



# REPORT TO COUNCIL City of Sacramento

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**Public Hearing**  
**August 17, 2010**

**Honorable Mayor and  
Members of the City Council**

**Title: Required Report on City's Water Quality Relative to Public Health Goals**

**Location/Council District:** Citywide

**Recommendation:** Conduct a public hearing on the 2010 Report on City's Water Quality Relative to Public Health Goals.

**Contact:** Mike Yee, Plant Services Division Manager, (916) 808-5670; Roland Pang, Superintendent of Water and Sewer, (916) 808-1309.

**Presenters:** Mike Yee, Plant Services Division Manager, (916) 808-5670

**Department:** Utilities

**Division:** Plant Services

**Organization No:** 14001171

## **Description/Analysis**

**Issue:** The California Health and Safety Code specifies that a report be prepared to provide information to the public in addition to the annually distributed Consumer Confidence Report. The required report compares the City of Sacramento's drinking water quality to public health goals.

**Policy Considerations:** The drinking water quality provided by the City of Sacramento's Department of Utilities meets or surpasses all state and federal minimum drinking water standards set to protect public health. This public hearing on the "Report on City's Water Quality Relative to Public Health Goals" provides compliance with Section 116470 (c) of the California Health and Safety Code, which requires a public hearing for the purpose of accepting and responding to public comment on the report. Any comments received today may be addressed at this meeting or will be responded to in an Addendum to the

2010 Public Health Goal Report, which will be made available to the public.

**Environmental Considerations:**

**California Environmental Quality Act (CEQA):** The preparation of the Water Quality Report and the public hearing requirement are intended to provide notice to the public regarding water quality and public health goals. These activities do not propose any direct or indirect physical changes to the environment, and are not considered a project subject to the requirements of the California Environmental Quality Act, Public Resources Code Section 21065.

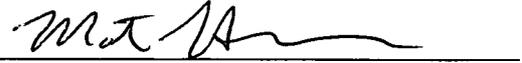
**Sustainability Considerations:** The City's drinking water program is consistent with the City's Sustainability Master Plan in advancing the goal of conserving the use and protection of sources of water.

**Rationale for Recommendation:** The California Health and Safety Code, Section 116470 requires the public water system to hold a public hearing for the purpose of accepting and responding to public comment on the public health goal report.

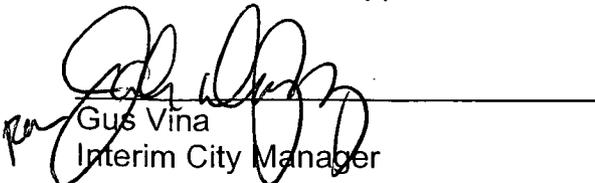
**Financial Considerations:** No action is proposed, and there are no financial implications from this report.

**Emerging Small Business Development (ESBD):** Not applicable.

Respectfully Submitted by:   
Mike Yee  
Plant Services Division Manager

Approved by:   
Marty Hanneman  
Director of Utilities

Recommendation Approved:

  
Gus Vina  
Interim City Manager

**Table of Contents:**

	Report	pg. 1
<b>Attachments</b>		
<b>1</b>	Background	pg. 4
<b>2</b>	2010 Report on City's Water Quality Relative to Public Health Goals	pg. 5

**Attachment 1****BACKGROUND**

The California Health and Safety Code mandates that a report be prepared by July 1, 1998, and every three years thereafter to compare drinking water quality with public health goals (PHGs) set by the California Office of Environmental Health Hazard Assessment (OEHHA) and with maximum contaminant level goals (MCLGs) adopted by the US Environmental Protection Agency (EPA).

- PHGs are developed by OEHHA solely based on evaluating public health risk, and do not consider the practical risk management factors that are evaluated by the California Department of Health Services (now named California Department of Public Health) or EPA in setting state and federal drinking water standards, respectively. These factors that are not considered include the ability of laboratories to analyze the constituent at low levels, available treatment technology, costs, and benefits. MCLGs are the federal equivalent to PHGs. PHGs and MCLGs are not enforceable standards, and no action to meet them is required.
- The City's water system complies with all of the health-based drinking water standards, known as maximum contaminant levels (MCLs), required by the California Department of Health Services and EPA.
- The California Health and Safety Code also requires that a public hearing be held, for the purpose of accepting and responding to public comments or questions on the "Report on City's Water Quality Relative to Public Health Goals".

**CITY OF SACRAMENTO – DEPARTMENT OF UTILITIES  
2010 REPORT ON CITY'S WATER QUALITY  
RELATIVE TO PUBLIC HEALTH GOALS**

## **BACKGROUND**

Provisions of the California Health and Safety Code specify that large water utilities (those with more than 10,000 service connections) prepare a special report should any of their water quality measurements exceed any Public Health Goals (PHGs). The first report was completed by July 1, 1998, and new reports are required every three years. The City of Sacramento (City) developed the required reports in 1998, 2001, 2004, and 2007, and the current report was completed by July 1, 2010 as required. The law specifies what information is to be provided in the report. Reference No. 1 is an excerpt of the California Health and Safety Code that includes the regulatory requirements. The purpose of this document is to satisfy the PHG Report requirements for the City of Sacramento. This is a separate requirement from the annual Consumer Confidence Report.

## **WHAT ARE PHGS?**

PHGs are non-enforceable goals established by the Cal-Environmental Protection Agency's (EPA's) Office of Environmental Health Hazard Assessment (OEHHA). The law 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 the United States Environmental Protection Agency (USEPA). Only those constituents that are regulated in drinking water, such as those with a maximum contaminant level (MCL) or Treatment Technique (TT) requirement, and for which either a PHG or MCLG has been set are to be included in the report. Reference No. 2 is a list of all currently-regulated constituents that must be addressed in the PHG Report. Contaminants that do not have an MCLG or PHG and contaminants with secondary standards are not required to be addressed. Note that there are some constituents that are routinely detected in water systems at levels below the drinking water standards for which no PHG or MCLG have yet been adopted. One example is the individual compounds making up Total Trihalomethanes<sup>1</sup>. These will be addressed in a future report if a PHG is adopted.

The PHG is a level of a contaminant in drinking water that does not pose a significant health risk. None of the practical risk-management factors that are considered by the USEPA or the California Department of Public Health (CDPH) in setting enforceable drinking water standards are considered in setting the PHGs. Such factors include analytical detection capability, treatment technology availability, and benefits and costs. MCLGs are set by the USEPA and are the federal equivalent to PHGs.

## **WHAT WATER QUALITY DATA WERE CONSIDERED?**

All of the water quality data collected by the City's water system during 2007 and through 2009 for purposes of determining compliance with drinking water standards were considered in this analysis. These data were all summarized in the 2007, 2008, and 2009 annual Consumer Confidence Reports (CCRs) that were mailed to all of our customers and posted on the City's

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<sup>1</sup> The MCL for total trihalomethanes is based on the sum of the following four compounds: chloroform, bromodichloromethane, chlorodibromomethane, and bromoform. There is no PHG or MCLG for total trihalomethanes.

internet website. Reference No. 3 includes the CCRs for these three years. As required by law, this report includes information about constituents detected in the City of Sacramento's drinking water supply during these three years at a level exceeding a PHG or MCLG. The report includes the numerical public health risk associated with the MCL and the PHG or MCLG, the category or type of risk to health that is 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 GUIDELINES WERE FOLLOWED IN PREPARING THIS REPORT?**

The Association of California Water Agencies (ACWA) formed a workgroup that prepared guidelines for water utilities to use in preparing their PHG reports. The ACWA guidelines were used to prepare this Report. No guidance materials are available from the CDPH regarding preparation of the PHG report.

## **WHAT IS BEST AVAILABLE TECHNOLOGY AND HOW ARE COSTS ESTIMATED?**

Both the USEPA and CDPH designate Best Available Technologies (BATs) for each regulated constituent. These technologies are the best available treatment technology, treatment techniques, or other means available for achieving compliance with the MCLs. Costs have been estimated by USEPA and others for implementing such technologies. However, since many PHGs and MCLGs are set at levels much lower than the enforceable MCLs, it is not always possible or feasible to determine what treatment is needed to further reduce a constituent downward to or near the PHG or MCLG. USEPA sets the MCLGs for carcinogens at a level of "zero" as a matter of policy. 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 IN OUR WATER THAT EXCEED A PHG OR MCLG**

The following sections contain information about constituents that were detected in one or more of the City's drinking water sources at levels above the PHG, or if there is no PHG, above the MCLG.

### Arsenic:

The MCL for arsenic is 10  $\mu\text{g}/\text{L}$ <sup>2</sup>, while the PHG is 0.004  $\mu\text{g}/\text{L}$ . The analytical detection limit is 2  $\mu\text{g}/\text{L}$ . Therefore, the lowest level that can be determined analytically is 500 times higher than the PHG. Some people who drink water containing arsenic in excess of the MCL over many years can experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer<sup>3</sup>. The numerical cancer risk associated with the MCL is 2.5 per thousand, and the numerical cancer risk associated with the PHG is one per one million.

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<sup>2</sup> Note that 1  $\mu\text{g}/\text{L}$  is equivalent to 1 ppb (parts per billion), and 1  $\text{mg}/\text{L}$  is equivalent to 1 ppm (parts per million).

<sup>3</sup> USEPA pamphlet "Just the Facts for Consumers - Arsenic in Your Drinking Water" March 2007

Twenty-six of the City of Sacramento's 33 permitted wells had detectable levels of arsenic, all well below the MCL. Table 1 includes the analytical results measured during 2007, 2008 and 2009 in the wells with detectable arsenic levels.

**Table 1 – Measured Arsenic Level in City of Sacramento Source Waters, 2007-2009**

Source	Arsenic Concentration, µg/L
WELL 83	4.8
WELL 92	3.2
WELL 93	3.2
WELL 94	3.2
WELL 107	5.8
WELL 116	2.9
WELL 120	2.8
WELL 122	2.3
WELL 124	3.8
WELL 126	3.1
WELL 127	2.2
WELL 129	2.5
WELL 131	4.1
WELL 133	3.4
WELL 134	3.5
WELL 137	3.0
WELL 138	3.4
WELL 142	2.0
WELL 144	2.9
WELL 153A	3.9
WELL 154	4.2
WELL 155	2.4
WELL 156	3.4
WELL 158	3.3
WELL 159	2.6
WELL 164	3.6*

\*This is an average of four samples, all others are individual results

Seven BATs have been identified to meet the arsenic MCL: activated alumina, coagulation/filtration, ion exchange, lime softening, electro dialysis reversal, oxidation/filtration, and reverse osmosis. The best arsenic reduction performance that can be expected from these

technologies is approximately 95 percent. Based on this percent reduction and the current levels of arsenic in the wells, it is unlikely that any of these technologies could actually reduce the level of arsenic to the PHG of 0.004 µg/L. Nonetheless, it is thought that ion exchange would be the most appropriate technology for the City to implement at the wells in an attempt to produce water with arsenic concentrations near the PHG level.

The estimated cost to install and operate ion exchange systems on the 26 wells identified above, to attempt to reduce the arsenic level to the PHG of 0.004 µg/L, would be approximately \$13,682,000 for the initial construction<sup>4</sup> plus an estimated order of magnitude cost of \$3,674,000 for land acquisition. It is uncertain if partial lot acquisition would be possible and if not it could result in the acquisition of real property with structures or development of new wells at a much higher cost, from 100 to 200 percent higher. The operation and maintenance costs have been estimated at \$1,650,000 per year. These approximate costs would result in an assumed increased user fee of approximately 29 percent during the first year and an assumed increased user fee of approximately 3 percent for the following years. Arsenic treatment costs may be even higher based on recent university research.

Coliform Bacteria:

The MCL for total coliform is determined as follows: hundreds of samples are collected from various locations throughout the distribution system during the month. Each sample is analyzed, and the result is either positive or negative for coliform bacteria. At the end of the month, the number of coliform-positive samples is divided by the total number of samples collected for that month. This value should not exceed the MCL which is 5%. The MCLG for total coliform is zero. From 2007 through 2009 there were six individual months which had percentage positive total coliform results that exceeded the MCLG of zero, although all were well below the MCL of 5%. These are shown in Table 2.

**Table 2 – Summary of Total Coliform Results**

Year	Month	Percent Positive
2007	May	0.81
2007	June	0.83
2007	August	0.81
2009	January	1.21
2009	October	0.78
2009	December	0.74

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. As 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.

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<sup>4</sup> Costs from 2007 PHG report adjusted to 2010 dollars per U.S. Department of Labor CPI and inflation values. Cost in 2007 PHG report were generated using equations generated by USEPA and presented in the manual “Arsenic Treatment Technology Evaluation Handbook for Small Systems”, 2003.

Exceeding zero % coliform bacteria in any month, in and of itself, will not normally constitute the need for any treatment. There is no treatment that can be implemented that will ensure that the system would always have 0% coliform every single month. The one single action that would most likely decrease the possibility of a system having any positive coliform results would be to significantly increase the chlorine disinfectant residual. However, raising the chlorine residual would likely result in the increase of Disinfection By-Products (DBPs) which have adverse health consequences of their own. Additionally there are limits to the level of disinfectant residual allowed in the distribution system.

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 samples collected and analyzed. It is not unusual for a system to have an occasional positive sample. It is difficult, if not impossible, to ensure that a system will never get a positive sample.

We add chlorine at the drinking water treatment 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 without increasing the disinfection byproduct level. This careful balance of treatment processes is essential to continue supplying safe drinking water to the consumers. Other equally important measures that are 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 CDPH as "best available technology" for coliform bacteria in Section 64447, Title 22, CCR.

Fluoride:

The MCL for fluoride is 2 ppm (California), and the PHG is 1 ppm. The City adjusts the natural levels of fluoride in our water supplies to the California DPH recommended optimal level. The average fluoride value for all samples taken from the City wells for 2009 was 0.9 mg/L, which was lower than the PHG. In June of 2009 a single sample taken from Well 154 indicated a level of 4 ppm. All subsequent samples for fluoride have been normal (below the PHG), and there was no violation of a drinking water standard because compliance is based on the average of all samples collected, not a single sample. Detection of the single sample with a measurement greater than the CA MCL level required notification to CDPH and correction of the overfeed. Operations and Maintenance staff identified that there was an apparent one-time system upset at this well, and the problem was then immediately corrected. This situation caused a brief overfeed of fluoride into a small portion of the distribution system possibly affecting a single residence. The health department was notified, the area was flushed, removing the high-fluoride water, and maintenance staff made the necessary repairs. The City continues to report fluoride monitoring results monthly to CDPH, provides regular preventive maintenance on the fluoridation facilities, and follows a Fluoridation System Operations Plan that contains action steps in the event of overfeeds. The fluoridation system is constantly monitored, including alarms to notify operation staff when the system needs direct attention, resulting in well shut down until staff resolve the issue on-site. Operations and maintenance staff also visit each well site regularly to manually service the equipment.

## **RECOMMENDATIONS FOR FURTHER ACTION**

The drinking water quality of the City of Sacramento – Department of Utilities meets all State of California 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”, would require additional costly treatment processes. The ability of these new treatment processes to provide significant reductions in constituent levels at these already low values is uncertain. The health protection benefits of these further hypothetical reductions are unclear and may not be quantifiable. Therefore, no action is proposed.

## **REFERENCES:**

- No.1 Excerpt from California Health & Safety Code: Section 116470 (b)
- No.2 Table of California Regulated Constituents with MCLs and PHGs, Table of EPA Drinking Water Regulations Showing MCLGs
- No.3 City of Sacramento – Department of Utilities 2007, 2008 and 2009 Consumer Confidence Reports

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.

(c) Public water systems required to prepare a report pursuant to subdivision (b) shall hold a public hearing for the purpose of accepting and responding to public comment on the report. Public water systems may hold the public hearing as part of any regularly scheduled meeting.

(d) The department shall not require a public water system to take any action to reduce or eliminate any exceedance of a public health goal.

(e) Enforcement of this section does not require the department to amend a public water system's operating permit.

(f) Pending adoption of a public health goal by the Office of Environmental Health Hazard Assessment pursuant to subdivision (c) of Section 116365, and in lieu thereof, public water systems shall use the national maximum contaminant level goal adopted by the United States Environmental Protection Agency for the corresponding contaminant for purposes of complying with the notice and hearing requirements of this section.

**Reference No.2 Table of California Regulated Constituents with MCLs and  
PHGs, Table of EPA Drinking Water Regulations Showing MCLGs**

<b>MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants (Units are in milligrams per liter (mg/L), unless otherwise noted.) Last Update: April 14, 2010</b>				
This table includes: CDPH's maximum contaminant levels (MCLs) CDPH's detection limits for purposes of reporting (DLRs) <u>Public health goals (PHGs) from the Office of Environmental Health Hazard Assessment (OEHHA)</u>				
Also, PHGs for NDMA and 1,2,3 Trichloropropane (not yet regulated) are included at the bottom of this table.				
	<b>MCL</b>	<b>DLR</b>	<b>PHG</b>	<b>Date of PHG</b>
<b>Chemicals with MCLs in 22 CCR §64431 —Inorganic Chemicals</b>				
Aluminum	1	0.05	0.6	2001
Antimony	0.006	0.006	0.02	1997
Antimony	-	-	0.0007	2009 draft
Arsenic	0.010	0.002	0.000004	2004
Asbestos (MFL = million fibers per liter; for fibers >10 microns long)	7 MFL	0.2 MFL	7 MFL	2003
Barium	1	0.1	2	2003
Beryllium	0.004	0.001	0.001	2003
Cadmium	0.005	0.001	0.00004	2006
Chromium, Total - OEHHA withdrew the 0.0025-mg/L PHG	0.05	0.01	withdrawn Nov. 2001	1999
Chromium-6 -MCL to be established -currently regulated under the total chromium MCL	-	0.001	0.00006	2009 draft
Cyanide	0.15	0.1	0.15	1997
Fluoride	2	0.1	1	1997
Mercury (inorganic)	0.002	0.001	0.0012	1999 (rev2005)*
Nickel	0.1	0.01	0.012	2001
Nitrate (as NO <sub>3</sub> )	45	2	45	1997
Nitrite (as N)	1 as N	0.4	1 as N	1997
Nitrate + Nitrite	10 as N	-	10 as N	1997
Perchlorate	0.006	0.004	0.006	2004
Selenium	0.05	0.005	0.03	2010 draft
Thallium	0.002	0.001	0.0001	1999 (rev2004)
<b>Copper and Lead, 22 CCR §64672.3</b>				
<i>Values referred to as MCLs for lead and copper are not actually MCLs; instead, they are called "Action Levels" under the lead and copper rule</i>				
Copper	1.3	0.05	0.3	2008
Lead	0.015	0.005	0.0002	2009
<b>Radionuclides with MCLs in 22 CCR §64441 and §64443 —Radioactivity</b>				
[units are picocuries per liter (pCi/L), unless otherwise stated; n/a = not applicable]				
Gross alpha particle activity - OEHHA concluded in 2003 that a PHG was not practical	15	3	none	n/a
Gross beta particle activity - OEHHA concluded in 2003 that a PHG was not practical	4 mrem/yr	4	none	n/a
Radium-226	-	1	0.05	2006
Radium-228	-	1	0.019	2006
Radium-226 + Radium-228	5	-	-	-
Strontium-90	8	2	0.35	2006
Tritium	20,000	1,000	400	2006
Uranium	20	1	0.43	2001

<b>MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants</b> (Units are in milligrams per liter (mg/L), unless otherwise noted.) Last Update: April 14, 2010				
This table includes: CDPH's maximum contaminant levels (MCLs) CDPH's detection limits for purposes of reporting (DLRs) <u>Public health goals (PHGs) from the Office of Environmental Health Hazard Assessment (OEHHA)</u>				
Also, PHGs for NDMA and 1,2,3 Trichloropropane (not yet regulated) are included at the bottom of this table.				
	<b>MCL</b>	<b>DLR</b>	<b>PHG</b>	<b>Date of PHG</b>
<b>Chemicals with MCLs in 22 CCR §6444 —Organic Chemicals</b>				
<b>(a) Volatile Organic Chemicals (VOCs)</b>				
Benzene	0.001	0.0005	0.00015	2001
Carbon tetrachloride	0.0005	0.0005	0.0001	2000
1,2-Dichlorobenzene	0.6	0.0005	0.6	1997 (rev2009)
1,4-Dichlorobenzene (p-DCB)	0.005	0.0005	0.006	1997
1,1-Dichloroethane (1,1-DCA)	0.005	0.0005	0.003	2003
1,2-Dichloroethane (1,2-DCA)	0.0005	0.0005	0.0004	1999 (rev2005)
1,1-Dichloroethylene (1,1-DCE)	0.006	0.0005	0.01	1999
cis-1,2-Dichloroethylene	0.006	0.0005	0.1	2006
trans-1,2-Dichloroethylene	0.01	0.0005	0.06	2006
Dichloromethane (Methylene chloride)	0.005	0.0005	0.004	2000
1,2-Dichloropropane	0.005	0.0005	0.0005	1999
1,3-Dichloropropene	0.0005	0.0005	0.0002	1999 (rev2006)
Ethylbenzene	0.3	0.0005	0.3	1997
Methyl tertiary butyl ether (MTBE)	0.013	0.003	0.013	1999
Monochlorobenzene	0.07	0.0005	0.2	2003
Styrene	0.1	0.0005	0.0005	2010 draft
1,1,2,2-Tetrachloroethane	0.001	0.0005	0.0001	2003
Tetrachloroethylene (PCE)	0.005	0.0005	0.00006	2001
Toluene	0.15	0.0005	0.15	1999
1,2,4-Trichlorobenzene	0.005	0.0005	0.005	1999
1,1,1-Trichloroethane (1,1,1-TCA)	0.2	0.0005	1	2006
1,1,2-Trichloroethane (1,1,2-TCA)	0.005	0.0005	0.0003	2006
Trichloroethylene (TCE)	0.005	0.0005	0.0017	2009
Trichlorofluoromethane (Freon 11)	0.15	0.005	0.7	1997
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	1.2	0.01	4	1997
Vinyl chloride	0.0005	0.0005	0.00005	2000
Xylenes	1.75	0.0005	1.8	1997
<b>(b) Non-Volatile Synthetic Organic Chemicals (SOCs)</b>				
Alachlor	0.002	0.001	0.004	1997
Atrazine	0.001	0.0005	0.00015	1999
Bentazon	0.018	0.002	0.2	1999 (rev2009)
Benzo(a)pyrene	0.0002	0.0001	0.000004	1997
Benzo(a)pyrene	--	--	0.000013	2010 draft
Carbofuran	0.018	0.005	0.0017	2000
Chlordane	0.0001	0.0001	0.00003	1997 (rev2006)
Dalapon	0.2	0.01	0.79	1997 (rev2009)
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0.00001	0.0000017	1999
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.07	0.01	0.02	2009
Di(2-ethylhexyl)adipate	0.4	0.005	0.2	2003
Di(2-ethylhexyl)phthalate (DEHP)	0.004	0.003	0.012	1997
Dinoseb	0.007	0.002	0.014	1997

**MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants**  
 (Units are in milligrams per liter (mg/L), unless otherwise noted.)  
 Last Update: April 14, 2010

This table includes:

CDPH's maximum contaminant levels (MCLs)

CDPH's detection limits for purposes of reporting (DLRs)

Public health goals (PHGs) from the Office of Environmental Health Hazard Assessment (OEHHA)

Also, PHGs for NDMA and 1,2,3 Trichloropropane (not yet regulated) are included at the bottom of this table.

	<b>MCL</b>	<b>DLR</b>	<b>PHG</b>	<b>Date of PHG</b>
Diquat	0.02	0.004	0.015	2000
Endrin	0.002	0.0001	0.0018	1999 (rev2008)
Endothal	0.1	0.045	0.58	1997
Ethylene dibromide (EDB)	0.00005	0.00002	0.00001	2003
Glyphosate	0.7	0.025	0.9	2007
Heptachlor	0.00001	0.00001	0.000008	1999
Heptachlor epoxide	0.00001	0.00001	0.000006	1999
Hexachlorobenzene	0.001	0.0005	0.00003	2003
Hexachlorocyclopentadiene	0.05	0.001	0.05	1999
Lindane	0.0002	0.0002	0.000032	1999 (rev2005)
Methoxychlor	0.03	0.01	0.03	1999
Methoxychlor	--	--	0.00009	2010 draft
Molinate	0.02	0.002	0.001	2008
Oxamyl	0.05	0.02	0.026	2009
Pentachlorophenol	0.001	0.0002	0.0003	2009
Picloram	0.5	0.001	0.5	1997
Polychlorinated biphenyls (PCBs)	0.0005	0.0005	0.00009	2007
Simazine	0.004	0.004	0.004	2001
2,4,5-TP (Silvex)	0.05	0.001	0.025	2003
2,3,7,8-TCDD (dioxin)	3x10 <sup>-8</sup>	5x10 <sup>-9</sup>	1x10 <sup>-9</sup>	2007 draft
Thiobencarb	0.07	0.001	0.07	2000
Toxaphene	0.003	0.001	0.00003	2003
<b>Chemicals with MCLs in 22 CCR §64533 —Disinfection Byproducts</b>				
Total Trihalomethanes	0.08	--	--	--
Bromodichloromethane	--	0.001	0.0004	2009 draft
Bromoform	--	0.001	0.005	2009 draft
Chloroform	--	0.001	0.001	2009 draft
Dibromochloromethane	--	0.001	0.0007	2009 draft
Bromate	0.010	0.005	0.0001	2009
Chlorite	1	0.02	0.05	2009
<b>Chemicals with PHGs established in response to CDPH requests. These are not currently regulated drinking water contaminants.</b>				
N-Nitrosodimethylamine (NDMA)	--	--	0.000003	2006
1,2,3-Trichloropropane	--	--	0.0000007	2009

\*OEHHA's review of this chemical during the year indicated (rev200X) resulted in no change in the PHG.

Reference No.3

City of Sacramento – Department of Utilities 2007, 2008 and 2009 Consumer Confidence Reports

## INFORMATION YOU SHOULD KNOW ABOUT WATER

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### City of Sacramento Department of Utilities

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# 2007 CITY OF SACRAMENTO WATER QUALITY REPORT

*A consumer confidence report for the citizens of Sacramento*



**Congratulations! Your water meets or exceeds all federal and state drinking water standards.**





## TRADITION OF EXCELLENCE

Since its founding in 1849, the City of Sacramento has considered water quality of utmost importance. This Consumer Confidence Report is presented to enhance your understanding of where your water comes from and what it contains and to confirm that your drinking water continues to meet or exceed all state and federal drinking water standards.

The City of Sacramento Department of Utilities is committed to providing high quality, reliable, and environmentally sensitive water, sewer, drainage and solid waste services to the residents of Sacramento. In doing so, we work to conserve and preserve our water sources.

## CALIFORNIA SOURCE WATER QUALITY

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 urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

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**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, agricultural applications, and septic systems.

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In order to ensure that tap water is safe to drink, U.S. Environmental Protection Agency (USEPA) and the State Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

## SACRAMENTO'S WATER SOURCE ASSESSMENT

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An assessment of the City's groundwater wells was completed in December 2002. Two wells are considered most vulnerable to automotive services and have an associated contaminant detected in the water that the wells produce. However, the City's drinking water meets all current state and federal drinking water standards. In addition, due to the proximity to potential contaminant sources, the wells north of the American River are considered most vulnerable to sewer collection systems, leaking underground storage tanks, known contaminant plumes, agricultural drainage, gas stations, dry cleaners, metal plating and chemical processing storage facilities, electrical/electronic manufacturing, and automobile repair and body shops. Wells south of the American River are considered vulnerable to leaking underground storage

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## TEAMWORK — TOGETHER WE CAN PROTECT OUR WATER RESOURCES

The City of Sacramento Department of Utilities works hard to bring you quality drinking water. Please be careful as you live, work and play to limit what goes into the storm drains and rivers, so we can continue to preserve the quality of the water and our diverse river ecosystem.

Here are some ways that you can help preserve and conserve our water resources.

**Fill It Up.** Use your dishwasher and washing machine only for full loads.

**Go Green.** Purchase household and garden products that are "least toxic" to the environment.

**Look for Leaks.** Inspect and maintain your car regularly to prevent leaks of oil, antifreeze and other fluids. Also, conserve water by fixing leaks around your home and yard.

**Apply when Dry.** Do not apply lawn or garden products when rain is forecasted and do not over-water your lawn.

**Pick-up After Yourself and Your Pets.** Pick up your trash and put recycling in an appropriate bin. Shovel up animal wastes, seal it in bags and throw it away in a garbage can. Also, when visiting our rivers, be sure to use a public restroom or if your boat has a restroom, be sure to use a pumpout station to dispose of sewage safely.

**Slow the Flow.** Use a low-flow hose nozzle when landscaping and only water on your assigned day. Also use a low-flow showerhead and take showers instead of baths.

**Spend Time in the Gutter.** Keep the gutters clear of debris and lawn clipping to prevent clogging of storm drains. If you are putting out yard clippings for pick-up, sweep them into the street.

**Join the Team.** Volunteer to stencil storm drains in your neighborhood with "No Dumping Flows to River" message by calling 808-4H20.

# WATER QUALITY ANALYSIS RESULTS FOR 2007

The following table shows the detected contaminants in your drinking water and compares them with drinking water standards set by United States Environmental Protection Agency (USEPA) and the State Department of Public Health (Department). To request a complete report, including non-detected items, please call (916) 808-5454.

**Your water meets or exceeds all current federal and state requirements**

DETECTED PRIMARY DRINKING WATER CONSTITUENTS regulated to protect your health									
Constituent	Units	PHG or (MCLG) or (MRDLG)	MCL or (MRDL)	Surface Water		Ground Water		Year of Sampling	Major Sources
				Range	Average	Range	Average		
Arsenic	PPB	0.004	10	ND - 3.2	ND	ND - 5.9	2.8	2005-2006	Erosion or leaching of natural deposits
Barium	PPM	2	1	ND	ND	ND - 0.21	0.13	2005-2006	Erosion or leaching of natural deposits
Chromium (total)	PPB	(100)	50	ND	ND	ND - 21	ND	2005-2006	Erosion or leaching of natural deposits
Fluoride (a)	PPM	1	2	ND - 1.13	0.81	ND - 1.59	0.93	2007	Water additive that promotes strong teeth
Nitrate (as nitrate)	PPM	45	45	ND	ND	ND - 15	7.2	2007	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Tritium	pCi/L	400	20000	1211 - 1233	1222	NR	NR	1999-2000	Decay of natural and man-made deposits
Control of Disinfection By-Product precursors (TOC) (raw) (b)	PPM	N/A	treatment requirement if average TOC > 2	0.72 - 2.7	1.36	NR	NR	2007	Various natural and manmade sources
Turbidity (c)	NTU	N/A	TT = 1 NTU	0.14		NR		2007	Soil runoff
	% samples	N/A	TT = 95% of samples < 0.3 NTU	100%		NR		2007	Soil runoff
Constituent	Units	PHG or (MCLG) or (MRDLG)	MCL or (MRDL)	Distribution System		Year of Sampling	Major Sources		
				Range	Average				
Chlorine (distribution system)	PPM	[4]	[4.0]	0.03 - 1.32		0.58	2007	Drinking water disinfectant added for treatment	
Total Trihalomethanes (distribution system)	PPB	N/A	80	ND - 69		31.1	2007	By-product of drinking water chlorination	
Haloacetic Acids (distribution system)	PPB	N/A	60	ND - 49		18.5	2007	By-product of drinking water chlorination	
Constituent	Units	PHG or (MCLG)	MCL or (MRDL)	Highest Monthly Result	# Months with Positive Sample	Year of Sampling	Major Sources		
Total Coliform Bacteria	% samples positive	(0)	more than 5.0% of monthly samples are positive	1.2%	9	2007	Naturally present in the environment		

DETECTED SECONDARY DRINKING WATER CONSTITUENTS regulated for aesthetic qualities									
Constituent	Units	PHG or (MCLG)	MCL	Surface Water		Ground Water		Year of Sampling	Major Sources
				Range	Average	Range	Average		
Chloride	PPM	NONE	500	3.0 - 13	6.5	12 - 94	40.2	2005-2007	Erosion or leaching of natural deposits
Color	UNITS	NONE	15	1 - 1	1	1 - 1	1	2005-2007	Naturally occurring organic materials
Specific Conductance	µS/CM	NONE	1600	52 - 191	125	235 - 797	409	2005-2007	Substances that form ions when in water
Sulfate	PPM	NONE	500	6.5 - 20	11	3 - 45	10	2005-2007	Erosion or leaching of natural deposits
Total Dissolved Solids (TDS)	PPM	NONE	1000	54 - 157	97	189 - 546	286	2005-2007	Erosion or leaching of natural deposits
Turbidity	NTU	NONE	5	ND - 0.14	0.05	0.05 - 3.1	0.27	2005-2007	Soil runoff

DETECTED UNREGULATED DRINKING WATER CONSTITUENTS (d)									
Constituent	Units	PHG or (MCLG)	MCL	Surface Water		Ground Water		Year of Sampling	Major Sources
				Range	Average	Range	Average		
Chromium VI (Hexavalent chromium)	PPB	NONE	No Standard	ND	ND	ND - 21	8.26	2005-2006	Erosion or leaching of natural deposits
Radium 228	pCi/L	0.019	No Standard	ND	ND	ND - 2.94	ND	2003-2006	Erosion of natural deposits
Hardness	PPM	NONE	No Standard	29 - 142	57	74 - 332	144	2005-2007	Hardness is the sum of polyvalent cations present in the water, generally naturally occurring magnesium and calcium
Sodium	PPM	NONE	No Standard	1.8 - 7.1	4.5	16 - 48	27	2005-2006	Naturally occurring salt in the water
Calcium	PPM	NONE	No Standard	9.6 - 22	15	15 - 71	31	2005-2007	Erosion or leaching of natural deposits
Magnesium	PPM	NONE	No Standard	1.4 - 5.4	3.4	8.2 - 43	17	2005-2006	Erosion or leaching of natural deposits

- (a) The City's fluoridation program provides the addition of fluoride to all the City's drinking water. The City adjusts the natural levels of fluoride in our water supplies to the California DPH recommended optimal level.
- (b) Only surface water sources must monitor for DBP Precursors in raw water.
- (c) Only surface water sources must comply with PDWS for turbidity.
- (d) Unregulated contaminant monitoring helps determine where certain contaminants occur and whether they need to be regulated.

The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Some of our data, though representative, are more than one year old.

Lead and Copper—53 homes tested.

## IMPORTANT DEFINITIONS

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHG (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 expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. 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.

**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.

**Regulatory Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

## WATER QUALITY TABLE ABBREVIATIONS

**ND:** Not detectable at reporting limit

**NR:** Not required

**NTU:** Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

**PPB:** Parts per billion or micrograms per liter

**PPM:** Parts per million or milligrams per liter

**pCi/L:** Picocuries per liter is a measure of radioactivity

**µS/CM:** Microsiemens per centimeter

## WHAT YOU SHOULD KNOW ABOUT...

### Arsenic

While your drinking water meets the EPA standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

### Radon

Radon is a radioactive gas that you cannot see, taste or smell. Radon is found throughout the United States and can move up through the ground and into a home through cracks and holes in the foundation. Tap water may also release radon into the air in your home when showering, washing dishes or performing other household activities. Radon entering the home through tap water will, in most cases, be a small

source of radon. Breathing air containing radon may lead to lung cancer and drinking water containing radon may cause increased risk of stomach cancer.

If you are concerned about radon in your home, testing is easy and inexpensive. There are simple, low cost ways to fix a radon problem, if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. Average radon levels in the City's groundwater supply between 1999 and 2000 ranged from 306 to 730 picocuries per liter, which is equal to less than 1 picocurie per liter in the air. For additional information, call the State Radon Program at (1-800-745-7236) or the USEPA's Radon Hotline at (1-800-SOS-RADON).

### *Cryptosporidium*

*Cryptosporidium* is a disease-causing micro-organism found in surface waters throughout the United States that can be transmitted through ingestion of contaminated food, drinking water, recreational waters, or fecal material. Our monitoring indicates the infrequent presence of this micro-organism in our untreated river water. Current test methods do not allow us to determine if the microorganisms are dead or if they are capable of causing disease. Although filtration methods cannot guarantee 100 percent removal, the City's treatment process is expected to remove over 99 percent of these microorganisms.

Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection with symptoms that include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illnesses. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection.

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**TEAMWORK — TOGETHER WE CAN PROTECT OUR WATER RESOURCES**

The City of Sacramento Department of Utilities works hard to bring you quality drinking water. Please be careful as you live, work and play to limit what goes into the storm drains and rivers, so we can continue to preserve the quality of the water and our diverse river ecosystem.

Here are some ways that you can help preserve and conserve our water resources.

**Fill It Up.** Use your dishwasher and washing machine only for full loads.

**Go Green.** Purchase household and garden products that are "least toxic" to the environment.

**Look for Leaks.** Inspect and maintain your car regularly to prevent leaks of oil, antifreeze and other fluids. Also, conserve water by fixing leaks around your home and yard.

**Apply when Dry.** Do not apply lawn or garden products when rain is forecasted and do not over-water your lawn.

**Pick-up After Yourself and Your Pets.** Pick up your trash and put recycling in an appropriate bin. Shovel up animal wastes, seal it in bags and throw it away in a garbage can. Also, when visiting our rivers, be sure to use a public restroom or if your boat has a restroom, be sure to use a pumpout station to dispose of sewage safely.

**Slow the Flow.** Use a low-flow hose nozzle when landscaping and only water on your assigned day. Also use a low-flow showerhead and take showers instead of baths.

**Spend Time in the Gutter.** Keep the gutters clear of debris and lawn clipping to prevent clogging of storm drains. If you are putting out yard clippings for pick-up, sweep them into the street.

**Join the Team.** Volunteer to stencil storm drains in your neighborhood with "No Dumping Flows to River" message by calling 808-4H20.

# WATER QUALITY ANALYSIS RESULTS FOR 2008

The following table shows the detected constituents in your drinking water and compares them with drinking water standards set by United States Environmental Protection Agency (USEPA) and the State Department of Public Health (Department). To request a complete report, including non-detected items, please call (916) 264-5011.

**Your water meets or exceeds all current federal and state requirements**

DETECTED PRIMARY DRINKING WATER CONSTITUENTS regulated to protect your health									
Constituent	Units	PHG or (MCLG) or (MRDLG)	MCL or (MRDL)	Surface Water		Ground Water		Year of Sampling	Major Sources
				Range	Average	Range	Average		
Arsenic	PPB	0.004	10	ND - ND	ND	ND - 5.8	3.3	2006, 2008	Erosion or leaching of natural deposits
Barium	PPM	2	1	ND - ND	ND	ND - 0.197	0.15	2006, 2008	Erosion or leaching of natural deposits
Chromium (total)	PPB	(100)	50	ND - ND	ND	ND - 16	ND	2006, 2008	Erosion or leaching of natural deposits
Fluoride (a)	PPM	1	2	0.74 - 0.95	0.83	0.65 - 1.24	1.0	2008	Water additive that promotes strong teeth
Nitrate (as nitrate)	PPM	45	45	ND - ND	ND	1.1 - 15	6.7	2007, 2008	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Distribution System									
Constituent	Units	PHG or (MCLG) or (MRDLG)	MCL or (MRDL)	Range		Average		Year of Sampling	Major Sources
Chlorine	PPM	(4)	(4.0)	0.07 - 2.03		0.59		2008	Drinking water disinfectant added for treatment
Total Trihalomethanes	PPB	N/A	80	ND - 92		34.6		2008	By-product of drinking water chlorination
Haloacetic Acids	PPB	N/A	60	ND - 81		17.7		2008	By-product of drinking water chlorination
Control of Disinfection By-Product precursors (TOC) (raw) (b)	PPM	N/A	treatment requirement if average TOC > 2	1.0 - 2.8		1.56		2008	Various natural and manmade sources
Constituent	Units	PHG or (MCLG)	MCL or (MRDL)	Level Found		Year of Sampling	Major Sources		
Total Coliform Bacteria	% samples positive	(0)	more than 5.0% of monthly samples are positive	1.21%		2008	Naturally present in the environment		
Turbidity (c)	NTU	N/A	TT = 95% of samples < 0.3 NTU TT = 100% of samples < 1.0 NTU	0.53 99.99%		2008	Soil runoff		
DETECTED SECONDARY DRINKING WATER CONSTITUENTS regulated for aesthetic qualities									
Constituent	Units	PHG or (MCLG)	MCL	Surface Water		Ground Water		Year of Sampling	Major Sources
				Range	Average	Range	Average		
Chloride	PPM	NONE	500	4.8 - 14	7.7	15 - 64	38	2008	Erosion or leaching of natural deposits
Color	UNITS	NONE	15	1 - 1	1	1 - 1	1	2008	Naturally occurring organic materials
Specific Conductance	µS/CM	NONE	1600	79 - 219	144	246 - 716	407	2008	Substances that form ions when in water
Sulfate	PPM	NONE	500	6.4 - 28	13	4.7 - 32	12	2008	Erosion or leaching of natural deposits
Total Dissolved Solids (TDS)	PPM	NONE	1000	51 - 174	100	207 - 484	305	2008	Erosion or leaching of natural deposits
Turbidity	NTU	NONE	5	ND - 0.53	0.05	0.05 - 3.4	0.25	2008	Soil runoff
DETECTED UNREGULATED DRINKING WATER CONSTITUENTS (d)									
Constituent	Units	PHG or (MCLG)	MCL	Surface Water		Ground Water		Year of Sampling	Major Sources
				Range	Average	Range	Average		
Hardness	PPM	NONE	No Standard	27 - 92	59	74 - 332	144	2005-2006, 2008	Hardness is the sum of polyvalent cations present in the water, generally naturally occurring magnesium and calcium
Sodium	PPM	NONE	No Standard	1.8 - 7.1	4.5	19 - 39	28	2006, 2008	Naturally occurring salt in the water
Calcium	PPM	NONE	No Standard	10 - 23	17	30 - 92	50	2008	Erosion or leaching of natural deposits
Magnesium	PPM	NONE	No Standard	1.4 - 5.4	3.4	9.0 - 37	18	2006, 2008	Erosion or leaching of natural deposits

- (a) The City's fluoridation program provides the addition of fluoride to all the City's drinking water. The City adjusts the natural levels of fluoride in our water supplies to the California DPH recommended optimal level.
- (b) Only surface water sources must monitor for DBP Precursors in raw water.
- (c) Only surface water sources must comply with PDWS for turbidity. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- (d) Unregulated contaminant monitoring helps determine where certain contaminants occur and whether they need to be regulated.

The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.  
Lead and Copper—53 homes tested.

## IMPORTANT DEFINITIONS

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHG (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 expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. 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.

**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.

**Regulatory Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

## WATER QUALITY TABLE ABBREVIATIONS

ND: Not detectable at reporting limit

NR: Not required

NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

PPB: Parts per billion or micrograms per liter

PPM: Parts per million or milligrams per liter

pCi/L: Picouries per liter is a measure of radioactivity

µS/CM: Microsiemens per centimeter

## WHAT YOU SHOULD KNOW ABOUT...

### Arsenic

While your drinking water meets the EPA standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

### Radon

Radon is a radioactive gas that you cannot see, taste or smell. Radon is found throughout the United States and can move up through the ground and into a home through cracks and holes in the foundation. Tap water may also release radon into the air in your home when showering, washing dishes or performing other household activities. Radon entering the home through tap water will, in most cases, be a small source of radon. Breathing air containing radon may lead to lung cancer and drinking water containing radon may cause increased risk of stomach cancer.

If you are concerned about radon in your home, testing is easy and inexpensive. There are simple, low cost ways to fix a radon problem, if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. Average radon levels in the City's groundwater supply between 1999 and 2000 ranged from 306 to 730 picocuries per liter, which is equal to less than 1 picocurie per liter in the air. For additional information, call the State Radon Program at (1-800-745-7236) or the USEPA's Radon Hotline at (1-800-SOS-RADON).

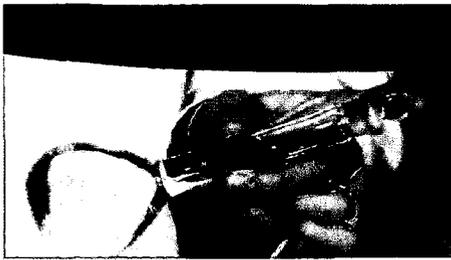
### Cryptosporidium

*Cryptosporidium* is a disease-causing micro-organism found in surface waters throughout the United States that can be transmitted through ingestion of contaminated food, drinking water, recreational waters, or fecal material. Our monitoring indicates the infrequent presence of this micro-organism in our untreated river water. Current test methods do not allow us to determine if the microorganisms are dead or if they are capable of causing disease. Although filtration methods cannot guarantee 100 percent removal, the City's treatment process is expected to remove over 99 percent of these microorganisms.

Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection with symptoms that include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illnesses. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection.

### Lead

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. City of Sacramento Department of Utilities 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>.



### TRADITION OF EXCELLENCE

Since its founding in 1849, the City of Sacramento has considered water quality of utmost importance. This Consumer Confidence Report is presented to enhance your understanding of where your water comes from and what it contains and to confirm that your drinking water continues to meet or exceed all state and federal drinking water standards.

The City of Sacramento Department of Utilities is committed to providing high quality, reliable, and environmentally sensitive water, sewer, drainage and solid waste services to the residents of Sacramento. In doing so, we work to conserve and preserve our water sources.

### CALIFORNIA SOURCE WATER QUALITY

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 urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Pesticides and herbicides**, that 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, agricultural applications, and septic systems.

**Radioactive contaminants**, that 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, U.S. Environmental Protection Agency (USEPA) and the State Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

### SOURCE WATER ASSESSMENT

The City of Sacramento has two independent water sources. Our primary water source is river water from the American and Sacramento Rivers, which provide 85 percent of our water supply. Groundwater provides the remaining 15 percent. Assessments of potential contaminating activities for the City's Sacramento River and American River water sources were completed in March 2006 and December 2008, respectively. These reports indicated that both rivers are most vulnerable to contaminants from recreational activities and that the Sacramento River is also most susceptible to agricultural contaminants.

An assessment of the City's groundwater wells was completed in December 2002. Two wells are considered most vulnerable to contaminants associated with automotive services and have an associated contaminant detected in the water that the wells produce. However, the City's drinking water meets all current state and federal drinking water standards. In addition, due to the proximity to potential contaminant sources, the wells north of the American River are considered most vulnerable to sewer collection systems, leaking underground storage tanks, known contaminant plumes, agricultural drainage, gas stations, dry cleaners, metal plating and chemical processing storage facilities, electrical/electronic manufacturing, and automobile repair and body shops. Wells south of the American River are considered vulnerable to leaking underground storage tanks and sewer collection

systems. Copies of the complete assessments are available for review in the City Clerk's office at City Hall or call 808-5454 to request a summary of the assessments.

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**Slow the Flow.** Use a low-flow hose nozzle when landscaping watering plants and only water on your assigned days. Also use a low-flow showerhead and take showers instead of baths.

**Spent Time in the Gutter.** Keep the gutters clear of debris and lawn clipping to prevent clogging of storm drains. If you are putting out yard clippings for pick-up, sweep them into the street.

**Join the Team.** Volunteer to stencil storm drains in your neighborhood with "No Dumping Flows to River" message by calling 808-41120.

### INFORMATION YOU SHOULD KNOW ABOUT WATER

This Consumer Confidence Report (CCR) is a summary of results of tests conducted to detect contaminants in your drinking water. It has been provided to educate you, our customer, about the quality of your drinking water. Many tests were conducted and only those constituents detected are listed in this report.

The CCR includes a comparison of the detected chemicals in the City of Sacramento Department of Utilities' drinking water to the standards set by the State Department of Public Health (Department) and the United States Environmental Protection Agency (USEPA).

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 USEPA's Safe Drinking Water Hotline at (1-800-426-4791).

**Your water meets or exceeds all federal and state drinking water standards.**

### SPECIAL INFORMATION AVAILABLE

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 USEPA's Safe Drinking Water Hotline (1-800-426-4791).

### HELPFUL PHONE NUMBERS AND INFORMATION

The City of Sacramento Department of Utilities is dedicated to providing safe, reliable and environmentally sensitive water, sewer, drainage and solid waste services.

**City of Sacramento Department of Utilities**  
(24 hours a day, 7 days a week)  
311 or (916) 264-5011  
[www.cityofsacramento.org/utilities](http://www.cityofsacramento.org/utilities)

**USEPA Safe Drinking Water Hotline**  
(800) 426-4791  
[www.epa.gov/OGWDW](http://www.epa.gov/OGWDW)

The City Council holds public meetings most Tuesdays at 6 p.m. in the City Council Chambers at 915 I Street, Sacramento. You can access Council agendas at [www.cityofsacramento.org/clerk](http://www.cityofsacramento.org/clerk).

本報告有關於您的飲用水的重要資料。請找人為您翻譯，或與能明白該報告的人交談。

Phiếu trình này có các chi tiết quan trọng về nước uống của quý vị. Hãy nhờ người dịch cho quý vị, hoặc hỏi người nào hiểu rõ các chi tiết này.

Este informe contiene información importante sobre el agua que usted bebe. Pida a alguien que se lo traduzca o hable con alguien que lo entienda.

အချက်အလက်များကို အသေးစိတ်ဖော်ပြထားပါသည်။ အချို့ကိစ္စများအတွက် အထောက်အကူပြုပေးနိုင်ပါသည်။

この報告書には私達の飲料水に関する重要な情報が記載されています。貴方のために翻訳してくれる人、あるいは内容を理解し説明してくれる人を見つけてください。

Tsab ntawv (report) no muaj cov kev qhia tseemiceeb txog koj cov dej haus. Thov ib tus tibneeg pab txhais rau koj lossis nrog tej tus tibneeg uas totaub txog tsab ntawv no tham.

Ang report na ito ay naglalaman ng mahalagang impormasyon tungkol sa tubig na inyong inilinum. Magpatulong sa taong maaring magsalin, o makipag-usap sa taong nakakaunawa nito.

Данный отчет содержит важную информацию о нашей питьевой воде. Переведите его или проконсультируйтесь с тем, кто его понимает.



call 800-545-4544  
我們講中文 - Hablamos Español  
Мы говорим по-русски - យើងនិយាយភាសាខ្មែរ  
Peb háis lus Hmoob - Chúng tôi nói tiếng Việt

## 2009 CITY OF SACRAMENTO WATER QUALITY REPORT

A consumer confidence report for the citizens of Sacramento



Congratulations! Your water meets or exceeds all federal and state drinking water standards.



# WATER QUALITY ANALYSIS RESULTS FOR 2009

The following table shows the detected constituents in your drinking water and compares them with drinking water standards set by United States Environmental Protection Agency (USEPA) and the State Department of Public Health (Department). To request a complete report, including non-detected items, please call (916) 264-5011.

## Your water meets or exceeds all current federal and state requirements

DETECTED PRIMARY DRINKING WATER CONSTITUENTS regulated to protect your health										
Constituent	Units	PHG or (MCLG) or (MRDLG)	MCL or (MRDL)	Surface Water			Ground Water		Major Sources	
				Range	Average	Year of Sampling	Range	Average		Year of Sampling
Arsenic	PPB	0.004	10	ND - ND	ND	2006	ND - 5.8	3.3	2008-2009	Erosion or leaching of natural deposits
Barium	PPM	2	1	ND - ND	ND	2006	ND - 0.197	0.14	2008-2009	Erosion or leaching of natural deposits
Chromium (total)	PPB	(100)	50	ND - ND	ND	2006	ND - 16	ND	2006, 2008	Erosion or leaching of natural deposits
Fluoride (a)	PPM	1	2	0.72 - 1.07	0.83	2006	0.10 - 4.0	0.90	2009	Water additive that promotes strong teeth
Nitrate (as nitrate)	PPM	45	45	ND - ND	ND	2009	ND - 17.9	6.30	2009	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
DETECTED SECONDARY DRINKING WATER CONSTITUENTS regulated for aesthetic qualities										
Constituent	Units	PHG or (MCLG) or (MRDLG)	MCL	Surface Water			Ground Water		Major Sources	
				Range	Average	Year of Sampling	Range	Average		Year of Sampling
Chlorine (distribution system)	PPM	[4]	[4.0]	0.04 - 1.14			0.59		2009	Drinking water disinfectant added for treatment
Total Trihalomethanes (distribution system)	PPB	N/A	80	ND - 61			38.6		2009	By-product of drinking water disinfection
Halooacetic Acids (distribution system)	PPB	N/A	60	ND - 56			30.4		2009	By-product of drinking water disinfection
Control of Disinfection By-Product precursors (TOC) (raw) (b)	PPM	N/A	treatment requirement if average TOC > 2	1.3 - 2.3			1.7		2009	Various natural and manmade sources
Constituent	Units	PHG or (MCLG) or (MRDLG)	MCL or (MRDL)	Level Point			Year of Sampling	Major Sources		
Total Coliform Bacteria (Total Coliform Rule)	% samples positive	(0)	more than 5.0% of monthly samples are positive	0.78%			2009	Naturally present in the environment		
		N/A	TT = 1 NTU	0.14						
Turbidity (c), (d)	NTU	N/A	TT = 95% of samples < 0.3 NTU TT = 100% of samples < 1.0 NTU	100%			2009	Soil runoff		
DETECTED UNREGULATED DRINKING WATER CONSTITUENTS (e)										
Constituent	Units	PHG or (MCLG)	MCL	Surface Water			Ground Water		Major Sources	
				Range	Average	Year of Sampling	Range	Average		Year of Sampling
Aluminum	PPB	600	1000	ND - 61	ND	2009	ND	ND	2009	Erosion of natural deposits; residue from some surface water treatment processes
Chloride	PPM	NONE	500	1.8 - 3.3	2.6	2009	15 - 106	41	2008	Erosion or leaching of natural deposits
Color	UNITS	NONE	15	1 - 1	1	2009	1 - 5	1	2008-2009	Naturally occurring organic materials
Specific Conductance	µS/CM	NONE	1600	74 - 258	133	2009	230 - 640	407	2008-2009	Substances that form ions when in water
Sulfate	PPM	NONE	500	5.8 - 22	12	2009	4.5 - 36	14	2008-2009	Erosion or leaching of natural deposits
Total Dissolved Solids (TDS)	PPM	NONE	1000	47 - 149	85	2009	207 - 613	238	2008-2009	Erosion or leaching of natural deposits
Turbidity	NTU	NONE	5	0.04 - 0.27	0.08	2009	0.05 - 6.2	0.73	2008-2009	Soil runoff
Hardness	PPM	NONE	No Standard	27 - 85	47.8	2009	116 - 332	190	2006-2007	Hardness is the sum of polyvalent cations present in the water, generally naturally occurring magnesium and calcium
Sodium	PPM	NONE	No Standard	1.8 - 7.1	4.5	2006	19 - 39	28	2008	Naturally occurring salt in the water
Calcium	PPM	NONE	No Standard	9.6 - 27	15.9	2009	30 - 110	55	2008	Erosion or leaching of natural deposits
Magnesium	PPM	NONE	No Standard	1.4 - 5.4	3.4	2006	9.0 - 42	21	2008	Erosion or leaching of natural deposits

- (a) The City's fluoridation program provides the addition of fluoride to all the City's drinking water. The City adjusts the natural levels of fluoride in our water supplies to the California DPH recommended optimal level.
- (b) Only surface water sources must monitor for DBP Precursors in raw water.
- (c) Only surface water sources must comply with PDWS for turbidity.
- (d) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- (e) Unregulated contaminant monitoring helps determine where certain contaminants occur and whether they need to be regulated.

The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Some of our data, though representative, are more than one year old.  
Lead and Copper—53 homes tested.

## IMPORTANT DEFINITIONS

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHG (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 expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**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.

**Primary Drinking Water Standard (PDWS):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**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.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

## WATER QUALITY TABLE ABBREVIATIONS

ND: Not detected

NR: Not required

NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

PPB: Parts per billion or micrograms per liter

PPM: Parts per million or milligrams per liter

pCi/L: Picocuries per liter is a measure of radioactivity

µS/CM: Microsiemens per centimeter

## WHAT YOU SHOULD KNOW ABOUT...

### Arsenic

While your drinking water meets the EPA standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

### Radon

Radon is a radioactive gas that you cannot see, taste or smell. Radon is found throughout the United States and can move up through the ground and into a home through cracks and holes in the foundation. Tap water may also release radon into the air in your home when showering, washing dishes or performing other household activities. Radon entering the home through tap water will, in most cases, be a small source of radon. Breathing air containing radon may lead to lung cancer and drinking water containing radon may cause increased risk of stomach cancer.

If you are concerned about radon in your home, testing is easy and inexpensive. There are simple, low cost ways to fix a radon problem, if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. Average radon levels in the City's groundwater supply between 1999 and 2000 ranged from 306 to 730 picocuries per liter, which is equal to less than 1 picocurie per liter in the air. For additional information, call your State radon program (1-800-745-7236), the EPA Safe Drinking Water Act Hotline (1-800-426-4791), or the National Safe Council Radon Hotline (1-800-SOS-RADON).

### Lead

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. City of Sacramento Department of Utilities 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>.