

PRIMARY STANDARDS (PDWS)	Units	Maximum Level MCL	State Goal PHG	Ventura River Average	Ventura River Range	Ground Water Average	Ground Water Range	CMWD Average	CMWD Range	Major Sources of Contamination in Drinking Water (Footnotes)
Water Clarity										
Treated Turbidity	NTU	TT	NA	0.10 (a)	0.02 - 0.10(a)	0.23	0.1 - 0.5	0.08 (b)	0.01-0.08 (b)	1
Radioactive Contaminants (e)										
Gross Alpha particle activity	pCi/l	15	NA	4.26	1 - 10	9.2	2.9 - 20.4	1.1	0.3 - 2.1	2
Radium 226	pCi/l	5	NA	0.08	ND - 0.3	0.7	0.1 - 0.4	NA	NA	2
Uranium (c)	pCi/l	20	0.5	3.0	1.8 - 4.9	8.2	3.4 - 19.3	NA	NA	2
Inorganic Contaminants										
Fluoride	ppm	2	1	0.51	0.44 - 0.55	0.52	0.43 - 0.64	0.2	0.2	4
Selenium	ppb	50	NA	ND	ND	7.2	ND - 18	ND	ND	5
Nitrate (as Nitrogen)	ppm	10	10	1.1	ND - 1.9	1.2	ND - 3.3	ND	ND	6
Lead and Copper Samples	Units	RAL	PHG	Samples Collected	Above RAL	90th Percentile	Major Sources of Contamination in Drinking Water			
Lead	ppb	15	2	50 (d)	0	1	7			
Copper	ppb	1300	0.17	50 (d)	2	970	7			

Footnotes: ¹Process and source variations ²Erosion of natural deposits ³Erosion of natural deposits; runoff from orchards; glass and electronics production waste ⁴Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories. ⁵Discharge from refineries or manufacturers; erosion of natural deposits. ⁶Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits. ⁷Internal corrosion of household plumbing systems

PRIMARY STANDARDS for Distribution System	Units	MCL MRDL	PHG (MCLG) MRDLG	Distribution System Average	Distribution System Range	Major Sources of Contamination in Drinking Water
Disinfection						
Chloramine Residual	ppm	4	4	2.3	0.4 - 4.0	Drinking water disinfectant added for treatment.
Disinfection By Products						
Total Trihalomethanes	ppb	80	NA	33 (c)	3 - 86	By-product of drinking water chlorination.
Total Haloacetic Acids	ppb	60	NA	27 (c)	2 - 75	By-product of drinking water chlorination.
Microbiological Contaminant Samples						
Total Coliform Bacteria	NA	5%	0	0	0-1	Naturally present in the environment.
Fecal Coliform Bacteria	NA	0	0	0	0	Human and animal fecal waste.

SECONDARY STANDARDS	Units	Maximum Level MCL	Ventura River Average	Ventura River Range	Ground Water Average	Ground Water Range	CMWD Average	CMWD Range
Color	Color	15	5	ND - 5	5	ND - 10	ND	ND
Odor	Threshold	3	ND	ND	ND	ND	ND	ND
Chloride	ppm	500	42	40-49	65	54 - 91	14	14
Corrosivity	ppb	Non corrosive (+)	0.26	-0.02 - 0.54	0.36	0.12 - 0.65	0.3	0.3
Iron (TT)	ppb	300	ND	ND	ND	ND	NS	NS
Total dissolved solids	ppm	1000	713	633- 772	1296	1056 - 1642	310	310
Specific conductance	umhos	1600	966	893-1027	1631	1354 - 2150	547	547
Sulfate	ppm	500	244	219 - 270	539	404 - 783	127	127
pH	pH units	6.5 - 8.5	7.6	7.3- 7.8	7.4	7.2 - 7.6	7.6	7.6
Hardness	ppm	NS	378	346 - 414	564	441 - 752	217	217
Calcium	ppm	NS	104	91 - 118	143	96 - 194	54	54
Magnesium	ppm	NS	29	28 - 33	50	40 - 65	20	20
Manganese (TT)	ppb	50	ND	ND - 0.02	ND	ND - 60	ND	ND
Sodium	ppm	NS	44	40 - 49	126	96 - 187	23	23
Phosphate	ppm	NS	ND	ND - 0.05	0.19	0.15 - 0.34	NS	NS
Potassium	ppm	NS	2.1	2.0 - 2.3	4.7	4.0 - 6.6	2	2
Total Alkalinity	ppm	NS	208	163 - 236	262	230 - 290	140	140

Footnotes: (a) Average is maximum reading, Avenue Plant Surface Filtration (TT) = 95% of samples equal or below 0.1 NTU. (b) Average is maximum reading, CMWD Direct Filtration (TT) = 100% of samples equal or below 0.2 NTU (c) Highest running average cannot exceed the MCL. (d) Samples were taken at selected households on a first draw in August 2005. (e) Monitoring completed in 2007 and 2008.

Legend

ppm: Parts per million or milligrams per liter.

pCi/l: PicoCuries per liter, a measure of radioactivity in water.

CMWD: Casitas Municipal Water District

TT: A required process intended to reduce the level of contaminant in drinking water

ppb: Parts per billion or micrograms per liter.

NA: Not applicable

ND: Not detectable

NS: No standard

NTU: Turbidity, a measure of the clarity or cloudiness of the water.

Water Quality Terminology

The Water Quality Summary shows constituents measured in Ventura's water and reported to the State Department of Health Services, and in some cases the USEPA. Some of the terminology used is described below:

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

Maximum Contaminant Level Goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to one's health. MCLGs are set by the USEPA.

Public Health Goal (PHG): The level of a contaminant in drinking water below

which there is no known or expected risk to one's health. The California Environmental Protection Agency sets PHGs.

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 a disinfectant added for water treatment below, which there is no known or expected risk to health. MRDLs are set by the USEPA.

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

Since 1923, the City of Ventura has reliably provided safe and clean water for drinking as well as fire protection to our community, which is essential for health of our families, businesses and the environment. The Public Works Environmental and Water Resources Division welcomes this opportunity to provide our residents with important water quality information about the City's drinking water supply, special health requirements, and our efforts to identify potential contaminants. The 2009 Water Quality Consumer Confidence Report has been prepared in compliance with the Federal and State Health and Safety Code requirements based on the most current 2008 data.

To ensure tap water is safe, the United States Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The City of Ventura successfully treats its water to consistently meet these regulations. The regulations of the Food and Drug Administration (FDA) establish limits for contaminants in bottled water, which must provide the same level of protection for the public health.

For More Information

If you would like more information regarding the City's water quality, facility improvements, or studies, please contact Ventura's Water Utility Manager's office at 652-4500. This Water Quality Confidence Report is available in Spanish and on the City's website at www.cityofventura.net

You are also invited to express your opinions at City Council meetings held most Monday evenings in the Council Chambers at Ventura City Hall, 501 Poli Street. Please visit the City Council link at www.cityofventura.net for a complete schedule.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. Para más información o obtener copias del informe de agua en español llame 652-4500.



Ventura Avenue Water Treatment Facility

Ventura's Water System & Sources

In order to produce, treat and deliver safe and clean drinking water to our residents, the City of Ventura owns and operates 11 groundwater wells, three water treatment plants, two treated water connections from Lake Casitas, 23 booster pump stations, 31 water storage reservoirs, 14 pressure zones and more than 380 miles of distribution pipelines. Based on the number of facilities and assets, the CDPH has categorized the City's water system operations as a "5" – indicating the highest degree of treatment and distribution complexity.

The City is fortunate to have **three local water sources**, each producing approximately one third of the entire water supply. One portion is from the **Ventura River at Foster Park**, pumped from four shallow wells and a subsurface collector. This water drains from a 51,000-acre lower watershed in the Ojai and Ventura River Valleys that includes the tributaries of the San Antonio and the Coyote Creeks. Water is also purchased from Lake Casitas, which is operated and treated by the **Casitas Municipal Water District (CMWD)** for distribution through the City's system to customers. Most of this water drains from the upper watershed that is federally protected to limit contamination of the lake. Water quality in the river and the lake are similar. Water is also pumped from deep **groundwater wells** located in the City's east side near Victoria Avenue and in Saticoy. Water quality from the aquifers in the Fox Canyon, Mound, and Santa Paula groundwater basins are similar, but include about two times the total dissolved solids (TDS) or minerals (hardness) than the water from the other watersheds.



Water Treatment

All of the City's water is treated to meet strict State and Federal regulations. In 2007, the Avenue Water Treatment Facility was modernized to treat water from the Ventura River with a reliable and effective process known as membrane ultrafiltration (UF). Thousands of UF hollow fiber filtration membranes provide a physical barrier to pathogens and particles larger than the 0.02 micron pore size, including bacteria, viruses, giardia, and cryptosporidium.

The groundwater sources are treated at either the Bailey or Saticoy Plants with prechlorination and direct media filtration to remove iron, manganese, and turbidity particles, and disinfected with chloramines. Additional treatment with polyphosphate is provided at each plant to help minimize the corrosion of plumbing in your home. CMWD treats the water from Lake Casitas with direct media filtration and with chloramines for disinfection prior to delivery into the City's system.

The City uses chloramines, (chemicals that contain chlorine and ammonia), for continuous disinfection of the drinking water in the distribution system. Chloramines were selected as the preferred disinfectant because of their ability to provide disinfection over a longer period of time, and improve taste and odor as compared to using chlorine alone. Chloramines have been proven to effectively kill microorganisms while producing lower levels of disinfection byproducts such as trihalomethanes (THMs) and haloacetic acids (HAAs), which are potentially harmful contaminants. Drinking water containing these byproducts in excess of the regulated maximum contaminant level (MCL) may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer.

Although chloramines are desirable in protecting the water distribution system, their use requires additional precautions for some water uses. If a member of your household requires dialysis, you should contact your physician or dialysis service provider to assure proper protective equipment is used during the treatment. If you use tap water for fish or other aquatic animals that use gills for breathing, you need to test and be sure the chloramines are completely removed before use. Setting water in an open container for 24 hours prior to use will not remove all chloramines in the water. Your local pet store can provide information and products for the proper removal of chloramines.

Water Quality Monitoring & Results

Ventura owns and operates a full-scale, State-certified laboratory and may also use outside State-certified labs to monitor water quality. Water quality constituents that were detected by the laboratories during 2008 are listed on the Water Quality Summary Table (see back page). All drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. As reflected in the summary, Ventura's water system did not have any violations during the reporting period and we are proud that our drinking water meets or exceeds all State and Federal requirements.

Our operations are also designed to protect and monitor public health. All treatment and distribution water system operating personnel must earn increasingly rigorous State certifications from the CDPH and maintain this certification through continuing education.

Treatment plants are continuously monitored for specific water constituents by special automated instrumentation to ensure that the process is always producing water of high quality. Turbidity (cloudiness of the water) is monitored to indicate the effectiveness of the filtration processes, especially for surface waters. The City and CMWD are required to measure turbidity levels every 15 minutes because high turbidity can hinder the effectiveness of the chloramines disinfectant that kills bacteria and viruses.

Water Quality Reporting

The City submits monthly and annual reports to the State for review that summarize treatment and distribution operations and drinking water quality. The State annually inspects the City's water system, and prepared an Engineering Report in August 2007, finding that the City's sources, facilities, and operations are capable of producing safe and reliable water quality, which meet State and Federal drinking water standards and regulations.

In 2008, the City met the triennial lead and copper corrosion monitoring requirements by sampling 50 locations to test consumer's tap water. The tests results indicated that no additional corrosion control treatment is required and a summary is provided in the Water Quality Summary Table (see back page).

Water System Studies & Improvements

Prepared every 10 years, a new Water System Master Plan is currently nearing completion and will include an evaluation of capacity and delivery and recommendations for capital improvements based on an analysis of water supply, distribution, and water quality. While the City has adequate supplies for the near future, planning is underway for additional reliability and redundancy improvements to ensure future supply, even during drought conditions. Supplemental water supply sources are also being evaluated to determine their cost effectiveness and water quality benefits.

Current improvement projects include two new wells on the Eastside, renovation of the Saticoy Plant, evaluation of the Ventura River Foster Park well field strategies, replacement of aging water mains throughout the City (including the Foster Hillside neighborhoods), and installation of emergency generators for uninterrupted operation of two critical booster pump stations. Due to our aging infrastructure and environmental regulations, we expect to continue our aggressive capital project program over the next few decades. Significant financial investment by the community will be required to replace our systems and protect our water supply for future generations.

The City, like other water purveyors in the country, completed a federally mandated review of the security of its water system. This review evaluated all water facilities and prioritized security measures to minimize the risk of damage or contamination due to a malevolent act. As a result, the City has upgraded its security and will continue to take steps to improve the protection of our water system.

Water Health Evaluation

Identifying threats to our water quality as well as potential contaminants is important to sustaining a healthy water supply. In 2006, the City completed a five-year update to the Sanitary Survey of the Lower Ventura River Watershed. The purpose of the study was to identify potential sources of contamination within the watershed and offer recommendations to reduce possible risks to the water supply and accordingly adjust the ongoing watershed water quality monitoring program. Since 2002, the City has also

conducted an expanded testing program for specific water quality contaminants along the Ventura River, Coyote Creek, which may aid in early detection and direct planning for future improvements.

In addition, a separate Drinking Water Source Assessment for all the City's water supplies was completed in January 2002 to identify existing or potential threats to sources of supply, including groundwater. No contaminants were detected then or occur now in the water supply from surrounding activities such as gas stations, agricultural drainage, dry cleaners, urban runoff, sewer systems, metal plating/finishing and repair shops.

As a water supplier, the City must complete an evaluation of its drinking water supply with respect to Public Health Goals (PHG) every three years. The goals are advisory only, requiring public notification, and are not mandatory limits. The City completed the last evaluation in 2007, which determined that ten chemicals, although well below the maximum contaminant level limit, exceeded a State PHG or the Federal Maximum Contaminant Level Goal (MCLG). The identified contaminants were lead, copper, arsenic, uranium, gross alpha and beta particles, radium 226, bromodichloromethane, bromoform, and dichloroacetic acid.

Copper and lead can be found in water as a result of the corrosion of plumbing fixtures used in most homes. The City has conducted tests to optimize its treatment with corrosion inhibitors in an effort to further reduce lead and copper levels. High levels of lead can result in kidney problems or high blood pressure, and delays in physical and mental development in children. High levels of copper are known to cause gastrointestinal disturbance and kidney damage. Arsenic, and the four naturally occurring radioactive isotopes that typically occur in drinking water by the erosion of natural deposits, are considered carcinogenic. Noncarcinogenic effects of uranium on the kidneys and the liver have been documented. Radium is known to cause tumors. Bromodichloromethane, bromoform, and dichloroacetic acid are formed during the disinfection process with chlorine and can increase the risk of cancer and effects on the liver, kidney and central nervous system.

Potential Concerns

Drinking water, including bottled water, may contain small amounts of some contaminants, which 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.

Sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up contaminants 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, agriculture and livestock operations and wildlife.

- Inorganic contaminants, such as salts and metals that may be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides 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.

The uranium content in the City's water supplies is generally well below the maximum contaminant level of 20 pCi/L. However, during 2008, the average of quarterly samples for the Mound Well was 19 pCi/L. This well also contains higher than average total dissolved solids and sulfate levels. The well is operated less often than the other wells with better water quality and its water is blended with the other groundwater sources to lower the TDS, sulfate and uranium content in the water. Some people who drink water containing uranium in excess of the MCL over many years may have kidney problems or an increased risk of developing cancer.

Some people are more vulnerable to contaminants in drinking water than the general population. Immuno-compromised individuals, such as people with cancer, those undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and some elderly people and infants can be particularly at risk from infections and are at greater risk of developing life-threatening illnesses. The City encourages immuno-compromised individuals to consult their doctors regarding appropriate precautions to avoid infection.

The City takes precautions to eliminate the risk of infection from microbial contaminants, including viruses, bacteria, Giardia and Cryptosporidium, from its water system. These organisms are found in surface water throughout the United States and ingesting them may cause an abdominal infection. The City has been conducting monthly sampling for possible risks in the watershed for the last two years. There was no detection of the Giardia or Cryptosporidium in any of the 24 samples. The new membrane filtration improvements installed at the Avenue Treatment Plant are very effective at removing these contaminants. The media filtration used by Casitas, although good at the removal of Giardia and/or Cryptosporidium, is not considered 100% effective. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the infection within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness, and are encouraged to consult their doctor regarding appropriate precautions to take to avoid microbial infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. The USEPA and the Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial contaminants are available from the Safe Drinking Hotline at 1-800-426-4791.