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 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 Ukiah
300 Seminary Avenue
Ukiah, CA 95482

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

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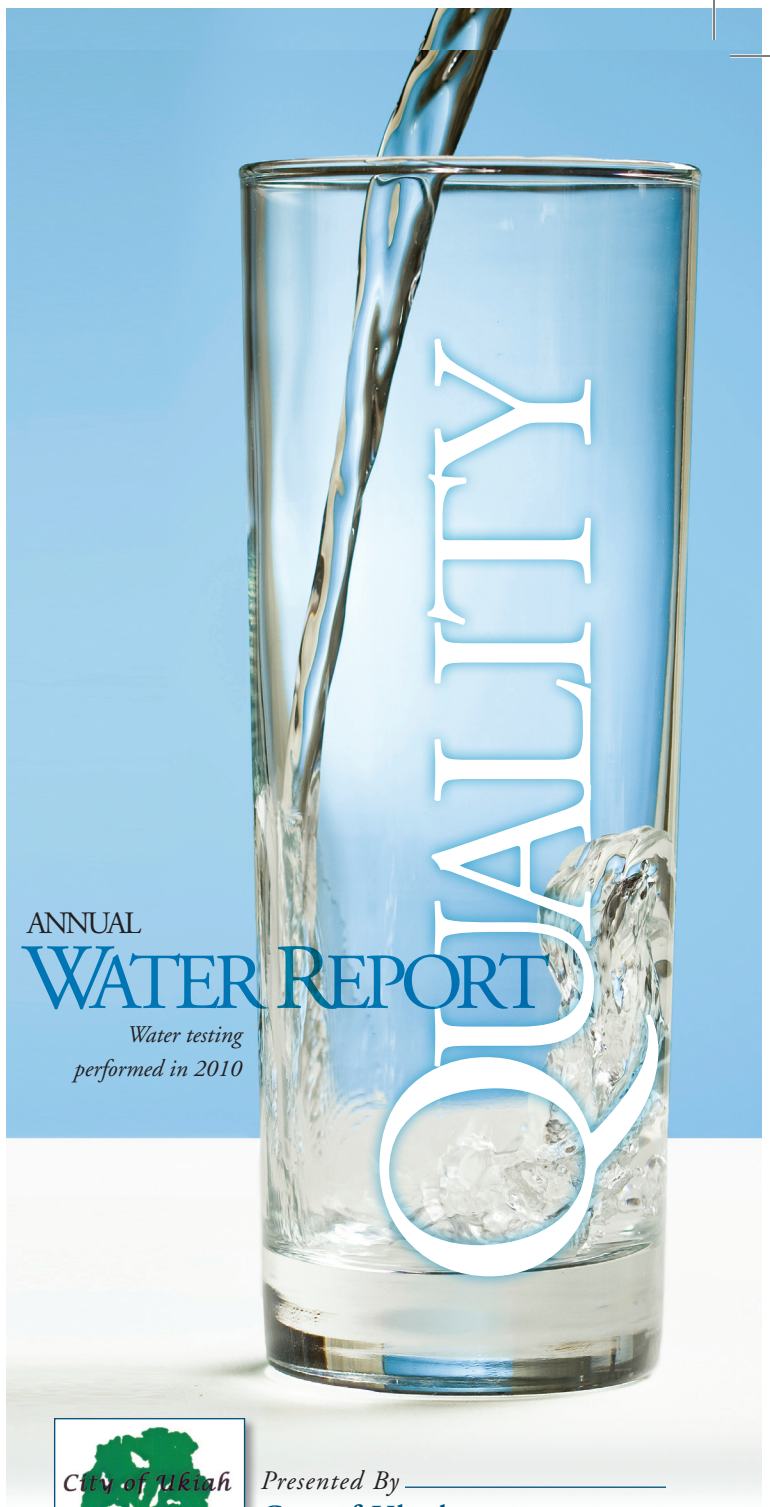

ANNUAL WATER REPORT

Water testing performed in 2010

Presented By
City of Ukiah

PWS ID#: CA2310003

2010 Executive Summary

The City of Ukiah, Public Works Department, Water Division, is responsible for providing a safe and aesthetically pleasing water supply to its customers. The Water Division continues to consistently meet and exceed State and Federal standards for drinking water quality.

Last year, 2010, brought some significant changes to the City of Ukiah's Water Division and its customers. The City of Ukiah added two new groundwater sources to meet increasing water demands and improve the reliability of the water system. Also, after many years of static water rates, a rate increase became necessary to ensure adequate source waters and system infrastructure upgrades to an aging water system.

In 2010, the water levels of Lake Mendocino were substantially increased. As a result, the outflow from the Coyote Dam remained consistent throughout the summer months, which provided an adequate water supply to the City of Ukiah's Water Treatment Plant.

The City of Ukiah, Public Works Department, Water and Sewer Division, has also continued its efforts to minimize groundwater contamination through sewer-main lining and sewer inspection programs.

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 or http://water.epa.gov/drink/hotline.

Community Participation

Regularly scheduled Ukiah City Council meetings convene on the first and third Wednesday of each month at 6 p.m. at the Ukiah Civic Center, 300 Seminary Avenue, Ukiah, CA. These meetings provide citizens with the opportunity to express concerns regarding the City's drinking water.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to $1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Paul Smith, Water Treatment Plant Supervisor, at (707) 467-2842.

Where Does My Water Come From?

The City of Ukiah supplies its customers with water that is considered underflow from the Russian River, as well as three groundwater sources. The amounts of water delivered from each source, and when they are used, is dependent on both the demand on the system and the time of year. There are times of emergency when the City may have to purchase water from our neighboring water systems. These systems are Millview County Water District and Willow County Water District.

LT2 Rule

The U.S. EPA has created the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) for the sole purpose of reducing illness linked with the contaminant *Cryptosporidium* and other disease-causing microorganisms in drinking water. The rule will bolster existing regulations and provide a higher level of protection of your drinking water supply.

Sampling of our water source has shown the following:

- *Cryptosporidium*: 0–4.3 oocysts
- *Giardia lamblia*: None detected
- *E. coli*: 0–12.2 colonies

It is important to note that these results are from our raw water source only and not our treated drinking water supply. For more information, contact the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Lead in Home Plumbing

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. The City of Ukiah 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 www.epa.gov/safewater/lead.

Sampling results

During the past year, the City of Ukiah Water Division has taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

				Surface Water		Distribution System		Groundwater			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2010	[4.0 (as Cl2)]	[4 (as Cl2)]	NA	NA	0.47	0.20–0.90	NA	NA	No	Drinking water disinfectant added for treatment
Nitrate [as nitrate] (ppm)	2010	45	45	ND	NA	ND	NA	6.7	3.9–9	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Turbidity[1] (NTU)	2010	TT=1	NA	0.078	0.012–0.078	NA	NA	NA	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2010	TT=95% of samples<0.3	NA	100	NA	NA	NA	NA	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community[2]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2010	1.3	0.3	0.55	0/32	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2010	15	0.2	5.1	0/32	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

				Surface Water		Distribution System		Groundwater			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride[3] (ppm)	2010	500	NS	5.3	NA	6.3	NA	8.7	7.4–10	No	Runoff/leaching from natural deposits; seawater influence
Corrosivity[4] (Units)	2010	Non-corrosive	NS	10.44	NA	10.76	NA	10.7	10.2–11.2	No	Natural or industrially influenced balance of hydrogen, carbon, and oxygen in the water; affected by temperature and other factors
Foaming Agents [MBAS] (ppb)	2010	500	NS	81	NA	ND	NA	25	ND–77	No	Municipal and industrial waste discharges
Odor–Threshold (TON)	2010	3	NS	ND	NA	2.2	NA	ND	NA	No	Naturally occurring organic materials
Specific Conductance (micromhos)	2010	1,600	NS	200	NA	220	NA	313	310–320	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2010	500	NS	12	NA	11	NA	16	12–19	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2010	1,000	NS	100	NA	120	NA	193	130–200	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2010	5	NS	NA	NA	0.53	NA	0.244	0.010–2.0	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES

		Surface Water		Distribution System		Groundwater	
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
Bicarbonate (ppm)	2010	190	NA	110	NA	156	140–190
Boron (ppb)	2004	130	120–140	NA	NA	110	110–460
Calcium (ppm)	2010	18	NA	12	NA	24	18–29
Magnesium (ppm)	2010	9.4	NA	5.9	NA	18	10–19
Sodium[3] (ppm)	2010	9.3	NA	14	NA	14	10–18
Total Alkalinity (ppm)	2010	79	NA	90	NA	126	79–140
Total Hardness (as CaCO3) (ppm)	2010	83	NA	55	NA	134	89–146

[1] 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.
[2] The sample sites used were single family residences that were plumbed with copper pipes and lead solder, installed prior to 1983.
[3] New groundwater source was sampled in 2009.
[4] Water is considered moderately corrosive.

Distribution System Disinfection By-Products

Total Trihalomethanes (ppb)	MCL	2009 2nd Qtr.	2009 3rd Qtr.	2010 4th Qtr.	2010 1st Qtr.	2010 2nd Qtr.	2010 3rd Qtr.	2010 4th Qtr.	Source
Site #1	80	2.4	17.3	14.2	13	1.4	16	16	By-product of drinking water disinfection.
Site #2	80	0	5.2	14.2	14	0	15	14	
Site #3	80	5.1	18.3	13.3	14	3.6	25	24	
Site #4	80	4	19.4	14.1	16	4.7	22	27	
Site #1a (collected annually)	80	NA	0	NA	NA	NA	1.6	NA	
Quarterly Average	80	3	15	14	14	2	20	20	
Running Annual Average	80	11	10	11	11	11	12	14	

Total Haloacetic Acids (ppb)	MCL	2009 2nd Qtr.	2009 3rd Qtr.	2009 4th Qtr.	2010 1st Qtr.	2010 2nd Qtr.	2010 3rd Qtr.	2010 4th Qtr.	Source
Site #1	60	0	13.8	5.6	5.3	0	8	8.5	By-product of drinking water disinfection.
Site #2	60	0	7.3	5.7	7.5	0	7.4	7	
Site #3	60	0	11.4	5.8	3	0	6.5	7.1	
Site #4	60	2.5	11.9	6	7	0	7.6	7.6	
Quarterly Average	60	1	11	6	7	0	7	8	
Running Annual Average	60	7	8	8	6	5	4	5	

Definitions

AL (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.

micromhos: A measure of electrical conductance.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

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.

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.

Source Water Assessment

In June of 2001, the City of Ukiah completed a Source Water Assessment. This study considered the topography, type of vegetative cover, soil type, type of animal life, and climate conditions of our watershed. Combined with human-related recreation, industry, and lifestyle, several areas were considered to have influence on our raw waters. The influence was considered to be minimal and several areas of concern have been mitigated. These include the closing of the landfill, the replacement of leaking underground storage tanks, and bulk fuel containment. The City of Ukiah is continually upgrading its system and monitors for a variety of possible hazards. The City of Ukiah's water is still considered safe and reliable. The summary from that report is as follows.

Vulnerability Summary

According to the results of the vulnerability analysis, the surface water source is considered most vulnerable (vulnerability score* of 15) to the following activities not associated with any detected contaminants:

- Gas stations
- Plastic synthetic producers
- Historic gas stations
- Historic waste dumps/landfills
- Historic mining operations
- Confirmed leaking tanks
- Wastewater treatment and disposal facilities
- Managed forests
- Septic systems – high density (>1/acre)
- Chemical/petroleum processing/storage

The above list of the PCAs includes several activities that can contaminate the drinking water source by releasing deleterious chemicals. Therefore, this list corroborates the conclusion in the 2001 Update Report of Watershed Sanitary Update (page 3): "The greatest potential threat of drinking water quality is that of a spill of deleterious material (e.g., petroleum products, hazardous or toxic substances) that could enter Lake Mendocino or the Russian River. The potential threat is great because the water treatment systems used by the City of Ukiah, the RVCWD, and the MCWD were not designed to remove these types of substances."

Further, the comparison of the above list of PCAs and that of "potential contaminant sources" delineated in the 2001 Update Report (page 2) shows that some activities appear in both lists: (1) wastewater treatment and disposal facilities, (2) septic systems – high density, and (3) releases from industrial activities. The category of "releases from industrial activities" in the 2001 Update Report list encompasses some specific activities in the PCAs list, including gas stations, historic gas stations, confirmed leaking tanks, plastic synthetic producers, and chemical/petroleum processing/storage. Other activities in the 2001 Update Report list that also ranked high in the Vulnerability Score include septic systems – low density (vulnerability score of 13), grazing animals (13), non-body and body contact recreation (13), spills from traffic or railroad accidents (11), and pesticide/herbicide use in agriculture (11).

**The drinking water source is considered Vulnerable to all PCAs with a Vulnerability Score greater than or equal to 11 (California Drinking Water Source Assessment and Protection Program). The apparent discrepancies between the two lists, such as managed forests, historic mining operations, and historic waste dumps/landfills, may be attributable to the fact that surface protection zones were not established in this assessment.*