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DEPARTMENT OF
UTILITIES

PLANT SERVICES DIVISION
WATER PRODUCTION

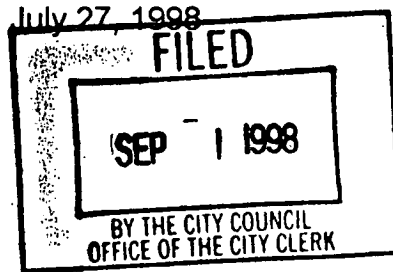
CITY OF SACRAMENTO
CALIFORNIA

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City Council
Sacramento, California



Honorable Members in Session:

SUBJECT: REQUIRED REPORT ON PUBLIC HEALTH GOALS

LOCATION AND COUNCIL DISTRICT: Citywide

STAFF RECOMMENDATION: No City Council action is required on this item. The attached report is intended to provide information to the public in addition to Annual Water Quality Reports mailed to each customer.

CONTACT PERSON:

Michael Yee, Plant Services Division Manager, 264-5594
Roland Pang, Water and Sewer Superintendent, 382-3119

FOR COUNCIL MEETING OF: September 1, 1998

SUMMARY:

SB 1307 (Calderone-Sher; effective 1-1-97) mandates that a report be prepared to provide information to the public in addition to the Annual Water Quality Report which is mailed to each customer. The new law requires that a public hearing be held, which can be part of a regularly scheduled public meeting, for the purpose of accepting and responding to public comment on the report. This public hearing is scheduled as part of the City Council meeting and has been advertised as required for public hearings.

COMMITTEE/COMMISSION ACTION:

There is no action required for this report.

BACKGROUND INFORMATION:

- SB 1307 (Calderone-Sher: effective 1-1-97) added new provisions to the California Health and Safety Code which mandates that a report be prepared by July 1, 1998. This report compares our City's drinking water quality with public health goals, (PHGs) adopted by California EPA's Office of Environmental Health Hazard Assessment (OEHHA) and with maximum contaminant level goals (MCLGs) adopted by the USEPA.
- PHGs and MCLGs are not enforceable standards and no action to meet them is mandated.
- The City's water system complies with all of the health-based drinking water standards and maximum contaminant levels (MCLs) required by the California Department of Health Services and the USEPA.
- The new law requires that a public hearing be held, for the purpose of accepting and responding to public comment on the report.

FINANCIAL CONSIDERATIONS:

This report has no fiscal implications.

ENVIRONMENTAL CONSIDERATIONS:

CEQA does not apply to this item.


POLICY CONSIDERATIONS:

There are no policy considerations associated with this item.

MBE/WBE EFFORTS:

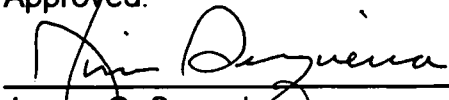
No goods or services are being purchased under this report.

Respectfully submitted,



Michael Yee
Plant Services Division Manager

Approved:



James G. Sequeira
Director of Utilities

FOR CITY COUNCIL INFORMATION



WILLIAM H. EDGAR
City Manager

CITY OF SACRAMENTO DEPARTMENT OF UTILITIES
REPORT ON CITY'S WATER QUALITY
RELATIVE TO PUBLIC HEALTH GOALS

Background:

Recently enacted provisions of the California Health and Safety Code (Reference No. 1) specify that larger (>10,000 service connections) water utilities are required to prepare a special report by July 1, 1998 if their water quality measurements have exceeded any Public Health Goals (PHGs) which are non-enforceable goals established by the Cal-EPA's Office of Environmental Health Hazard Assessment (OEHHA). The first 27 of these PHGs were adopted by OEHHA on December 31, 1997, but the PHG for uranium was later withdrawn. The law also requires that where OEHHA has not adopted a PHG for a constituent, the water suppliers are to use the maximum contaminant level goals (MCLGs) adopted by United States Environmental Protection Agency (USEPA). Only constituents which have a California primary drinking water standard and for which either a PHG or MCLG has been set are to be addressed. (Reference No. 2 is a list of all regulated constituents with the maximum contaminant levels (MCLs) and PHGs or MCLGs.)

There are a few constituents that are routinely detected in water systems at levels usually well below the drinking water standards for which no PHG nor MCLG has yet been adopted by OEHHA or USEPA. These include Total Trihalomethanes and radionuclides. These will be addressed in a future required report after a PHG has been adopted.

The new law specifies what information is to be provided in the report. (See Reference No. 1).

If a constituent was detected in the City's water supply in 1997 at a level exceeding an applicable PHG or MCLG, this report provides the information required by the law. Included is the numerical public health risk associated with the MCL and the PHG or MCLG (OEHHA is required to provide numerical health risk information, but has not done so in time to include it in this report), the category or type of risk to health that could be associated with each constituent, the best treatment technology available that could be used to reduce the constituent level, and an estimate of the cost to install that treatment if it is appropriate and feasible.

What are PHGs?:

PHGs are set by the California Office of Environmental Health Hazard Assessment (OEHHA) which is part of Cal-EPA and are based solely on public health risk considerations. None of the practical risk-management factors that are considered by the USEPA or the California Department of Health Services (CDHS) in setting drinking water standards (MCLs) are considered in setting the PHGs. These factors include analytical detection capability, treatment technology available, benefits and costs. The PHGs are not enforceable and are not required to be met by any public water system. MCLGs are the federal equivalent to PHGs.

Water Quality Data Considered:

All of the water quality data collected by our water system in 1996-97 for purposes of determining compliance with drinking water standards was considered. This data was all summarized in our 1996-97 Annual Water Quality Report which has been mailed to all of our customers in January 1998. (Reference No. 3)

Guidelines Followed:

The Association of California Water Agencies (ACWA) formed a workgroup which prepared guidelines for water utilities to use in preparing these newly required reports. The ACWA guidelines were used in the preparation of our report. No guidance was available from state regulatory agencies.

Best Available Treatment Technology and Cost Estimates:

Both the USEPA and CDHS adopt what are known as BATs or Best Available Technologies which are the best known methods of reducing contaminant levels to the MCL. Costs can be estimated for such technologies. However, since many PHGs and all MCLGs are set much lower than the MCL, it is not always possible nor feasible to determine what treatment is needed to further reduce a constituent downward to or near the PHG or MCLG, many of which are set at zero. Estimating the costs to reduce a constituent to zero is difficult, if not impossible because it is not possible to verify by analytical means that the level has been lowered to zero. In some cases, installing treatment to try and further reduce very low levels of one constituent may have adverse effects on other aspects of water quality.

Constituents Detected That Exceed a PHG or a MCLG:

The following is a discussion of constituents that were detected in one or more of our drinking water sources at levels above the PHG, or if no PHG, above the MCLG.

Tetrachloroethylene (PCE):

There is no PHG for PCE but the MCLG set by the USEPA is zero. The MCL or drinking water standard for PCE is 0.005 mg/l. We have detected PCE in 1 of our 29 active wells at a level of 0.002 mg/l in Well No. 136. The levels detected were below the MCLs at all times. The category of health risk associated with PCE, and the reason that a drinking water standard was adopted for it, is that people who drink water containing PCE above the MCL throughout their lifetime could experience an increased risk of getting cancer. CDHS says that "Drinking water that meets the California Department of Health Services standard is associated with little to none of this risk and is considered safe with respect to tetrachloroethylene." The numerical health risk for a MCLG of zero is zero. The BAT for PCE to lower the level below the MCL is either Granular Activated Carbon (GAC) or Packed Tower Aeration (PTA). Since the PCE level in this well is already below the MCL, GAC with a long empty bed contact time (EBCT) would likely be required to attempt to lower the PCE level to zero. The estimated cost to install and operate such a treatment system on Well No. 136 that would reliably reduce the PCE level to zero would be approximately \$250,000 initial construction cost with additional O & M cost of \$36,000 per year. This would result in an assumed increased user fee of approximately 1.0% during the first year (first year only) and an assumed increased user fee of approximately 0.1% for the following years.

Coliform Bacteria:

In the month of July 1996, we collected 241 samples from our distribution system for coliform analysis. Of these samples, less than 1.0% (0.83%) were positive for coliform bacteria. This was the maximum percentage of positive samples for any of the twelve months of the 1996-97 fiscal year.

The MCL for coliform is 5% positive samples of all samples per month and the MCLG is zero. The reason for the coliform drinking water standard is to minimize the possibility of the water containing pathogens which are organisms that cause waterborne disease. Because coliform is only a surrogate indicator of the potential presence of pathogens, it is not possible to state a specific numerical health risk. While USEPA normally sets MCLGs "at a level where no known or anticipated adverse effects on persons would occur", they indicate that they cannot do so with coliforms.

Coliform bacteria are an indicator organism that are ubiquitous in nature and are not generally considered harmful. They are used because of the ease in monitoring and analysis. If a positive sample is found, it indicates a potential problem that needs to be investigated and follow up sampling done. It is not at all unusual for a system to have an occasional positive sample. It is difficult, if not impossible, to assure that a system will never get a positive sample.

We add chlorine at our sources to assure that the water served is microbiologically safe. The chlorine residual levels are carefully controlled to provide the best health protection without causing the water to have undesirable taste and odor or increasing the disinfection byproduct level. This careful balance of treatment processes is essential to continue supplying our customers with safe drinking water.

Other equally important measures that we have implemented include: an effective cross-connection control program, maintenance of a disinfectant residual throughout our system, an effective monitoring and surveillance program and maintaining positive pressures in our distribution system. Our system has already taken all of the steps described by CDHS as "best available technology" for coliform bacteria in Section 64447, Title 22, CCR.

RECOMMENDATIONS FOR FURTHER ACTION:

The drinking water quality of the City of Sacramento Department of Utilities meets all State of California, Department of Health Services and USEPA drinking water standards set to protect public health. To further reduce the levels of the constituents identified in this report that are already significantly below the health-based Maximum Contaminant Levels established to provide "safe drinking water", additional costly treatment processes would be required. The effectiveness of the treatment processes to provide any significant reductions in constituent levels at these already low values is uncertain. The health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed.

REFERENCES:

- No. 1 Excerpt from California Health and Safety Code: Section 116470 (b)
- No. 2 Table of Regulated Constituents with MCLs, PHGs or MCLGs
- No. 3 City of Sacramento Department of Utilities' 1996-97 Water Quality Report

Reference No. 1

Excerpt from California Health and Safety Code Section 116470. "Annual report to consumers"

Section 116470

- (b) On or before July 1, 1998, and every three years thereafter, public water systems serving more than 10,000 service connections that detect one or more contaminants in drinking water that exceed the applicable public health goal, shall prepare a brief written report in plain language that does all of the following:
- (1) Identifies each contaminant detected in drinking water that exceeds the applicable public health goal.
 - (2) Discloses the numerical public health risk, determined by the office, associated with the maximum contaminant level for each contaminant identified in paragraph (1) and the numerical public health risk determined by the office associated with the public health goal for that contaminant.
 - (3) Identifies the category of risk to public health, including, but not limited to, carcinogenic, mutagenic, teratogenic, and acute toxicity, associated with exposure to the contaminant in drinking water, and includes a brief plainly worded description of these terms.
 - (4) Describes the best available technology, if any is then available on a commercial basis, to remove the contaminant or reduce the concentration of the contaminant. The public water system may, solely at its own discretion, briefly describe actions that have been taken on its own, or by other entities, to prevent the introduction of the contaminant into drinking water supplies.
 - (5) Estimates the aggregate cost and the cost per customer of utilizing the technology described in paragraph (4), if any, to reduce the concentration of that contaminant in drinking water to a level at or below the public health goal.
 - (6) Briefly describes what action, if any, the local water purveyor intends to take to reduce the concentration of the contaminant in public drinking water supplies and the basis for that decision.

PARAMETERS/ CONSTITUENTS	Units	STATE MCL	DLR	MCLG or (PHG)
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INORGANICS

ALUMINUM	mg/L	1	0.05	none
ANTIMONY	mg/L	0.006	0.006	(0.020)
ARSENIC	mg/L	0.05	0.002	none*
ASBESTOS	fibers/L	7 million	0.2 million	7 million
BIARIUM	mg/L	1	0.1	2
BERYLLIUM	mg/L	0.004	0.001	0.004
CADMIUM	mg/L	0.005	0.001	0.005
CHROMIUM	mg/L	0.05	0.01	0.1
COPPER (at-the-tap; 90th percentile)	mg/L	AL=1.3	0.05	(0.17)
CYANIDE	mg/L	0.2	0.1	(0.15)
FLUORIDE	mg/L	1.4-2.4	0.1	(1.0)
LEAD (at-the-tap; 90th percentile)	mg/L	AL=0.015	0.005	(0.002)
MERCURY	mg/L	0.002	0.001	0.002
NICKEL	mg/L	0.1	0.01	none
NITRATE [as N]	mg/L	10	0.4	(10)
NITRATE [as NO3]	mg/L	45	2	(45)
NITRITE [as N]	mg/L	1	0.4	(1)
SELENIUM	mg/L	0.05	0.005	0.05
THALLIUM	mg/L	0.002	0.001	0.0005

ORGANICS

ALACHLOR	mg/L	0.002	0.001	(0.004)
ATRAZINE	mg/L	0.003	0.001	0.003
BENTAZON	mg/L	0.018	0.002	none
BENZENE	mg/L	0.001	0.0005	0
BENZO (a) PYRENE	mg/L	0.0002	0.0001	(0.000004)
CARBOFURAN	mg/L	0.018	0.005	0.04
CARBON TETRACHLORIDE	mg/L	0.0005	0.0005	0
CHLORDANE	mg/L	0.0001	0.0001	(0.00003)
CHLOROETHENE [VINYL CHLORIDE]	mg/L	0.0005	0.0005	0
CIS-1,2-DICHLOROETHYLENE	mg/L	0.006	0.0005	0.07
2,4-D	mg/L	0.07	0.01	(0.07)
DALAPON	mg/L	0.2	0.01	(0.79)
DIBROMOCHLOROPROPANE [DBCP]	mg/L	0.0002	0.00001	0
1,2-DICHLOROBENZENE [ORTHO]	mg/L	0.6	0.0005	(0.6)
1,4-DICHLOROBENZENE [PARA]	mg/L	0.005	0.0005	(0.006)
1,1-DICHLOROETHANE [1,1-DCA]	mg/L	0.005	0.0005	none
1,2-DICHLOROETHANE [1,2-DCA]	mg/L	0.0005	0.0005	0
1,1-DICHLOROETHENE [1,1-DCE]	mg/L	0.006	0.0005	0.007
DICHLOROMETHANE	mg/L	0.005	0.0005	0
1,2-DICHLOROPROPANE	mg/L	0.005	0.0005	0
1,3-DICHLOROPROPENE	mg/L	0.0005	0.0005	none
DI (2-ETHYLHEXYL) ADIPATE	mg/L	0.4	0.005	0.4
DI (2-ETHYLHEXYL) PHTHALATE	mg/L	0.004	0.003	(0.012)
DINOSEB	mg/L	0.007	0.002	(0.014)
DIOXIN [2,3,7,8 - TCDD]	mg/L	3x10 ⁻⁸	5x10 ⁻⁹	0
DIQUAT	mg/L	0.02	0.004	0.02
ENDOTHALL	mg/L	0.1	0.045	(0.58)
ENDRIN	mg/L	0.002	0.0001	0.002

CALIFORNIA MCLs AND PHGs AND FEDERAL MCLGs

PARAMETERS/ CONSTITUENTS	Units	STATE MCL	DLR	MCLG or (PHG)
ETHYLBENZENE	mg/L	0.7	0.0005	(0.3)
ETHYLENE DIBROMIDE [EDB]	mg/L	0.00005	0.00002	0
GLYPHOSATE	mg/L	0.7	0.025	(1.0)
HEPTACHLOR	mg/L	0.00001	0.00001	0
HEPTACHLOR EPOXIDE	mg/L	0.00001	0.00001	0
HEXACHLOROBENZENE	mg/L	0.001	0.0005	0
HEXACHLOROCYCLOPENTADIENE	mg/L	0.05	0.001	0.05
LINDANE	mg/L	0.0002	0.0002	0.0002
METHOXYCHLOR	mg/L	0.04	0.01	0.04
MOLINATE	mg/L	0.02	0.002	none
MONOCHLOROBENZENE	mg/L	0.07	0.0005	0.1
OXAMYL	mg/L	0.2	0.02	(0.05)
PENTACHLOROPHENOL	mg/L	0.001	0.0002	(0.0004)
PICLORAM	mg/L	0.5	0.001	(0.5)
POLYCHLORINATED BIPHENYLS [PCBs]	mg/L	0.0005	0.0005	0
SILVEX [2,4,5-TP]	mg/L	0.05	0.001	0.05
SIMAZINE	mg/L	0.004	0.001	0.004
STYRENE	mg/L	0.1	0.0005	0.1
TETRACHLOROETHYLENE [PCE]	mg/L	0.005	0.0005	0
THIOBENCARB	mg/L	0.07	0.0010	none
TOLUENE	mg/L	0.15	0.0005	1.0
TOXAPHENE	mg/L	0.003	0.001	0
TRANS-1,2-DICHLOROETHYLENE	mg/L	0.01	0.0005	0.1
1,2,4-TRICHLOROBENZENE	mg/L	0.07	0.0005	0.07
1,1,1-TRICHLOROETHANE [1,1,1-TCA]	mg/L	0.200	0.0005	0.200
1,1,2-TRICHLOROETHANE [1,1,2-TCA]	mg/L	0.005	0.0005	0.003
TRICHLOROETHYLENE [TCE]	mg/L	0.005	0.0005	0
TRICHLOROFLUOROMETHANE (FREON 11)	mg/L	0.15	0.005	(0.70)
TRICHLOROTRIFLUOROETHANE (FREON 113)	mg/L	1.2	0.01	(4.0)
TRIHALOMETHANES, TOTAL [TTHMs]	mg/L	0.100	0.0005	none
XYLENES [SUM OF ISOMERS]	mg/L	1.750	0.0005	(1.800)

MICROBIOLOGICAL

COLIFORM % POSITIVE SAMPLES	%	5		zero
GIARDIA LAMBLIA		TT		zero
LEGIONELLA		TT		zero
VIRUSES		TT		zero

RADIOLOGICAL

ALPHA ACTIVITY, GROSS	pCi/L	15	1	none*
BETA ACTIVITY, GROSS	pCi/L	50	4	none*
RADIUM 226 & 228, TOTAL	pCi/L	5	1	none*
STRONTIUM 90	pCi/L	8		none
TRITIUM	pCi/L	20000		none
URANIUM	pCi/L	20	2	none*

MCL = Maximum Contaminant Level

DLR = Detection Limit for Reporting purposes; set by DHS

MCLG = Maximum Contaminant Level Goal

PHG = Public Health Goal

* = MCLGs were never finalized.



CITY OF SACRAMENTO DEPARTMENT OF UTILITIES

"DEDICATED TO PROVIDING SAFE, RELIABLE AND ENVIRONMENTALLY SENSITIVE WATER, DRAINAGE AND SEWER SERVICES TO OUR CUSTOMERS"

5770 FREEPORT BOULEVARD, SUITE 100, SACRAMENTO, CA 95822

CITY OF SACRAMENTO—WATER QUALITY ANNUAL REPORT

Data for Fiscal Year 1996-1997		Maximum Contaminant Level	City of Sacramento			
Parameter	Unit		Surface Water		Groundwater	
			Range	Average	Range	Average
PRIMARY STANDARDS—Mandatory; Health-Related Standard Established by Environmental Protection Agency						
CLARITY						
Turbidity	NTU	0.5	0.05-0.16	0.10	0.05-1.8	0.45
MICROBIOLOGICAL						
Coliform Bacteria	% Tests Positive	10	0.00-0.83	0.22	0.00-0.83	0.22
ORGANIC CHEMICALS						
Total Trihalomethanes	PPB	100	34-77	53	ND-38	=<3.7
Endrin	PPB	2	ND-ND	ND	ND-ND	ND
Lindane	PPB	0.2	ND-ND	ND	ND-ND	ND
Methoxychlor	PPB	40	ND-ND	ND	ND-ND	ND
Toxaphene	PPB	3	ND-ND	ND	ND-ND	ND
2,4-D	PPB	70	ND-ND	ND	ND-ND	ND
2,4,5-TP Silvex	PPB	50	ND-ND	ND	ND-ND	ND
Chlordane	PPB	0.1	ND-ND	ND	ND-ND	ND
Heptachlor	PPB	0.01	ND-ND	ND	ND-ND	ND
Heptachlor epoxide	PPB	0.01	ND-ND	ND	ND-ND	ND
Carbofuran	PPB	18	ND-ND	ND	NA	NA
Glyphosate	PPB	700	NA	NA	NA	NA
Di(2-ethylhexyl)adipate	PPB	400	NA	NA	NA	NA
Molinate (Ordram)	PPB	20	ND-ND	ND	ND-ND	ND
Thiobencarb (Bolero)	PPB	70	ND-ND	ND	ND-ND	ND
Bentazon (Basagran)	PPB	18	NA	NA	NA	NA
Atrazine	PPB	3	ND-ND	ND	ND-ND	ND
Simazine	PPB	4	ND-ND	ND	ND-ND	ND
Ethylene dibromide	PPB	0.05	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	PPB	0.2	NA	NA	NA	NA
Di(2-ethylhexyl)phthalate	PPB	4	NA	NA	NA	NA
VOLATILE ORGANIC CHEMICALS						
Trichloroethylene (TCE)	PPB	5	ND-ND	ND	ND-ND	ND
Tetrachloroethylene (PCE)	PPB	5	ND-ND	ND	ND-2.1	ND
1,1,1 Trichloroethane	PPB	200	ND-ND	ND	ND-ND	ND
1,1 Dichloroethylene	PPB	6	ND-ND	ND	ND-ND	ND
Benzene	PPB	1	ND-ND	ND	ND-ND	ND
Total xylenes	PPB	1750	ND-ND	ND	ND-ND	ND
Chlorobenzene	PPB	70	ND-ND	ND	ND-ND	ND
Ethylbenzene	PPB	700	ND-ND	ND	ND-ND	ND
1,3 Dichloropropene	PPB	0.5	ND-ND	ND	ND-ND	ND
1,1,2,2 Tetrachloroethane	PPB	1	ND-ND	ND	ND-ND	ND
Carbon tetrachloride	PPB	0.5	ND-ND	ND	ND-ND	ND
1,4 Dichlorobenzene	PPB	5	ND-ND	ND	ND-ND	ND
1,2 Dichloroethane	PPB	0.5	ND-ND	ND	ND-ND	ND
Vinyl chloride	PPB	0.5	ND-ND	ND	ND-ND	ND
1,1,2 Trichloroethane	PPB	5	ND-ND	ND	ND-ND	ND
cis-1,2-Dichloroethylene	PPB	6	ND-ND	ND	ND-ND	ND
trans-1,2-Dichloroethylene	PPB	10	ND-ND	ND	ND-ND	ND
1,1 Dichloroethane	PPB	5	ND-ND	ND	ND-ND	ND
1,2 Dichloropropane	PPB	5	ND-ND	ND	ND-ND	ND
Trichlorofluoromethane	PPB	150	ND-ND	ND	ND-ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	PPB	1200	ND-ND	ND	ND-ND	ND
Methy tert-butyl ether (MTBE)	PPB	35(AL)	ND-ND	ND	ND-ND	ND
VOLATILE ORGANIC CHEMICALS						
m-Dichlorobenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Dichloromethane	PPB	5	ND-ND	ND	ND-ND	ND
o-Dichlorobenzene	PPB	600	ND-ND	ND	ND-ND	ND
Dibromomethane	PPB	No Standard	ND-ND	ND	ND-ND	ND
1,1-Dichloropropene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Toluene	PPB	150	ND-ND	ND	ND-ND	ND
1,3-Dichloropropane	PPB	No Standard	ND-ND	ND	ND-ND	ND
Styrene	PPB	100	ND-ND	ND	ND-ND	ND
Chloromethane	PPB	No Standard	ND-ND	ND	ND-ND	ND
Bromomethane	PPB	No Standard	ND-ND	ND	ND-ND	ND
1,2,3-Trichloropropane	PPB	No Standard	ND-ND	ND	ND-ND	ND
1,1,1,2-Tetrachloroethane	PPB	No Standard	ND-ND	ND	ND-ND	ND
Chloroethane	PPB	No Standard	ND-ND	ND	ND-ND	ND
2,2-Dichloropropane	PPB	No Standard	ND-ND	ND	ND-ND	ND
o-Chlorotoluene	PPB	No Standard	ND-ND	ND	ND-ND	ND
p-Chlorotoluene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Bromobenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Dichlorodifluoromethane	PPB	No Standard	ND-ND	ND	ND-ND	ND
1,2,4-Trimethylbenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
1,2,4-Trichlorobenzene	PPB	70	ND-ND	ND	ND-ND	ND
1,2,3-Trichlorobenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
n-Propylbenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
n-Butylbenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Hexachlorobutadiene	PPB	No Standard	ND-ND	ND	ND-ND	ND
1,3,5-Trimethylbenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
p-Isopropyltoluene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Isopropylbenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Tert-butylbenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Sec-butylbenzene	PPB	No Standard	ND-ND	ND	ND-ND	ND
Bromochloromethane	PPB	No Standard	ND-ND	ND	ND-ND	ND

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CITY OF SACRAMENTO—WATER QUALITY ANNUAL REPORT

Data for Fiscal Year 1996-1997			City of Sacramento			
Parameter	Unit	Maximum Contaminant Level	Surface Water		Groundwater	
			Range	Average	Range	Average
PRIMARY STANDARDS—Mandatory, Health-Related Standard Established by Environmental Protection Agency						
SYNTHETIC ORGANIC CHEMICALS						
Alachlor	PPB	2	NA	NA	NA	NA
Benzo(a)pyrene	PPB	0.2	ND-ND	ND	NA	NA
Dalapon	PPB	200	NA	NA	NA	NA
Di(2-ethylhexyl)adipate	PPB	400	NA	NA	NA	NA
Dinoseb	PPB	7	NA	NA	NA	NA
Diquat	PPB	20	NA	NA	NA	NA
Endothall	PPB	100	NA	NA	NA	NA
Hexachlorobenzene	PPB	1	NA	NA	NA	NA
Hexachlorocyclopentadiene	PPB	50	NA	NA	NA	NA
Oxamyl (Vydate)	PPB	200	NA	NA	NA	NA
Picloram	PPB	500	NA	NA	NA	NA
PCBs as decachlorobiphenyl	PPB	0.5	NA	NA	NA	NA
Pentachlorophenol	PPB	1	NA	NA	NA	NA
2,3,7,8-TCDD (Dioxin)	PPB	0.00003	NA	NA	NA	NA
INORGANIC CHEMICALS						
HEAVY METALS						
Aluminum	PPB	1000	ND-68	ND	ND-ND	ND
Antimony	PPB	6	ND-ND	ND	ND-ND	ND
Arsenic	PPB	50	ND-ND	ND	ND-ND	ND
Barium	PPB	1000	ND-ND	ND	ND-100	ND
Beryllium	PPB	4	ND-ND	ND	ND-ND	ND
Cadmium	PPB	5	ND-ND	ND	ND-ND	ND
Chromium	PPB	50	ND-ND	ND	ND-15	ND
Lead	PPB	SEE NOTE 1	ND-ND	ND	ND-ND	ND
Mercury	PPB	2	ND-ND	ND	ND-ND	ND
Nickel	PPB	100	ND-ND	ND	ND-ND	ND
Selenium	PPB	50	ND-ND	ND	ND-ND	ND
Silver	PPB	50	ND-ND	ND	ND-ND	ND
Copper	PPM	SEE NOTE 1	ND-.04	ND	ND-ND	ND
Thallium	PPB	2	ND-ND	ND	ND-ND	ND
MINERALS						
Asbestos	MFL	7	ND-.2	0.1	ND	ND
Cyanide	PPM	0.20	NA	NA	NA	NA
Fluoride	PPM	2.0	ND-ND	ND	ND-0.29	0.13
Nitrate	PPM	45	.07-.44	0.26	0.80-22	5.9
Nitrite	PPM	3.3	ND-ND	ND	ND-ND	ND
RADIONUCLIDES						
Gross alpha (including Radium 226 and 228)	pCi/L	15	.82-.93	0.88	<.10-4.0	0.76
Tritium	pCi/L	20000	50-413	232	NA	NA
Strontium-90	pCi/L	8	.92-1.5	1.2	NA	NA
Gross Beta	pCi/L	50	1.2-2.5	1.8	NA	NA
Uranium	pCi/L	20**	NA	NA	NA	NA
SECONDARY STANDARDS—Aesthetic Standards Established by California Department of Health Services						
PHYSICAL PARAMETERS						
Color	UNITS	15	1-1	1	1-3	2
Odor-Threshold	UNITS	3	ND-ND	ND	ND-ND	ND
CHEMICAL PARAMETERS						
Chloride	PPM	500	2.3-8.6	4.6	11-130	44
Foaming Agents (MBAS)	PPM	0.5	ND-ND	ND	NA	NA
Iron	PPM	0.3	ND-.03	ND	ND-0.25	=<0.05
Manganese	PPM	0.05	ND	ND	ND-0.06	ND
Sulfate	PPM	500	6.1-18	11	4.4-18	8.4
Zinc	PPM	5.0	ND-.01	ND	ND-0.02	ND
MINERALS						
Specific Conductance	UMHOS/CM	1600	66-190	111	259-749	417
Total Dissolved Solids (TDS)	PPM	1000	45-121	73	207-442	287
ADDITIONAL CONSTITUENTS ANALYZED						
Hardness	PPM	NO STANDARD	22-67	40	76-280	137
pH	UNITS	NO STANDARD	8.3-8.7	8.5	7.0-7.6	7.3
Sodium	PPM	NO STANDARD	1-10	4	20-42	31
Chlorine Residual	PPM	NO STANDARD	0.19-0.25	0.23	0.19-0.25	0.23
Calcium	PPM	NO STANDARD	7.8-19	13	16-62	20
Magnesium	PPM	NO STANDARD	1.1-5.6	2.9	8.7-32	17

ABBREVIATIONS:

ND—NOT DETECTED
 PPM—PARTS PER MILLION (MG/L)
 NA—NOT ANALYZED
 PPB—PARTS PER BILLION (UG/L)
 NTU—TURBIDITY UNIT
 UMHOS/CM—MICROMHOS PER CENTIMETER
 pCi/L—PICOCURIES PER LITER
 NR—NOT REQUIRED
 MFL—MILLION FIBERS/L (FIBERS >10UM)
 AL—ACTION LEVEL

**—DOHS allows the measurement of gross alpha radiation as a surrogate for Uranium

Note1—The MCLs for Lead and Copper are based on a 90th percentile reading of the sampling of 100 homes.

Where applicable, data contained in this report may be from data outside of the Fiscal Year 1996-1997.

In addition to the above constituents, we have conducted monitoring for additional organic chemicals and for cryptosporidium and giardia which the California Department of Health Services and USEPA have not yet set a standard and all results were below detection levels unless otherwise noted.

The State of California, Department of Health Services requires all water purveyors to provide customers information on the community water system. This mandate must occur on an annual basis pursuant to Section 64463.1 of the Safe Drinking Water Act.

ADDITIONAL INFORMATION MAY BE OBTAINED FROM WATER QUALITY LABORATORY, PHONE: (916) 382-3737

The presence of contaminants in drinking water does not necessarily indicate that the drinking water poses a health risk.
 More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency 'hot-line' at 1-800-426-4791.