



ANNUAL
WATER
QUALITY
REPORT

WATER TESTING PERFORMED IN 2014



Presented By



2014 Executive Summary

The City of Ukiah, Public Works Department, Water Utility Division, is responsible for providing water to more than 5,000 connections. The water that we produce continues to consistently meet and exceed both State and Federal Standards for drinking water. The Water Division's ability to achieve this high standard is due to the ongoing monitoring our staff performs on the excellent sources of water available to the City of Ukiah.

The Water Division is currently in the process of redeveloping an existing groundwater well and developing a new groundwater source for our customers. This well development is in response to the drought situation of 2014 and will also benefit our rate payers by providing a much more cost-effective and reliable water source.

Throughout 2014, the Water Distribution Division made numerous repairs and upgrades to an aging distribution system. In doing this, the Distribution Division has helped to ensure a safe and sustainable means of delivering drinking water throughout the City of Ukiah. The Distribution Division's hard work and support of the Water Division continues to be instrumental in the operations exceptional drinking water standards delivered by the system.

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>.

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 Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board 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.

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 four 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 would be Millview County Water District and Willow County Water District.

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far, the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water plus the use of chlorine is probably the most significant public health advancement in human history.

How chlorination works:

- Potent Germicide Reduction in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.
- Taste and Odor Reduction of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.
- Biological Growth Elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.
- Chemical Removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.

Community Participation

Regularly scheduled Ukiah City Council meetings convene on the first and third Wednesdays 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.



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. We are 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.

QUESTIONS?

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

Source Water Assessment

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

The above list of 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 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 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.

Sampling Results

During the past year, the City of Ukiah has taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The State of California requires the City to monitor for certain substances less often 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.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Regulation (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality.

REGULATED SUBSTANCES											
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	Surface Water		Distribution System		Groundwater		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Barium (ppm)	2014	1	2	ND	NA	ND	NA	0.017 ¹	ND-0.100 ¹	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine (ppm)	2014	[4.0 (as Cl ₂)]	[4 (as Cl ₂)]	NA	NA	0.77	0.28-1.83	NA	NA	No	Drinking water disinfectant added for treatment
Fluoride (ppm)	2014	2.0	1	ND	NA	NA	NA	0.110	ND-0.150	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate [as nitrate] (ppm)	2014	45	45	ND	NA	2.4	NA	7.8	6.6-9.7	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Turbidity² (NTU)	2014	TT	NA	0.200	0.011-0.200	NA	NA	NA	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2014	TT=95% of samples <0.3 NTU	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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	PHG (MCLG)	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2013	1.3	0.3	0/31	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2013	15	0.2	0/31	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES											
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	Surface Water		Distribution System		Groundwater		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Chloride (ppm)	2014	500	NS	4.2	NA	6.2	NA	8.3	6.8-12	No	Runoff/leaching from natural deposits; seawater influence
Corrosivity (Units)	2014	Non-corrosive	NS	11	NA	11	NA	11.2	10.3-11.63	No	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Specific Conductance (micromhos)	2014	1,600	NS	210	NA	NA	NA	230	200-320	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2014	500	NS	9.8	NA	11	NA	15.4	12-32	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2014	1,000	NS	150	NA	170	NA	190	NA	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2014	5	NS	0.054	0.011-0.200	0.172	0.012-0.950	0.061	0.017-1.100	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Surface Water		Distribution System		Groundwater	
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
Bicarbonate (ppm)	2014	92	NA	120	NA	171.4	150–180
Calcium (ppm)	2014	17	NA	19	NA	26	21–30
Magnesium (ppm)	2014	9.7	NA	11	NA	15.7	13–18
Sodium (ppm)	2014	9.7	NA	15	NA	16.2	10–21
Total Alkalinity (ppm)	2014	75	NA	100	NA	141.4	120–150
Total Hardness (ppm)	2014	82	NA	93	NA	130.2	111–145

¹ Footnote for Groundwater: One groundwater source was sampled in 2013 and two others were sampled in 2012.

² 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.

Distribution System Disinfection By-Products

TOTAL TRIHALOMETHANES (PPB)	MCL	2013	2013	2013	2014	2014	2014	2014	SOURCE
		2ND QTR	3RD QTR	4TH QTR	1ST QTR	2ND QTR	3RD QTR	4TH QTR	
Site #1	80	18.0	16.0	17.0	6.8	4.2	24.2	11.9	By-product of drinking water disinfection
Site #2	80	5.6	8.5	9.6	0.0	5.2	13.3	0.0	
Site #3	80	9.0	30.0	17.0	6.5	5.6	29.0	27.8	
Site #4	80	9.4	26.0	21.0	6.0	7.4	24.4	29.8	
Quarterly Average	80	10.5	20.0	16.0	4.8	5.5	22.8	17.5	
Running Annual Average	80	12.6	12.0	13.0	12.8	11.6	12.3	12.6	
TOTAL HALOACETIC ACIDS (PPB)	MCL	2013	2013	2013	2014	2014	2014	2014	SOURCE
		2ND QTR	3RD QTR	4TH QTR	1ST QTR	2ND QTR	3RD QTR	4TH QTR	
Site #1	80	5.5	7.8	7.4	1.8	0.0	10.0	5.4	By-product of drinking water disinfection
Site #2	80	0.0	3.6	3.9	0.0	0.0	12.4	0.0	
Site #3	80	0.0	13.0	7.4	1.3	0.0	11.0	13.4	
Site #4	80	0.0	10.0	8.3	3.0	1.0	8.0	10.0	
Quarterly Average	80	1.4	9.0	7.0	1.6	0.3	10.2	7.1	
Running Annual Average	80	5.2	5.0	4.0	4.8	4.5	4.5	4.8	

Definitions

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

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).

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