ANNUAL CONSUMER CONFIDENCE REPORT

Quality on Tap: 1999

This is an annual report on the quality of drinking water delivered by the Zone 7 Water Agency. We are proud to report that during calendar year 1999, as in years past, your tap water met or exceeded all federal and state standards for drinking water.

Water quality is "24/7" Zone 7. Using state-of-the-art treatment and monitoring methods, highly qualified and well-trained personnel ensure that the water you and your family use meets or exceeds the most rigorous standards. In order to ensure that tap water is safe to drink, the California Department of Health Services (DHS) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. We treat our water according to the Department's regulations, which are at least as, and in many cases, more stringent than federal (U.S. EPA) standards.

As a consumer, you have a right to know what is in your drinking water and where that water comes from.We hope this report provides answers to questions you may have so that you may make informed choices. For more information, please contact Gurpal Deol, Zone 7 Water Quality Laboratory Supervisor, at (925) 447-0533.

There are many opportunities for you, as a member of the public, to participate in decisions surrounding water quality. Regular meetings of the Zone 7 Board of Directors are open to the public and are scheduled the third Wednesday of each month at 7 p.m. in the Board Room. Special meetings, also open to the public, are held as needed. Meeting agendas are posted online at Zone 7's website(www.zone7water.com) or are available by calling (925) 484-2600, Ext. 223.

A WORD ABOUT CONTAMINANTS

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 EPA'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. U.S. EPA/Centers for Disease

What Is Zone 7?

Zone 7 is one of 10 active zones of the Alameda County Flood Control and Water Conservation District, a public agency established by voters in 1949 to address the county's water supply, drainage, and flood control problems.

Zone 7's service area encompasses all of eastern Alameda County, or about 425 square miles, including the Cities of Pleasanton, Livermore, and Dublin, and surrounding areas. Zone 7 is governed by a seven-member board of directors elected at large to four-year terms.

Although the area's more than 166,000 residents may not have direct contact with Zone 7, water piped to their homes is treated and wholesaled by Zone 7 to local retailers: the Cities of Livermore and Pleasanton, the Dublin San Ramon Services District, and the California Water Service Company. Zone 7 also distributes untreated water to agricultural and golf course users.

because it is a good indicator of the effectiveness of our treatment plants' filtration systems.

Zone 7 monitors raw water once per quarter for Giardia and Cryptosporidium. There were no detections during 1999.

WHERE CONTAMINANTS COME FROM

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

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from

JANUARY – DECEMBER 1999 WATER QUALITY DATA

PRIMARY STANDARDS — Mandatory Health-Related Standards, es

DISTRIBUTION SYSTEM

CONTAMINANT	MCL	PHG MCLG*		
Total trihalomethanes (THMs) (ug/L)	100	NA	Highest annual average: 49	Range of individ: ND –
Total coliform bacteria	5% of monthly samples are positive	0*	Highest percentage of monthly positive samples: 1.0%	

WATER SUPPLY SOURCES

CONTAMINANT	MCL	PHG MCLG*	DEL VALLE WATER TREATMENT PLANT		PATTERSO WATER TREATM
Turbidity	TT = 5 NTU	NA	Highest Level Found: 0.15 NTU		Highest Lev: 0.12 N
	TT = percentage of samples < 0.5 NTU	NA	Lowest percentage of samples < 0.5 NTU: 100%		Lowest percentage of: 100
Inorganic Chemicals			Highest Level Found	Range	Highest Level Found
Aluminum (mg/L)	1	NA	ND	ND	0.065
Arsenic (ug/L)	50	NA	ND	ND	ND
Barium (mg/L)	1	2*	ND	ND	ND
Chromium (ug/L)	50	2.5*	ND	ND	ND
Fluoride (mg/L)	2	1	0.2	0.1 - 0.2	0.1
Nitrate (as NO3) (mg/L)	45	45	5.23	0.89 - 5.23	5.31
					SECONDARY STANDARD
Conductivity (umhos/cm)	900 (a)	-	827	270 - 827	673
Chloride (mg/L)	250 (a)	-	177	23 - 177	125
Sulfate (mg/L)	250 (a)	-	83	14 - 83	86
Total Dissolved Solids (mg/L)	500 (a)	-	438	166 - 438	362
					Additional Parameters — included to assist consumers in making hea
			Average	Range	Average
Corrosivity (Units)	(b)	-	12.5	12.3 - 12.8	12.4
Alkalinity (as CACO3) (mg/L)	-	-	74	59 - 112	72
Hardness (as CaCO3) (mg/L)	-	-	96	59 - 140	91
Calcium (mg/L)	-	-	21	14 - 28	21
Magnesium (mg/L)	-	-	10	6.1 - 18	10
Potassium (mg/L)	-	-	2.2	1.3 - 4.0	2.2
Sodium (mg/L)	-	-	54	30 - 107	50
pH (units)	-	-	8.9	8.6 - 9.2	8.9
boron (mg/L)	-	-	0.3	ND - 0.5	0.3
Silica (mg/L)	-	-	12.2	9.22 - 15.1	12.9
Total Organic Carbon (mg/L)	-	-	1.87	1.23 - 2.62	2.03

(a) DHS recommended limit, (b) Zone 7 strives to supply non-aggressive water (Corrosivity > 12) by pH adjustment.
Abbreviations/Units: MCL = Maximum Contaminant Level, PHG = Public Health Goal, MCLG = Maximum Contaminant Goal, NA = Not Available, TT = Treatmnt echnique, NTU = Nephelometric Turbi
ND = Monitored but not detected. ND in the range column indicates that more than one analysis performed.

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, that are byproducts of industrial processes and petroleum production, and 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.

MAJOR SOURCES FOR DETECTED PRIMARY STANDARDS

Aluminum Erosion from natural deposits; from alum use as a coagulant.

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

Barium Discharge of drilling wastes; discharge from metal refineries; ero-

A — CONTAMINANTS DETECTED IN WATER SUPPLY

tablished by the State of California Department of Health Services

dual samples	
60	

ON PASS MENT PLANT	MOCHO WELLFIELD		STONERIDGE WELL		HOPYARD 6 – ASR WELL Aquifer Storage Recovery (ASR)	
vel Found	Highest Level Found	Range	Highest Level Found	Range	Highest Level Found	Range
NTU	0.18	0.06 – 0.18	0.18	0.04 -0.18	0.32	0.04 -0.32
f samples < 0.5 NTU	Not applicable		Not applicable		Not applicable	
%						
Range	Highest Level Found	Range	Highest Level Found	Range	Highest Level Found	Range
ND - 0.065	ND	ND	ND	ND	ND	ND
ND	ND	ND	2.4	ND - 2.4	ND	ND
ND	0.29	0.12 - 0.29	0.30	0.18–0.30	ND	ND
ND	16	ND - 16	16	ND - 16	ND	ND
0.1 - 0.1	0.1	0.1 - 0.1	0.2	0.1 - 0.2	0.2	0.1 - 0.2
0.53 - 5.31	14.8	11.3 - 14.8	16.1	10.8 - 16.1	8.90	2.61 - 8.90
S — Aesthetic Standards						
252 - 673	932	701 - 932	956	608 - 956	778	402 - 778
23 - 125	87	51 - 87	52	33 - 52	147	39 - 147
22 - 86	67	32 - 67	37	32 - 37	64	33 - 64
147 - 362	522	374 - 522	380	348 - 380	410	220 - 410
lth or economic decisions, i.e. low sodium diet, water softening, etc.						
Range	Average	Range	Average	Range	Average	Range
12.2 - 12.8	12.3	12.1 -12.4	12.4	12.2 - 12.5	12.3	11.9 - 12.6
56 - 108	267	237 - 288	240	234 - 248	128	59 - 202
61 -134	358	277 - 397	238	222 - 273	145	82 - 221
14 - 28	70	52 - 79	47	43 - 53	33	18 - 54
5.8 - 16	44	36 - 52	29	27 - 34	15	8.7 - 21
1.3 - 3.8	1.8	1.7 - 1.9	1.8	1.6 - 2.3	2.1	1.8 - 3.9
26 - 83	40	27 - 46	42	41 - 44	56	40 - 92
8.6 - 9.1	7.6	7.4 - 7.9	7.9	7.7 - 8.1	8.3	7.7 - 8.8
0.1 - 1.0	0.6	0.3 - 1.3	0.3	0.2 - 0.4	0.5	0.2 - 1.0
9.91 - 16.6	26.5	24.0 - 30.6	28.2	25.9 - 32.9	16.9	12.0 - 21.4
1.71 - 2.61	0.71	ND - 0.87	0.55	ND - 0.87	1.32	0.93 - 2.07

dity Unit, ug/L = Micrograms per liter or parts per billion, mg/L = Milligrams per liter or parts per million,

In July 1997 Zone 7 initiated an 18-month data collection effort to comply with EPA's Information Collection Rule (ICR). This data will be used for future regulations. Monitoring requirements under the ICR included those for Cryptosporidium, Giardia, viruses, disinfectants/disinfection by-products (D/DBPs), miscellaneous water quality parameters, and treatment plant operational data. DBP data from ICR monitoring is summarized below:

INFORMATION COLLECTION RULE (ICR) DISINFECTION BYPRODUCTs (DBPs)

July 1997 – December 1998

		DEL VALLE WATER TREATMENT PLANT		PATTERSON PASS WATER TREATMENT PLANT	
DBP	Units	RANGE	AVERAGE	RANGE	AVERAGE
Trihalomethanes (THM4)	ug/L	32 – 51	41	34 – 93	58
Haloacetic acids (HAA5)	ug/L	14 – 40	24	22 – 50	30
Haloactonitriles (HAN)	ug/L	3.0 – 7.5	5.5	4.5 – 11	7.7
Haloketones (HK)	ug/L	0.5 – 2.7	1.7	ND – 2.2	1.6
Chloropicrin	ug/L	0.5 – 1.8	0.6	ND – 1.0	0.6
Chloral hydrate	ug/L	ND – 2.4	1.3	ND – 2.1	1.0
Total Organic Halides (TOX)	ug/L	105 – 175	135	105 – 220	142
Cyanogen chloride	ug/L	2.7 – 4.2	3.3	2.6 – 7.4	4.9
Chlorate	ug/L	70 – 134	94	NA	NA
Disinfectant residual (total chlorine)	mg/L	1.87 - 2.80	2.22	1.96 - 2.70	2.35

ug/L = Micrograms per liter or parts per billion
mg/L = Milligrams per liter or parts per million
ND = Not detected
NA = Not Applicable
Trihalomethanes = Sum of chloroform, bromodichloromethane, dibromochloromethane, and bromoform.
Haloacetic acids = Sum of mono-, di-, and trichloroacetic acid, and mono- and dibromoacetic acid.
Haloacetonitriles = Sum of dichloro-, trichloro-, bromochloro-, and dibromoacetonitrile.
Haloketones = Sum of 1,1-dichloropropanone and 1,1,1-trichloropropanone.

ZONE 7 SAMPLING FREQUENCY VERSUS DHS REQUIREMENTS

SURFACE WATER SUPPLY

PARAMETER	DHS REQUIREMENT	ZONE 7
Asbestos	Once every 9 years	Once every 9 years
Inorganic Chemicals	Once per year	Monthly
VOCs	Once per year	Semiannually
SOCs	Waived	Semiannually *
EDB and DBCP**	Once per year	Semiannually
Radionuclides	Every four years	Every four years

GROUNDWATER SUPPLY ***

PARAMETER	DHS REQUIREMENT	ZONE 7
Inorganic Chemicals	Once per year	Semiannually

DISTRIBUTION SYSTEM

PARAMETER	DHS REQUIREMENT	ZONE 7
Bacteriological	Weekly	Weekly
Trihalomethanes	Quarterly	Quarterly

* In-house certified methods only.
** EDB = Ethylene dibromide and DBCP = 1,2-Dibromo-3-chloropropane
*** Parameters with different monitoring frequency and requirements from surface water.

THE WATER TREATMENT PROCESS

Raw surface water entering Zone 7's Del Valle and Patterson Pass Water Treatment Plants goes through a number of steps to make it safe to drink. These processes have been approved by the California Department of Health Services and are strictly monitored by Zone 7 staff. They include the following.

• Flash-mixing/coagulation begins the process of turbidity removal. Turbidity is the fine particulate matter that clouds water. Coagulants such as alum (aluminum sulfate) or ferric chloride and special polymers are rapidly mixed with the water, altering the suspended particles' electrical charges and causing them to come together into larger particles, or "floc." During 1999 Zone 7 initiated a one-year test of ferric chloride as a coagulant at Del Valle Water Treatment Plant. Ferric has proven to be very effective for TOC (total organic compound) removal. It is likely that Zone 7 will request the DHS to allow it to use either alum or ferric chloride as a primary coagulant.

• In the flocculation/sedimentation steps, the floc particles continue to collide, forming ever-heavier, settleable particles. The water moves slowly through a large basin so the floc particles can sink to the bottom for removal. Anywhere from 70 to 90 percent of suspended matter is removed by sedimentation. At the Del Valle Water Treatment Plant, flocculation/sedimentation are accomplished by a special "super-pulsation" process. At Patterson Pass Water Treatment plant, flocculation/sedimentation are performed in an up-flow solids contact clarifier.

• The filtration process "polishes" the water, further removing particles

and pathogens. The water passes through a dual-media filter made of sand and anthracite coal, which traps the particles. The filters are backwashed, or cleaned, frequently to remove accumulated matter. Nearly 100 percent of suspended matter is removed after the filtration process. Protozoan pathogens such as Giardia and Cryptosporidium are also removed during the filtration process.

• Disinfection is the key to destroying harmful bacteria, parasites, viruses, and other pathogens. Chlorine is used as the primary disinfectant, and chloramines (chlorine/ammonia combination) are added to maintain disinfection after the water leaves the treatment plant and enters the distribution system. Chloramines also help reduce the additional formation of disinfection byproducts.

ZONE 7 WATER AGENCY
5997 Parkside Drive
Pleasanton, California 94588-5127

Phone: (925) 484-2600
Fax: (925) 462-3914

www.zone7water.com

EPA SAFE DRINKING WATER HOTLINE
1-800-426-4791

PRINTED ON RECYCLED PAPER WITH SOY-BASED

PRIMARY STANDARDS

ORGANIC CHEMICALS

Volatile Organic Chemicals (VOCs)
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-Dichloropropene
Ethylbenzene
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

Synthetic Organic Chemicals (SOCs)**
Alachlor*
Atrazine*
Bentazon
Benzo(a)pyrene*
Carbofuran
Chlordane
2,4-D
Dalapon
1,2-Dibromo-3-chloropropane*
Di(2-ethylhexyl)adipate*
Di(2-ethylhexyl)phthalate*
Dinoseb
Diquat
Endothall
Endrin*
Ethylene Dibromide*
Glyphosate
Heptachlor*
Heptachlor Epoxide*
Hexachlorobenzene*
Hexachlorocyclopentadiene*
Lindane*
Methoxychlor*
Molinate*
Oxamyl
Pentachlorophenol
Picloram
Polychlorinated Biphenyls
Simazine*
Thiobencarb*
Toxaphene
2,3,7,8-TCDD (Dioxin)***
2,4,5-TP (Silvex)

INORGANIC CHEMICALS

Antimony
Asbestos***
Beryllium
Cadmium
Cyanide***
Mercury
Nickel
Nitrite (as nitrogen
Selenium
Thallium

RADIONUCLIDES****

Combined Radium-226 and Radium-228
Gross Alpha particle activity
Tritium, Strontium-90, Uranium

None of the primary contaminants listed above were detected in Zone 7 water supply.

* Zone 7 in-house monitoring

** Due to low vulnerability, a monitoring waiver for SOCs (except EDB and DBCP) and cyanide was granted for 3rd compliance period (1999–2001). Latest complete SOCs monitoring conducted in 1996.

*** Latest monitoring conducted in 1993.

****Latest monitoring conducted in 1996.

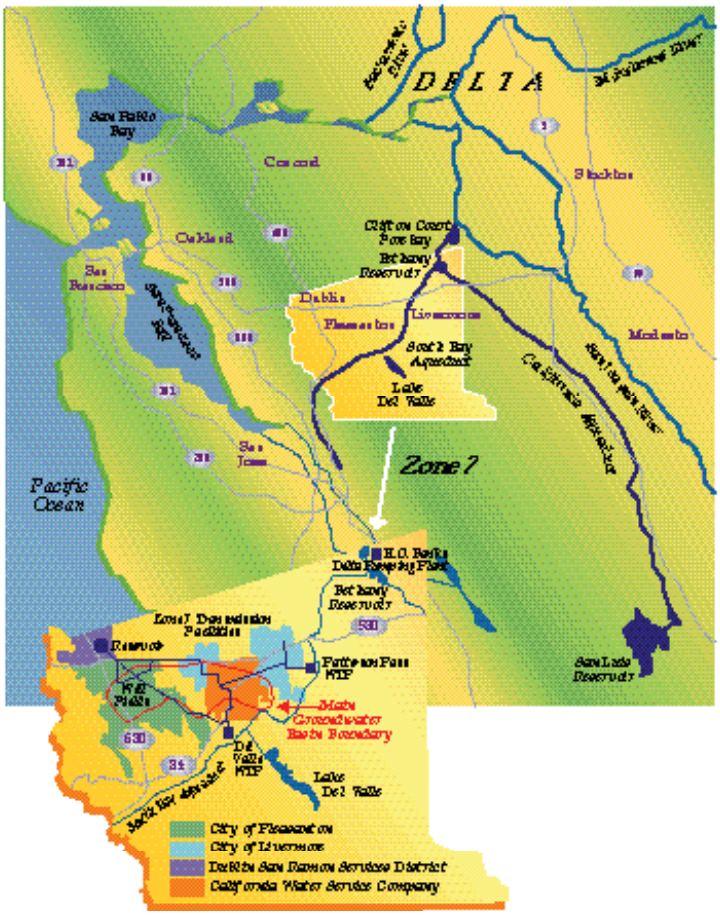
SOURCES OF WATER

The primary source of Zone 7's supply is surface water from the State Water Project. Originating north of the Sacramento-San Joaquin Delta in the Feather River watershed, state water is brought into the Valley by the South Bay Aqueduct.

A second source of surface water is the local supply conserved in Lake Del Valle. The area's third major water source is groundwater pumped from the Livermore-Amador Valley Groundwater Basin with its Bernal (west), Amador, and Mocho (east) sub-basins. The groundwater basin stores water against times of drought and helps meet peak summer demands.

Surface water is treated at Zone 7's two water treatment plants, Del Valle and Patterson Pass. Groundwater is disinfected to protect you against microbial contaminants.

While much attention is directed toward providing excellent treatment to achieve drinking water quality, Zone 7 recognizes the importance of protecting source water from contamination. The Agency has long been involved in matters surrounding the Delta, the source of our surface supply, and in protecting the groundwater basin from contamination and increasing salinity through monitoring and management programs. As a resident, you can do your part to prevent pollution by using yard and garden chemicals wisely, keeping your car free from oil leaks and recycling automotive fluids, and following other tips available from Zone 7.



DEFINITIONS OF KEY TERMS

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

• Maximum Contaminant Level Goal (MCLG) The level of a contaminant in drinking water below which there is no known or to health. MCLGs e U.S. Environmen-

• Treatment Technique A required process intended to reduce the level of a contaminant in drinking water.

DETECTED CONTAMINANTS

The following table shows the highest level of each detected regulated contaminant and average level of each detected additional contaminant, and, if more than one sample was collected for compliance purposes, the range of levels found during the year.

In addition to the regulated organic contaminants, Zone 7 monitors unregulated contaminants for regulation requirements. Unregulated contaminant monitoring helps EPA and the DHS to determine where certain contaminants occur and whether the contaminants need to be regulated in the future. Zone 7's frequency for monitoring unregulated organic contaminants is the same as for regulated organics.

TTHMS (Total Trihalomethanes) are by-products of drinking water disinfection (chlorination). Some people who use water containing TTHMS in excess of the MCL over many years may experience liver, kidney, or central nervous system problems and may have an increased risk of getting cancer.

MTBE All Zone 7 water supply sources were monitored three times for MTBE during year 1999. MTBE was not detected in any source at or above current DLR (detection limit for reporting purposes) of 3 ppb.

Turbidity is a measure of the cloudiness of the water. We monitor it