2009 Annual Drinking Water Quality Report

Is my water safe?
The City of Laramie routinely monitors for constituents in your drinking water according to Federal and State laws. Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (EPA) and state drinking water health standards. The City of Laramie Water Department vigilantly safeguards its water supplies and once again we are proud to report that our system has not violated a maximum contaminant level or any other water quality standard during the previous year.

Do I need to take special precautions?
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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. EPA/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 Water Drinking Hotline (800-426-4791).

Where does my water come from?
The City of Laramie's water comes from a combination of sources. Approximately 50% of our drinking water is provided by the Big Laramie River and 50% from well fields in the Casper Aquifer. The surface water is diverted from the river through Sodergren Lake into the treatment plant and then into town. The water from the Casper Aquifer comes from three well fields which are located North, East and South of the City. All sources of water are treated with fluoride and chlorine as per Local, State and Federal regulations before entering the distribution system.

Source water assessment and its availability
Information on source water assessment and its availability as well as other aspects of the City of Laramie's water supply can be found at:
http://www.ci.laramie.wy.us/cityservices/waterutilities/index.html

Why are there contaminants in my drinking water?
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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).
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: 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, which 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, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?
You can get involved by attending city council meetings, public meetings dealing with the Casper Aquifer Protection plan and any other meetings held which deal with water safety and/or protection.

Variance and Exemptions
This section is to inform you that the City of Laramie public water system has met the requirements for reduced monitoring trihalomethane (TTHM), haloacetic acids (HAA5) and total organic carbon (TOC). These reduced monitoring requirements are due to meeting or exceeding established standards set by the EPA.

Results of Cryptosporidium monitoring
In July and September of 2009 our sampling showed 0.1 Cryptosporidium Oocysts per liter of raw untreated water sampled. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Additional Information for Lead
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. City of Laramie 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 http://www.epa.gov/safewater/lead.

Total Organic Carbon (TOC) Explanation

Since the early 1970s, TOC has been recognized as an analytic technique to measure water quality during the drinking water purification process. TOC in source waters comes from decaying natural organic matter (NOM) and from synthetic sources. Humic acid, fulvic acid, amines, and urea are types of NOM. Detergents, pesticides, fertilizers, herbicides, industrial chemicals, and chlorinated organics are examples of synthetic sources. Before source water is treated for disinfection, TOC provides an important role in quantifying the amount of NOM in the water source. In water treatment facilities,
source water is subject to reaction with chloride containing disinfectants. When the raw water is chlorinated, active chlorine compounds (Cl2, HOCl, ClO-) react with NOM to produce chlorinated disinfection byproducts (DBPs). Many researchers have determined that higher levels of NOM in source water during the disinfection process will increase the amount of carcinogens in the processed drinking water. With passage of the Safe Drinking Water Act, TOC analysis emerged as a rapid and accurate alternative to the classical but lengthy biological oxygen demand (BOD) and chemical oxygen demand (COD) tests traditionally reserved for assessing the pollution potential of wastewaters. Today, environmental agencies regulate the trace limits of DBPs in drinking water. Recently published analytical methods, such as United States Environmental Protection Agency (EPA) method 415.3, D/DBP rule, regulate the amount of NOM to prevent the formation of DBPs in finished waters.

Water Quality Data Table

The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Disinfectants & Disinfectant By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
TTHMs [Total Trihalomethanes] (ppb)	NA	80	20.98	11.25	32.8	2009	No	By-product of drinking water disinfection
Haloacetic Acids (HAA5) (ppb)	NA	60	16.17	7.63	25.6	2009	No	By-product of drinking water chlorination
Total Organic Carbon(% Removal)	NA	TT	50.2	NA		2009	No	Naturally present in the environment
Inorganic Contaminants								
Barium (ppm)	2	2	0.2	ND	0.2	2009	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Copper - source water (ppm)		MPL	0.08(MPL)	ND	0.08	2009	No	Corrosion of household plumbing systems; Erosion of natural deposits
Fluoride (ppm)	4	4	1.3	0.2	1.3	2009	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Lead - source water (ppm)		0.015	0.002(MPL)	ND	0.002	2009	No	Corrosion of household plumbing systems; Erosion of natural deposits
Nitrate [measured as Nitrogen] (ppm)	10	10	1.7	ND	1.7	2009	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (optional) (ppm)		MPL	7	2.2	7	2009	No	Erosion of natural deposits; Leaching
Microbiological Contaminants								
Turbidity (NTU)	NA	0.3	100	NA		2009	No	Soil runoff
100% of the samples were below the TT value of 0.3. A value less than 95% constitutes a TT violation. The highest single measurement was 0.215. Any measurement in excess of 1 is a violation unless otherwise approved by the								
Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	2.8	ND	2.8	2008	No	Erosion of natural deposits

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	0.21	2009	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead - action level at consumer taps (ppb)	0	15	5	2009	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
NTU	NTU: Nephelometric Turbidity Units. 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.
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	**Definition**
MCLG	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 allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection 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.
MRDL	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.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

For more information please contact:

Contact Name: Richard Elliot
Address:
PO Box C
Laramie, WY 82073
Phone: 307-721-5241
E-Mail: Relliot@Ci.Laramie.WY.US
Website: http://www.ci.laramie.wy.us/

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PUBLIC WORKS
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