

# ANNUAL WATER QUALITY REPORT

Published June 2008



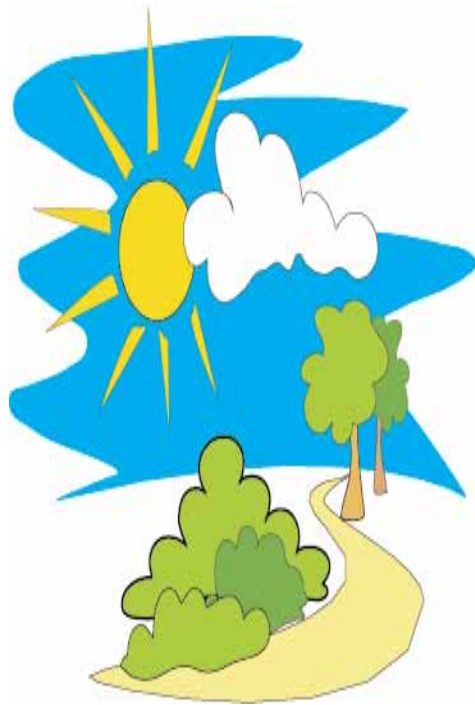
Helix Water District

## Your water quality

We are pleased to send you our Water Quality Report, also known as Consumer Confidence Report (CCR). Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (USEPA) and state drinking water health standards. Helix Water District vigilantly safeguards its water supplies and once again we are proud to report that our system has never violated a primary maximum contaminant level. This brochure is a summary of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards.

This report follows the California Department of Public Health Guidance for CCR dated January 1, 2008. It is our intent to provide this report to all of our consumers. Additional copies may be obtained by calling (619) 443-1031. If you have any questions or concerns regarding this Water Quality Report, please contact Helix's senior chemist at (619) 667-6248.

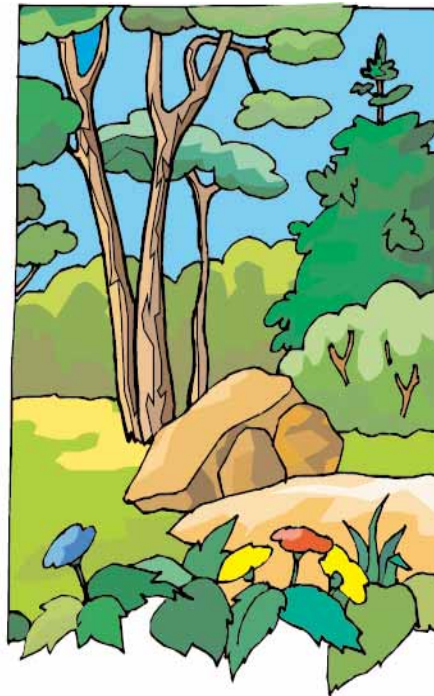
*Este informe contiene información muy importante sobre su agua de beber. Si usted desea una traducción de este reporte en Español, por favor llame al (619) 466-0585.*



## Educational information

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline: 1-800-426-4791.

Some people may be more vulnerable to contaminants 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 Safe Drinking Water Hotline: 1-800-426-4791.



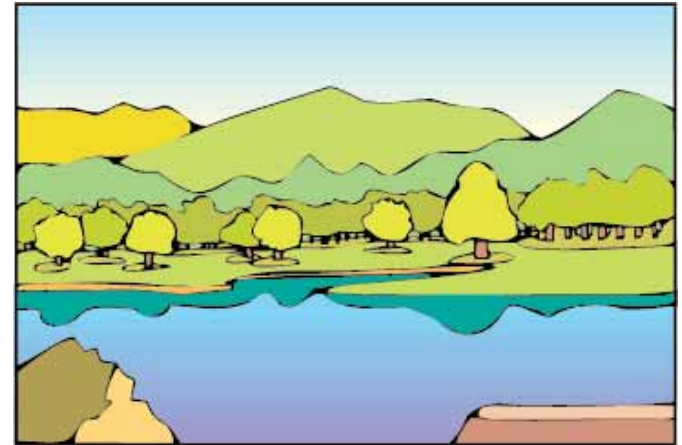
## Learn to conserve

Visit the Water Conservation Garden at 12122 Cuyamaca College Drive West, El Cajon, to find ways to save through low-water-use landscaping. More than half of Southern California's water is used for outdoor irrigation, so conservation is extremely important.

## Sources of your water

High-quality water at your tap begins with high-quality source water into our treatment plant. Our water originates from the Colorado River and Northern California rivers. Approximately five percent of our water was from local sources, such as Lake Jennings, Lake Cuyamaca, and El Capitan Reservoir. Approximately ten percent of Helix Water District's supply was treated by Metropolitan Water District at the Lake Skinner Treatment Plant. Ninety percent of our water is treated locally at Helix Water District's R.M. Levy Water Treatment Plant in Lakeside, CA. In our tables on the following pages, we list information on water quality from both plants.

A Watershed and Sanitary Survey is performed every five years on Helix Water District sources. The purpose is to survey and assess the watershed to determine the existence and potential hazards of contamination sources that could reach the public water supply. An assessment called a Sanitary Survey Update of the Lake Jennings drinking water source for Helix Water District was completed in January 2006.



Lake Jennings serves as a recreational area to the public, and we closely monitor activities that may affect water quality. We prohibit swimming, and provisions are made to ensure rental boats don't cause water contamination.

The water quality of Lake Jennings is considered vulnerable to water treatment plant solids return, recreational activities on Lake Jennings, and the effects of the 2003 Cedar Fire. Although the return of treatment plant solids to Lake Jennings is a potential risk, there also are benefits to this practice, including algae control and removal of particulate matter. Our source water monitoring program ensures that these risks are minimized. We have active community involvement in protecting our source. As always, we welcome public participation and comments on our Watershed and Sanitary Survey during our regularly scheduled Board meetings. You may request a summary of the assessment by contacting Helix's senior chemist at (619) 667-6248.

*The following statements do not necessarily apply to Helix Water District, but are included as mandatory language required by the California Department of Public Health for all California water utilities preparing a similar report. Again, Helix Water District met all EPA and California state drinking water standards.*

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**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

**Organic chemical contaminants**, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.

**Radioactive contaminants**, which can be naturally-occurring or 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 California 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.

## Definitions

- **Disinfection Byproduct (DBP):** DBPs are formed when disinfectants (chlorine, chloramines, ozone, or others) react with organic and inorganic compounds naturally occurring in the water.
- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.
- **Maximum Residual Disinfectant Level (MRDL):** The level of 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.
- **Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
- **Primary Drinking Water Standard (PDWS):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
- **Regulatory Notification Level (NL):** 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.

# Helix Water District summary of water quality results for 2007

<u>Treatment Plant Effluent</u>	State MCL	PHG / (MCLG) [MRDLG]	Helix Plant Range	Helix Plant Average	Skinner Plant Range	Skinner Plant Average	Major Sources
<b>Clarity</b>							
Highest Filter Effluent Turbidity (NTU) (a)	0.3	NS	n/a	0.10	n/a	0.13	Soil Runoff
Lowest monthly percentage of samples meeting the turbidity limits	95%	Highest % <0.3	n/a	100%	n/a	100%	
<b>Inorganic Chemicals</b>							
Aluminum (ppb) (b)	1000	600	150 - 200	175	ND - 57	ND	Residue from water treatment process; erosion of natural deposits
Barium (ppb)	1000	2000	ND - 100	ND	ND	ND	Erosion of natural deposits
Fluoride, naturally-occurring (ppm) (c)	2.0	1	0.2 - 0.3	0.3	0.2 - 0.3	0.2	Naturally occurring
Fluoride, treatment-related (ppm) (c)	2.0	1	0.5 - 1.0	0.8	0.5 - 0.9	0.8	Additive for dental health
Nitrate (as N) (ppm)	10	10	ND	ND	ND - 0.4	ND	Runoff, leaching from fertilizer; septic tank, sewage; natural deposits erosion
Nitrate & Nitrite (as N) (ppm)	10	10	ND	ND	ND - 0.4	ND	Fertilizer runoff; sewage; erosion
<b>Radionuclides (pCi/L) (d) (j)</b>							
Gross Alpha	15	(0)	3.2 - 5.4	4.6	ND - 5.5	ND	Erosion of natural deposits
Uranium	20	0.43	1.6 - 4.6	3.1	1.5 - 3.2	2.3	Erosion of natural deposits
<b>Distribution System</b>							
<b>Microbiological (e)</b>							
Total Coliform Bacteria (d) (% positive samples per month)	5.0%	(0)	Maximum 0.6%	0	0%	0%	Naturally present in the environment
Fecal Coliform & E. coli (f)	(e)	0%	0%	0%	0%	0%	Human and animal fecal waste
<b>Disinfection By-Products (DBPs), Disinfection Residuals, and DBP Precursors (Federal)</b>							
Total Trihalomethanes (ppb) (g)	80	n/a	5.5 - 47.4	25.9	n/a	n/a	By-product of drinking water chlorination
Haloacetic Acids 5 (ppb) (g)	60	n/a	1.9 - 7.6	4.0	n/a	n/a	By-product of drinking water chlorination
Chloramines as Cl <sub>2</sub> (ppm)	[4.0]	[4.0]	0.1 - 3.3	1.9	n/a	n/a	Drinking water disinfectant added for treatment
Bromate (ppb)	10	(0)	ND - 8.5	ND	n/a	n/a	By-product of ozonation
Control of DBP precursors (TOC)	TT	n/a	2.6 - 3.2	2.9	n/a	n/a	Natural and man-made sources

## Abbreviations

MCL: Maximum Contaminant Level	NS: No Standard
MCLG: Maximum Contaminant Level Goal	NTU: Nephelometric Turbidity Units
MRDL: Maximum Residual Disinfectant Level	pCi/L: picoCuries per liter (measure of radioactivity)
MRDLG: Maximum Residual Disinfectant Level Goal	PHG: Public Health Goal
n/a: not applicable	ppb: parts per billion, or micrograms per liter
ND: Not detected; Detection Limits for purposes of Reporting (DLRs) available upon request	ppm: parts per million, or milligrams per liter
	TOC: Total Organic Carbon
	TT: Treatment Technique

## Footnotes

- (a) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of measurements taken each month. 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.
- (b) Aluminum has both a primary and secondary standard.
- (c) Data for the naturally-occurring fluoride was taken before the fluoridation treatment began. Fluoridation treatment of water supplies at all five Metropolitan treatment plants started sequentially from 10/29/07 - 12/03/07. Helix Water District began fluoridating 12/05/07. Optimal Fluoride Control Range is 0.7 - 1.3 for this region.
- (d) Results are for the 2005/06 radiological monitoring program at Skinner Plant and for 2005 monitoring at R.M. Levy Water Treatment Plant.
- (e) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform positive.
- (f) Fecal coliform / E. coli MCLs: The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform/E. coli, constitutes an acute MCL violation. The MCL was not violated in 2007.
- (g) Calculated from a running annual average of Helix distribution system samples.

# Helix Water District summary of water quality results for 2007

## Secondary Drinking Water Standards – Aesthetic Standards

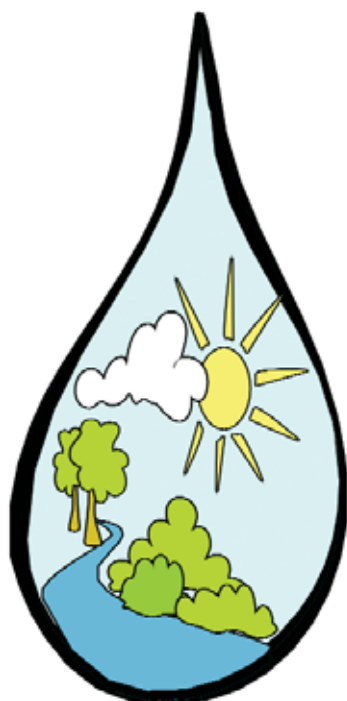
Parameter	State MCL	PHG	Helix Plant		Skinner Plant		Major Sources
			Range	Average	Range	Average	
Aluminum (ppb) (b)	200	600	150 - 200	175	ND - 57	ND	Residual from surface water treatment process; natural deposits erosion
Chloride (ppm)	500	n/a	84 - 92	88	84 - 96	92	Runoff/leaching from natural deposits; seawater influence
Color (CU)	15	n/a	1 - 2	2	1 - 2	2	Naturally occurring organic materials
Specific Conductance (µs/cm)	1600	n/a	818 - 920	869	755 - 927	841	Substances that form ions when in water; seawater influence
Sulfate (ppm)	500	n/a	180 - 210	195	134 - 202	169	Runoff/leaching from natural deposits; industrial waste
Total Dissolved Solids (ppm)	1000	n/a	532 - 550	541	438 - 551	495	Runoff/leaching from natural deposits; seawater influence

## Abbreviations

AL:	Action Level
CU:	Color Units
MCL:	Maximum Contaminant Level
ND:	Not detected
ppb:	parts per billion, or micrograms per liter
ppm:	parts per million, or milligrams per liter
µs/cm:	microsiemens per centimeter

## Lead and Copper Rule

The Lead and Copper Rule is an Environmental Protection Agency mandated rule that became effective on December 7, 1992. This rule requires treatment when lead and/or copper in drinking water exceeds certain levels. Lead enters drinking water mainly from the corrosion of lead-containing household plumbing. Since lead and copper contamination generally occur after water has left the distribution system, the best way to check if consumer water is contaminated is to test water from a household faucet. Monitoring is required every three years. As you can see from the results below, lead and copper are not a problem in our distribution system.



## Lead and Copper Rule Results

90th percentile of all samples collected = ND for lead  
 = 76 ppb for copper

Number of sample sites = 52 homes

Number of sites above AL of 15 ppb for lead = 0 sites

Number of sites above AL of 1,300 ppb for copper = 0 sites

Most recent sampling: June 2006

Next sampling due: September 2009

# Helix Water District summary of water quality results for 2007

## Additional Parameters

Parameter	State MCL	PHG / (MCLG)	Helix Plant		Skinner Plant	
			Range	Average	Range	Average
Alkalinity (ppm as CaCO <sub>3</sub> )	NS	NS	94 - 129	109	90 - 106	98
Calcium (ppm)	NS	NS	59 - 61	60	44 - 60	53
Chlorate (ppb)	n/a	NL = 800	n/a	n/a	ND - 23	24 - 43
Cryptosporidium (Oocysts/100L) (h)	TT	(0)	ND	ND	ND	ND
Hardness (ppm CaCO <sub>3</sub> )	NS	NS	250 - 260	255	194 - 254	226
Hardness (grains per gallon)	NS	NS	14.6 - 15.2	14.9	11.3 - 14.9	13.2
Magnesium (ppm)	NS	n/a	24 - 25	25	19 - 25	22
Methyl tert-butyl ether (MTBE) (ppb)	13	13	ND	ND	ND	ND
N- Nitrosodimethylamine (NDMA) (ppt)	NS	3	ND	ND	ND - 7.1	ND - 8.2
pH	NS	NS	7.8 - 8.1	8.0	8.1	8.1
Potassium (ppm)	NS	NS	4.1 - 4.4	4.3	3.8 - 4.5	4.2
Sodium (ppm)	NS	NS	79 - 84	82	73 - 89	83

## Unregulated Chemicals Requiring Monitoring (i) (j)

Parameter	State MCL	PHG / (NL)	Helix Plant		Skinner Plant		Major Sources
			Range	Average	Range	Average	
Boron (ppb)	n/a	(1000)	120 - 140	125	130 - 160	140	Runoff/leaching from natural deposits; industrial wastes
Chromium VI (ppb)	n/a	n/a	ND	ND	ND	ND	Industrial waste discharge; could be naturally present as well
Vanadium (ppb)	n/a	(50)	3.7 - 5.2	4.5	ND	ND	Naturally occurring; industrial waste discharge

## Footnotes continued

(h) In 2007, Cryptosporidium was ND at both Helix R.M. Levy Water Treatment Plant and Skinner Plant. Helix units are Oocysts/L.

(i) Unregulated contaminant monitoring helps EPA and the California Department of Public Health to determine where certain contaminants occur and whether the contaminants need to be regulated.

(j) 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.

## Abbreviations

MCL:	Maximum Contaminant Level
MCLG:	Maximum Contaminant Level Goal
NL:	Regulatory Notification Level
n/a:	not applicable
NS:	No Standard
ND:	Not detected; Detection Limits for purposes of Reporting (DLRs) available upon request
PHG:	Public Health Goal
ppb:	parts per billion, or micrograms per liter
ppm:	parts per million, or milligrams per liter
ppt:	parts per trillion, or nanograms per liter
TT:	Treatment Technique

## Quagga Mussels

The quagga mussel, a species of small freshwater mollusk native to Eastern Europe, has invaded the Colorado River and lakes of Southern California. A quagga mussel population can increase quickly because they are rapid breeders. A single female mussel can produce one million larvae per breeding season. The mussels were probably brought to California attached to boats towed overland from the Midwest.



While the presence of quagga mussels in raw water does not present a direct hazard to human health, they are a concern because they can harm native species and clog raw water transmission equipment such as pipes and pumps. A heavy infestation of quagga mussels can strip a lake of its algae and leave little food for other animals, such as fish. By attaching to surfaces, quagga mussels can clog the inside of pipes and pumps. In many cases, the only way to remove the mussels is to have a person crawl into the pipe and scrape them out by hand. Quagga mussels pose no threat to the treated water transmission system—pipelines, pumpstations, storage tanks, etc.

Helix Water District employees found quagga mussels in a raw water pipeline during a pipeline inspection and has a routine monitoring plan in place for quagga mussels. Helix Water District and other organizations are working diligently to control the spread of the quagga mussel and mitigate its impact to our valuable water supply and precious native water environment.



## For more information

If you have any questions or concerns regarding this Water Quality Report, please contact:

### Helix's Senior Chemist

(619) 667-6248 or [helix@helixwater.org](mailto:helix@helixwater.org)

Public participation is welcome at our Board meetings, which are held at 2 p.m. on the first and third Wednesdays of every month at the following address:

### Helix Water District

7811 University Ave., La Mesa, CA 91941  
(619) 466-0585

### Helix Water District Offices

Water Quality	(619) 443-1031
24-Hour Water Emergencies	(619) 466-3234





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