

# 2014 Annual Drinking Water Quality Report

## **Is my water safe?**

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

## **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 Big Laramie River through a pipeline 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.

## **City of Laramie Water Supply Information**

Information on the City of Laramie's water supply can be found at:  
<http://cityoflaramie.org/index.aspx?NID=285>

## **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.

### **Water Conservation Tips**

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference – try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.

- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit [www.epa.gov/watersense](http://www.epa.gov/watersense) for more information.

### **Cross Connection Control Survey**

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler/ Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

### **Source Water Protection Tips**

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

### **Hardness**

Water hardness is a measure of the amount of calcium and magnesium salts in water. Calcium and magnesium enter water mainly through the weathering of rocks. The more calcium and

magnesium in water, the harder the water. Water hardness is usually expressed in milligrams per liter (mg/l) of dissolved calcium and magnesium carbonate. Hardness in Laramie's water varies between 40 and 200 parts per million depending on the source of the water and the time of year.

### **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 ( $Cl_2$ ,  $HOCl$ ,  $ClO^-$ ) 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.

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## **Water Quality Data Table**

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be

extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. 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 vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

| <u>Contaminants</u>   | <u>MCLG or MRDLG</u> | <u>MCL, TT, or MRDL</u> | <u>Your Water</u> | <u>Range</u>       |                               | <u>Sample Date</u> | <u>Violation</u>      | <u>Typical Source</u>   |
|---|----------------------|-------------------------|-------------------|--------------------|-------------------------------|--------------------|-----------------------|---|
|   |                      |                         |                   | <u>Low</u>         | <u>High</u>                   |                    |                       |   |
| <b>Disinfectants &amp; Disinfectant By-Products</b>   |                      |                         |                   |                    |                               |                    |                       |   |
| (There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants) |                      |                         |                   |                    |                               |                    |                       |   |
| Haloacetic Acids (HAA5) (ppb)   | NA                   | 60                      | 20.98             | 16.17              | 25.1                          | 2014               | No                    | By-product of drinking water chlorination   |
| Bromate (ppb)   | 0                    | 10                      | 1.8               | ND                 | 1.8                           | 2014               | No                    | By-product of drinking water disinfection   |
| Total Organic Carbon(% Removal)   | NA                   | TT                      | 52.57             | NA                 |                               | 2014               | No                    | Naturally present in the environment  |
| TTHMs [Total Trihalomethanes] (ppb)   | NA                   | 80                      | 15.51             | 7.78               | 19.23                         | 2014               | No                    | By-product of drinking water disinfection   |
| <b>Inorganic Contaminants</b>   |                      |                         |                   |                    |                               |                    |                       |   |
| Barium (ppm)  | 2                    | 2                       | 0.3               | ND                 | 0.3                           | 2014               | No                    | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits                                |
| Fluoride (ppm)  | 4                    | 4                       | 0.7               | 0.1                | 0.7                           | 2014               | No                    | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| Nitrate [measured as Nitrogen] (ppm)  | 10                   | 10                      | 1.77              | 0.3                | 2.4                           | 2014               | No                    | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits                               |
| Sodium (optional) (ppm)   |                      | MPL                     | 16                | 4.9                | 16                            | 2014               | No                    | Erosion of natural deposits; Leaching   |
| Thallium (ppb)  | 0.5                  | 2                       | 0.8               | ND                 | 0.8                           | 2014               | No                    | Discharge from electronics, glass, and Leaching from ore-processing sites; drug factories                                 |
| <b>Radioactive Contaminants</b>   |                      |                         |                   |                    |                               |                    |                       |   |
| Alpha emitters (pCi/L)  | 0                    | 15                      | 4.7               | 0.06               | 4.7                           | 2014               | No                    | Erosion of natural deposits   |
| Uranium (ug/L)  | 0                    | 30                      | 1.2               | ND                 | 1.4                           | 2014               | No                    | Erosion of natural deposits   |
| <u>Contaminants</u>   | <u>MCLG</u>          | <u>AL</u>               | <u>Your Water</u> | <u>Sample Date</u> | <u># Samples Exceeding AL</u> | <u>Exceeds AL</u>  | <u>Typical Source</u> |   |
| <b>Inorganic Contaminants</b>   |                      |                         |                   |                    |                               |                    |                       |   |

|  |     |     |       |      |   |    |  |
|--|-----|-----|-------|------|---|----|--|
| Copper - action level at consumer taps (ppm) | 1.3 | 1.3 | 0.257 | 2012 | 0 | No | Corrosion of household plumbing systems; Erosion of natural deposits |
| Lead - action level at consumer taps (ppb)   | 0   | 15  | 0.003 | 2012 | 0 | No | Corrosion of household plumbing systems; Erosion of natural deposits |

| Unit Descriptions |  |
|-------------------|--|
| Term              | Definition   |
| ug/L              | ug/L : Number of micrograms of substance in one liter of water |
| 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)       |
| 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   |

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