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.

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. A more advanced and preferred taste-and-odor control method is conventional ozonation of raw water at surface-water treatment plants.

In 2015, the U.S. Environmental Protection Agency (EPA) published 10-Day Drinking Water Health Advisories (HAs) for the cyanobacterial toxins microcystins and cylindrospermopsin to provide guidelines to water agencies in addressing these algal toxins, if present. HAs are issued by the EPA to describe non-regulatory concentrations of drinking water contaminants at which adverse effects are not anticipated to occur over specific exposure durations. Cyanobacterial toxins are naturally occurring and are found in some blue-green algae. Recently, Zone 7 collaborated with other South Bay Aqueduct contractors to evaluate toxin removal efficiency by different treatment technologies currently used by contractors. Although Chlorine combined with other conventional treatment methods used at Zone 7 treatment plants is effective in removing some of the cyanobacterial toxins, the best technique identified by the Study was the use of ozone. DWR provides algal toxin monitoring throughout the State Water Project. In addition, Zone 7 implemented its own algal toxins monitoring in 2016. The ozonation project at Zone 7's Del Valle Water Treatment Plant, currently in the design phase, is scheduled to be online by 2019 assuming Zone 7 is able to secure financing for the construction phase. The project's primary goals are to provide T&O improvements, reduce disinfection by-products, and provide a more effective tool for removal of cyanobacterial toxins.

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 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 primary 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.

Chromium 6 (Cr6) MCL Compliance for Chain of Lakes Well No. 5

For MCL compliance, COL 5 water is blended with other COL well/s prior to entry into the distribution system in accordance with a blending plan approved by the State Division of Drinking Water. Blending sampling location is El Charro Pipeline. Monthly sample is collected whenever COL 5 well is used for supply. Blending station Cr6 data from 2015 is listed below:

Units	MCL	PHG	Average	Range
ug/L	10	0.02	9	8-10

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 45 mg/L 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 45 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 5 mg/L) as compared to groundwater, but both sources meet all standards.

HARDNESS is caused by naturally-occurring minerals such as calcium and magnesium. Hard water does not pose a health risk, and is not covered by state or federal drinking water regulations. Groundwater is typically harder than surface water, but it is just as safe.

SODIUM is an essential nutrient that is found naturally in drinking water. Zone 7 also adds sodium hypochlorite as part of its disinfection process and sodium hydroxide for corrosion control. Sodium is not regulated because sodium levels in drinking water are usually low and are not likely to cause adverse health effects—even for those watching their salt intake. However, Zone 7 monitors sodium levels because some consumers are concerned about their sodium levels and may be monitoring their diets.

JANUARY-DECEMBER 2015 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]		
Total coliform bacteria	More than 5.0 % of monthly samples are positive		(0)	Highest percentage of monthly positive samples	
				1.2%	
Total trihalomethanes (TTHMs), µg/L	80	1*	NA	Highest Locational Running Annual Average	Range of all samples collected in 2015
				70	44 - 114
Haloacetic acids (five) (HAA5), µg/L	60	1*	NA	24	13 - 31
Chloramines as Chlorine, mg/L	Maximum Residual Disifectant		[4]	System wide Running Annual Average (RAA)	Range of Monthly Average Chloramines
	Level (MRDL) = 4.0			2.3	2.1 - 2.5

Units & Everyday Equivalents

mg/L=Milligrams per liter
µg/L=Micrograms per liter
pCi/L=Picocuries per liter
µS/cm=Microsiemens per centimeter

WATER SUPPLY SOURCES

CONTAMINANT				DEL VALLE WATER TREATMENT PLANT		PATTERSON PASS WATER TREATMENT PLANT		MOCHO WELLFIELD		STONERIDGE WELL		HOPYARD WELLFIELD		CHAIN OF LAKES WELLFIELD	
Turbidity	TT = 1 NTU Maximum		NA	Highest Level Found = 0.21 NTU		Highest Level Found = 0.28 NTU		NA		NA		NA		NA	
	TT = 95% of samples ≤ 0.3 NTU		NA	% of samples ≤ 0.3 NTU = 100		% of samples ≤ 0.3 NTU = 100		NA		NA		NA		NA	
Total Organic Carbon	TT = Quarterly RAA Removal Ratio ≥ 1.0		NA	Lowest Quarterly RAA Ratio = 1.7		Lowest Quarterly RAA Ratio = 1.7		NA		NA		NA		NA	
Inorganic Chemicals				**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**
Barium (µg/L)	1000	100	2000	ND	ND	ND	ND	140	NA	250	240 -260	110	NA	246	220 - 260
Chromium total (µg/L)	50	10	(100)	ND	ND	ND	ND	ND	NA	ND	ND - 10	ND	NA	ND	ND - 10
Chromium 6 (Cr6) (µg/L)**	10	1	0.02	ND	NA	ND	NA	6	5 - 8	9	9 - 10	6	5 - 7	10	8 - 11
Fluoride (mg/L)	2	0.1	1	ND	0.1	ND	ND - 0.1	ND	NA	ND	ND	0.1	NA	ND	ND - 0.1
Nitrate (as N) (mg/L)	10	0.4	10	ND	ND - 1.5	ND	ND - 1.5	3.0	NA	4.3	4.0 - 4.5	3.0	NA	4.2	3.5 - 5.0
Radionuclides Uranium (pCi/L)	20	1	0.43	ND	ND	ND	ND	1	NA	ND	ND - 1	3	NA	ND	ND
SECONDARY DRINKING WATER STANDARDS, established by DDW															
Color	15	0	--	0	0	0	0 - 2.5	0	NA	0	0	0	NA	0	0
Conductivity (µS/cm)	1600		--	808	664 - 1003	740	570 - 864	1006	NA	789	773 - 805	1011	NA	746	673 - 821
Chloride (mg/L)	500		--	172	119 - 226	151	96 -187	116	NA	69	68 - 69	87	NA	66	52 - 79
Sulfate (mg/L)	500	0.5	--	42	25 - 53	41	25 - 55	70	NA	49	47 - 50	82	NA	43	38 - 49
Total Dissolved Solids (mg/L)	1000		--	446	359 - 600	408	311 -503	586	NA	459	458 - 460	614	NA	436	392 - 485
Turbidity (NTU)	5	(0.05)	--	NA	NA	NA	NA	ND	NA	0.06	0.05 - 0.06	ND	NA	0.1	ND - 0.3
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)	--		--	86	72 - 112	85	65 - 97	276	NA	263	255 - 270	329	NA	232	210 - 255
Boron (µg/L)	--	100	--	230	180 - 290	230	130 - 300	680	NA	490	460 - 520	530	NA	288	220 - 340
Total Hardness as calcium carbonate (mg/L)	--		--	134	108 - 158	131	108 - 157	403	NA	308	306 - 310	402	NA	316	290 - 361
Potassium (mg/L)	--		--	4	2 - 5	4	2 - 5	1	NA	1	1	1	NA	1	1 - 2
Sodium (mg/L)	--		--	104	70 - 142	92	63 -121	50	NA	50	50	72	NA	38	33 - 41
pH (Units)	--		--	8.1	7.6 - 8.2	8.1	7.7 -8.3	7.5	NA	7.7	7.6 - 7.7	7.5	NA	7.4	7.3 -7.5
Silica (mg/L)	--		--	9	2 -17	10	2 - 16	21	NA	26	26 - 26	24	NA	25	24 - 27

* = TTHMs 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. ** = Treatment Plants, Mocho and Hopyard wellfield latest data for Cr6 is from 2011 and COI 1 & 2 data is from 2014.
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, 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.

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 U.S. Environmental Protection Agency and the state Department of Public Health 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 that must provide the same protection for public health. More information is available on the EPA's website, *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.

BARIUM 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.

URANIUM 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.

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
1,1-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	

Inorganic Chemicals		Radionuclides**	
Aluminum	Cyanide	Radium-226, Radium-228	Beta/photon emitters
Antimony	Mercury	Gross Alpha particle activity	Tritium, Strontium-90
Arsenic	Nickel		
Asbestos*	Nitrite (as nitrogen)		
Beryllium	Perchlorate		
Cadmium	Selenium		
	Thallium		

None of the primary standards listed above were detected at or above DLR in Zone 7 water supply during 2015 monitoring.

* Latest monitoring for Asbestos was conducted in 2011.

** Based upon low vunerability, the California Department of Public Health (the predecessor to the State Water Board's Division of Drinking Water) 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 2008. 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 the CDDW approval, Compliance Monitoring is conducted once every three years. Data from June 16, 2015 monitoring is summarized below:

Contaminant	No. of Samples Collected	90th Percentile Level Detected	Number of Sites Exceeding AL	Action Level (AL)	PHG
Lead (ug/L)	15	13	None	15	0.2
Copper (ug/L)	15	630	None	1300	300

ND = Not detected at or above 5 ug/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 http://www.epa.gov/safewater/lead.

About Water Treatment

State Water Project 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 three facilities for the treatment of surface water: the Patterson Pass Conventional, the Patterson Pass Ultrafiltration, 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 plants 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. Groundwater may also be treated by reverse osmosis 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 State Water Project via the Delta and the South Bay Aqueduct*.

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 State Water Project.

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

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).

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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.)