



City of Woodland

REPORT TO MAYOR AND CITY COUNCIL

AGENDA ITEM

**TO: THE HONORABLE MAYOR
AND CITY COUNCIL**

DATE: April 15, 2008

SUBJECT: Receive 2007 Water Quality Report

Report in Brief

The City of Woodland is dedicated and committed to providing the highest quality drinking water feasible. Each year, the City samples and analyzes the water supply to ensure the system meets or exceeds all regulatory requirements for health standards. The results from the 2007 testing and analyses, as outlined in the attached 2007 Annual Water Quality Report, reflect that Woodland water continues to meet or exceed all current federal and state quality standards. The attached report also educates consumers by outlining and defining the test results and sources for both regulated and unregulated substances and identifies areas of continuing and growing concern for water system reliability.

Staff recommends that the City Council receive and review the 2007 Water Quality Report.

Background

Per State guidelines the City, as a Water Purveyor, produces and distributes an Annual Water Quality Report to inform consumers of water quality testing results and to address related items or areas of interest to current or future water quality. The attached report was tailored per staff input and will be published by Gemini Group LLC for distribution to consumers as inserts to utility bills. As outlined in the report, drinking water standards are identified as Primary (regulated and enforced for health), Secondary (regulatory recommendations for aesthetics – taste, odor, color), and Unregulated (may be regulated in the future and some are of concern on the other end of the cycle in wastewater effluents). The report addresses the sources, source water assessment, health information, and contact information related to the City's drinking water. The Report also identifies future requirements related to water metering, water supply protection, water hardness and specific constituents of growing concern.

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Discussion

The City obtains its water from wells which tap into groundwater aquifers at varying depths throughout the City. Groundwater aquifers are primarily replenished from rain seeping into the soil and becoming trapped at varying depths by impermeable layers (in this region, typically clay deposits). Groundwater replenishment is a slow process for reaching the depths from which we draw our water and the process serves to filter the water from most impurities carried from the surface. The quality of water eventually delivered to customers is largely a function of chemical and mineral leaching and erosion of the geologic formations from which the aquifers flow. Before entering the City system, water is disinfected using chlorine.

Protection of groundwater aquifer(s) from contamination is of paramount concern to the City and a continuing focus for pursuing future system reliability. Contaminants that do end up in the water supply primarily come from septic systems, storm water runoff carrying chemicals and other constituents washed from pavements, industrial wastes, animal wastes, fertilizers and pesticides from agricultural and landscaped areas, copper and lead leaching from pipes, and from the chlorine disinfection process itself.

Two constituents warranting mention are nitrates and boron. Nitrate contamination of groundwater comes from fertilizers, industrial waste chemicals, seepage from septic systems and animal manure. Nitrate concentration levels vary throughout the City and vary within each well site at different times and different levels (aquifer zones). However, trends demonstrate nitrate levels are rising on average at a concerning number of well sites and the City is taking actions to address this concern. Boron is a common constituent of Woodland water which exceeds the quantity for “notification level”. Boron is a naturally occurring chemical and has always been in the City’s groundwater and it is not a recent occurrence. Currently, there is no established acute or long term health risks associated with boron in drinking water. However, boron is toxic to plants and agronomists and farmers prefer irrigation water with less than 1 mg/L of boron. This becomes a potential impact on the other end of the treatment process for wastewater effluent standards for Tule Canal and the Yolo Bypass.

Fiscal Impact

Staff management, publication and distribution costs are approximately \$5,000 and funded through the Water Enterprise Fund.

Public Contact

The water quality report will be distributed to residents via their water bill. All residents will receive a copy in their monthly water bill before June 2008. The report will be distributed to managers of apartments, retirement homes and property managers to be made available to their residents. City Departments will also receive copies to make available to the general public. The City’s water supply and reliability focus has been presented (and has been well received) in various

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forums around the City including the Farm Bureau and Chamber of Commerce. Continuing public education is planned as the City progresses in addressing system needs. A council workshop is planned for April 29, 2008 to focus on water program requirements and projects.

Recommendation for Action

Staff recommends that the City Council receive and review the 2007 Water Quality Report.

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Reviewed by: Dick Donnelly, P.E.
Acting Public Works Director

Mark G. Deven
City Manager

Attachment: 2007 Draft Water Quality Report

Substances That Could Be in Water

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.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the California 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. 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.

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 can 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, which are by-products of industrial processes and petroleum production, and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems;

Radioactive Contaminants, that can be naturally occurring or can be the result of oil and gas production and mining activities.

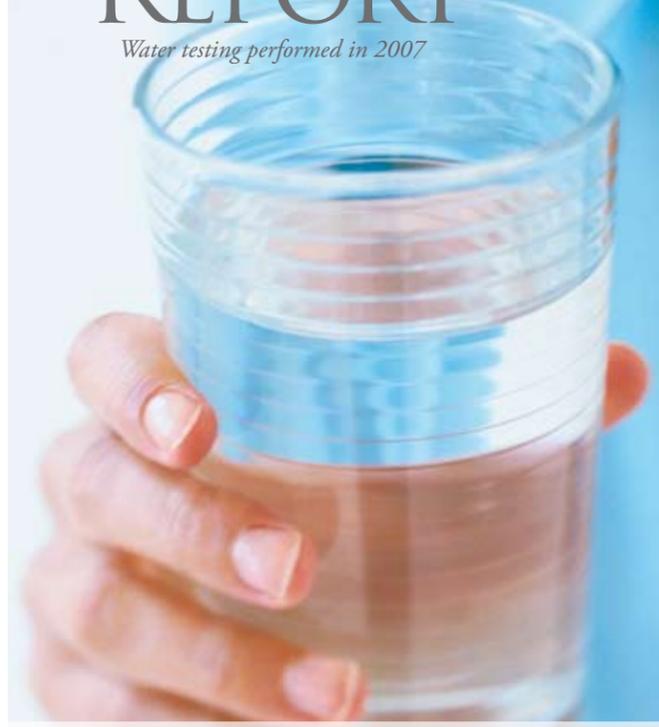
More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

City of Woodland
655 N. Pioneer Ave
Woodland, CA 95776

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ANNUAL WATER QUALITY REPORT

Water testing performed in 2007



Proudly Presented By:
CITY OF
WOODLAND

Anualmente la Ciudad de Woodland distribuye un reporte a todos los clientes explicando la calidad y el contenido del agua potable, que asegure que el agua proveída sea suficientemente limpia y saludable para beber.

PWS ID#: 5710006

Contact Us

For more information about this report, or for any questions relating to your drinking water, please phone the Woodland Public Works Department at (530) 661-5962 or e-mail: pubworks@cityofwoodland.org.

Para más información acerca del reporte o si tiene preguntas acerca del agua potable por favor llame al Departamento de Obras Públicas de la Ciudad de Woodland al (530) 661-5962 o envíe un correo electrónico a pubworks@cityofwoodland.org.

Property owners: Please share this information with your tenants!

Get Involved

Join us in our efforts to conserve and safeguard our natural resources. Check with the Public Works Department for water-saving devices that you can use in your home.

The City of Woodland periodically conducts public meetings and workshops concerning water issues. The Woodland City Council receives public comments at their regular meetings which are held on the first and third Tuesdays of each month. For a complete schedule of City Council meetings, please call the Secretary to the City Manager at (530) 661-5800 or go to <http://www.cityofwoodland.org/UserFiles/File/City%20Council/Meetings2008Revised.pdf>.

Water Meters

In January 2006, a state law became effective that requires water suppliers to install water meters and charge for water services based on actual volume of water delivered. Specifically, the City is required, by January 1, 2010, to install water meters and charge for water based on the meter reading for service connections established after 1991. For connections established prior to 1992, the City of Woodland's water was completed in December of 2002 and our groundwater is most vulnerable to historic and present-day, land-use activities, including agriculture, historic use of septic systems, gas stations, dry cleaners, and historical contamination plumes from these sources. A copy of the complete assessment report is available at <http://swap.ice.ucdavis.edu/TInfo/TSources.aspx?system=7710006>, or contact Doug Baxter at (530) 661-5975.

Where Does Your Water Come From?



Source Water Assessment

The California Department of Public Health requires water providers to conduct a source water assessment (SWA) to help protect the quality of future water supplies. The SWA describes where a water system's drinking water comes from, the type of polluting activities that may threaten source water quality, and an evaluation of the water's vulnerability to those threats. The assessment for the City of Woodland's water was completed in December of 2002 and our groundwater is most vulnerable to historic and present-day, land-use activities, including agriculture, historic use of septic systems, gas stations, dry cleaners, and historical contamination plumes from these sources. A copy of the complete assessment report is available at <http://swap.ice.ucdavis.edu/TInfo/TSources.aspx?system=7710006>, or contact Doug Baxter at (530) 661-5975.

Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

To Our Water Customers

The City of Woodland is pleased to provide you with its 2007 annual water quality report. This report is designed to inform you about the quality of the water that is provided to you.

The City of Woodland is dedicated and committed to providing our customers with the highest quality drinking water available. We are pleased to announce that the City of Woodland's water supply meets or exceeds all federal and state standards. Our goal is to continue to provide a safe and dependable supply of drinking water.

Under the guidelines provided by the U.S. Environmental Protection Agency (U.S. EPA) and the California Department of Public Health (CDPH), the City of Woodland monitors and tests the drinking water from source to tap. Before water reaches your tap, hundreds of these tests have been performed to detect more than 80 different kinds of contaminants and ensure that your water meets all regulatory requirements for health standards. In addition to the substances reported, we tested for 100 other substances and no measurable amounts were found. We hope this report will provide the answers to any questions you may have about the drinking water supplied by the City of Woodland.

What Does Our Water Contain?

Before we deliver water to your homes, we take many steps to ensure its safety. During the past year we have taken hundreds of water samples in order to determine the presence of any inorganic, biological, radioactive, volatile organic, or synthetic organic constituents. In response to your concerns, we regularly collect and test other samples from the water sources, the distribution system, and customers' homes. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

REGULATED PRIMARY SUBSTANCES								see Definitions for explanation of abbreviations →
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AVERAGE	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE	
Arsenic ¹ (ppb)	2007	10	0.004	1.1	ND-4.2	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes	
Asbestos (MFL)	2007	7	7	0.11	ND-1.9	No	Internal corrosion of asbestos cement water mains; erosion of natural deposits	
Barium (ppm)	2007	1	2	0.23	0.2-0.27	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits	
Chromium (ppb)	2007	50	(100)	17.3	12-25	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits	
Combined Radium (pCi/L)	2007	5	(0)	1.33	1.12-1.58	No	Erosion of natural deposits	
Fluoride (ppm)	2007	2.0	1	0.19	0.14-0.26	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories	
Gross Alpha Particle Activity (pCi/L)	2007	15	(0)	2.3	ND-2.88	No	Erosion of natural deposits	
Haloacetic Acids (ppb)	2007	60	NA	0.55	ND-1.2	No	By-product of drinking water disinfection	
Nitrate [as nitrate] (ppm)	2007	45	45	26.3	3-44	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits	
Selenium (ppb)	2007	50	(50)	8.1	ND-23	No	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)	
TTHMs [Total Trihalomethanes] (ppb)	2007	80	NA	3.88	2.9-4.9	No	By-product of drinking water chlorination	
Uranium (pCi/L)	2007	20	0.43	0.49	ND-0.87	No	Erosion of natural deposits	

Distribution System Lead and Copper (Tap water samples were collected from 63 homes in 2007)								
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE ACTION LEVEL	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Copper (ppb)	2007	1.3	0.17	0.095	0	ND-0.72	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2007	15	2	2.5	0	ND-0.034	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

REGULATED SECONDARY SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AVERAGE	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2007	500	NS	65	45-75	No	Runoff/leaching from natural deposits; seawater influence
Foaming Agents [MBAS] (ppb)	2007	500	NS	20	ND-80	No	Municipal and industrial waste discharges
Odor-Threshold (TON)	2007	3	NS	1	1-1	No	Naturally-occurring organic materials
Specific Conductance (µS/cm)	2007	1,600	NS	868	590-996	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2007	500	NS	31	20-37	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2007	1,000	NS	512	430-560	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2007	5	NS	0.10	ND-0.37	No	Soil runoff

UNREGULATED SUBSTANCES			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AVERAGE	RANGE LOW-HIGH
Bicarbonate (ppm)	2007	326	230-390
Boron (ppm)	2007	2.03	1.6-2.5
Calcium (ppm)	2007	68	58-76
Hardness (as CaCO ₃) (ppm)	2007	372	310-430
Magnesium (ppm)	2007	50	41-58
pH (Units)	2007	8.23	8.1-8.4
Potassium (ppm)	2007	2.28	2.1-2.5
Sodium (ppm)	2007	61	53-67
Total Alkalinity (ppm)	2007	326	230-390

¹ Effective January 23, 2006, the federal arsenic MCL is 10 ppb. A new state MCL has not yet been adopted and remains as 50 ppb.

Definitions

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

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

MCL (Maximum Contaminant Level): 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 (SMCLs) are set to protect the odor, taste and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): 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. EPA.

MFL (million fibers per liter): A measure of the presence of asbestos fibers that are longer than 10 micrometers.

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

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

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactive emissions.

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

PHG (Public Health Goal): 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 EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TON (Threshold Odor Number): A measure of odor in water.

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

Woodland Water Quality (Nitrate in our water source)

At this time Woodland's water supply does not exceed the California Department of Public Health standard of 45 ppm of nitrate. While your drinking water meets the current U.S. EPA's standards, one area of concern is the rising level of nitrate in Woodland's water supply. The City of Woodland is taking this issue very seriously since nitrate in drinking water at levels above 45 ppm (MCL) is a health risk for infants of less than six months of age.

Over the past years, the City of Woodland has experienced increasing nitrate levels in most of our wells. Several measures have been introduced to ensure that the city's water supply system provides water that meets regulatory requirements. Such measures include:

- Installation of nitrate analyzers on the wells when the nitrate trend reaches 90% of state recommended maximum contaminant level (MCL)
- Shutting down and abandoning wells that have 95% of MCL as indicated by the nitrate analyzer
- Regular sampling to track trend of nitrate concentration
- Installation of pump to waste technology on new wells to pump water to storm drains when nitrate levels reach 95% of MCL until it lowers to 70% of MCL.

There is an increasing concern of this upward nitrate trend because it signifies the possible inability of the City to continue to utilize many of its existing wells. Many of the city's existing water wells may need to be replaced or altered to reduce the nitrate levels. From a long-term perspective the City is continuing to evaluate the need and feasibility of alternative higher quality water supplies such as from the Sacramento River.

How Hard Is My Water?

A concentration of 17.1 parts per million (ppm) of hard water is equal to 1 grain per gallon. Woodland's water can be as high as 430 ppm, which equals about 25.1 grains per gallon. Water hardness does not affect a person's health. It leaves mineral deposits over time, may impact the life expectancy of plumbing fixtures, and water heaters, and may not be aesthetically pleasing. (See table above.)

Protect Your Water Supply

Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water costs. Please help protect your water supply and recycle or properly dispose of household and automotive products that contain chemicals. Minimize the use of fertilizers and pesticides that can wash off and pollute streams or seep into groundwater supplies.