Craig's Water Quality Report
for the Year 2014

Esta informacion es importante. Si no la pueden leer, necesitan que alquien se la traduzca.

Craig's Water Treatment Plant (PWSID# CO 0141188) produced over 565 million gallons of drinking water in 2014. In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and the EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food & Drug Administration establishes limits for contaminants in bottled water that must provide the same protection for public health. Operators at the water plant perform thousands of tests each year to ensure that our drinking water is free of physical, chemical, and biological contaminants. Please take a few minutes to read through this material and, if you have questions, contact Mark Sollenberger, the Water and Wastewater Director, at 970-824-6340. Also, you're welcome to voice opinions at the city council meetings held on the 2nd and 4th Tuesday of the month at 7:30 P.M. at City Hall. And of course, you're always welcome to stop at the plant for answers and a tour.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of the contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or by visiting http://water.epa.gov/drink/contaminants.

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 systems disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

Craig's drinking water source is surface water that comes from the Yampa River intake. There are 27 rivers and streams that comprise the Yampa River watershed above Craig. In the event of a severe drought, the Elkhead Reservoir can be used to supplement our water source supply. The sources of drinking water (both tap water and bottled water) include river, lakes, streams, ponds, reservoirs and springs. 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. These substances 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, 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** 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 byproducts of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants,** that 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, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

The Colorado Department of Public Health and Environment has provided us with a Source Water Assessment Report for our water supply and has given our source water an overall susceptibility rating of "Moderate". You may obtain a copy of the report by visiting http://wqcdcompliance.com/ccr, the report is located under "Source Water Assessment Reports", and then "Assessment Report by County", click on **Moffat** County and select **141188; Craig City of** or by contacting Mark Sollenberger at 970-824-6340. Potential sources of contamination in our source water area come from: EPA Hazardous Waste Generators, EPA Chemical Inventory/Storage Sites, EPA Toxic Release Inventory Sites, Permitted Wastewater Discharge Sites, Aboveground, Underground and Leaking Storage Tank Sites, Solid Waste Sites, Existing/Abandoned Mine Sites, Commercial/Industrial/Transportation, High Intensity Residential, Low Intensity Residential, Urban Recreational Grasses, Row Crops, Pasture/Hay, Deciduous Forest, Evergreen Forest, Mixed Forest, Septic Systems, Oil/Gas Wells, and Road Miles.

The Source Water Assessment Report provides a screening-level evaluation of potential contamination that **could** occur. It does not mean that the contamination **has or will** occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan. Please contact Mark Sollenberger at 970-824-6340 to learn more about what you can do to help protect your drinking water source, any questions about the Drinking Water Consumer Confidence Report, or to learn more about our system.

Terms and Abbreviations

It is important to understand some terms that we use frequently at the water plant. Following are several of these terms and their definitions. Take a moment to read these terms so you are better able to understand the information in the succeeding tables.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.

Average (x-bar): The typical value. Mathematically is the sum of values divided by the number of samples.

Compliance Value (No Abbreviation): Single or calculated value used to determine if regulatory contaminant level (e.g.MCL) is met. Examples of calculated values are the 90th Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA)

Formal Enforcement Action (No Abbreviation): An escalated action taken by the State (due to the number and/or severity of violations) to bring a non-compliant water system back into compliance by a certain time, with an enforceable consequence if the schedule is not met.

Below Detectable Limit (BDL): Indicates that a contaminant was undetectable during the testing procedure.
Gross Alpha (No Abbreviation), Including RA, Excluding RN & U: This is the gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222 and uranium.
Microscopic Particulate Analysis (MPA): An analysis of surface water organisms and indicators in water. This analysis can be used to determine performance of a surface water treatment plant or to determine the existence of surface water influence on a ground water well.
Maximum Contaminant Level (MCL): 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.
Maximum Contaminant Level Goal (MCLG): 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.
Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of micrboial contaminants.
Maximum Residual Disinfectant Level Goal (MRDLG): 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.
Not Applicable (N/A): Does not apply or is not available.
Nephelometric Turbidity Unit (NTU): Nephelometric turbidity unit is a measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person.
Parts Per Million = Milligrams per Liter (ppm = mg/L): One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts Per Billion = Micrograms per Liter (ppb = ug/L): One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
Parts Per Trillion = Nanograms Per Liter (ppt = nanograms/L): one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.
Parts Per Quadrillion = Picograms Per Liter (ppq = Picograms/L): One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.
Picocuries/Liter (pCi/L): A measure of radioactivity in water.
PWSID: Public Water System Identification Number.
Running Annual Average (RAA): Average of quarterly averages. Calculated from four of "most recent quarters".
Range (R): The lowest value to the highest value.
Sample Size (n): Number or count of values (i.e. number of water samples collected)
Total Organic Carbon (TOC): A measure of the total amount of carbon in water, present as organic molecules.
Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.
Variance and Exemptions (V/E): Department permission not to meet an MCL or a treatment technique under certain conditions.
Violations (No Abbreviation): A failure to meet a Colorado Primary Drinking Water Regulation.
Waiver: State permission not to test for a contaminant. Our plant has a waiver for: Dioxin, Glyphosphate, Nitrite, Cyanide, and Asbestos.

Detected Contaminants

The City of Craig routinely monitors for contaminants in your drinking water according to Federal and State laws. The following tables show all detections found in the period of January 1 to December 31, 2014 unless otherwise noted. The State of Colorado requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Therefore, some of our data, though representative, may be more than one year old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

Note: Only detected contaminants sampled within the last 5 years appear in this report. If no tables appear in this section then no contaminants were detected in the last round of monitoring.

Lead and Copper in your drinking water

Every three years we test 20 sites throughout the city for Lead and Copper levels in the drinking water. Homes are selected that are likely to show high levels of these elements, if present in the drinking water. To be in compliance, 90% of these homes must have Lead and Copper Action Levels below 15 ppb and 1300 ppb respectively. 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 Craig Water Plant 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 at (1-800-426-4791) or at http://www.epa.gov/safewater/lead. **We tested our 20 sites for Lead and Copper in 2014 and the 90th percentile level for Lead was 3.6 ppb, and for Copper it was 90 ppb, both well below the Action Level established by the EPA. None of the sites exceeded the Action Level for Lead or Copper. We will retest for Lead and Copper in 2017.**

The Craig Water Plant tests for SOCs every three years. We sampled for VOCs annually.

For the most part, the following chemicals enter the source water via storm and/or spring runoff, residential, industrial, and agricultural uses.

Synthetic Organic Chemicals (SOCs) - Regulated

SOCs are man-made compounds used in industrial applications. They include: solvents, paints, plastics, dyes, and food additives.

Volatile Organic Chemicals (VOCs) - Regulated

The sources of these chemicals include: pesticides, herbicides, and industrial solvents. A number of these are suspected carcinogens.

State certified labs **tested twice for SOCs** at our water plant in 2012. **None** of these regulated contaminants were **detected** in our drinking water. We tested for VOCs in 2014 and none were found. We will sample for SOCs again in 2015. A complete list of these chemicals and the results are available at the plant.

We check for these chemicals annually. We submitted samples for these contaminants on 07/07/2014

Inorganic Chemicals - Regulated

These are metals and salts, which can be naturally occurring or can result from urban storm water runoff, industrial discharges, oil and gas production, mining, and farming. The **following chemicals were below the detectable limit** in your drinking water in the 2014 analysis: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Mercury, Nickel, Selenium, Nitrate/Nitrite, and Thallium.

The following chemicals were found at the stated level in the year indicated: **(Sample Date)**

Barium was detected at a level of 12 ppb (MCL is 2000 ppb) (MCLG is 2000 ppb) (07-07-2014)
Drinking water containing barium in excess of the MCL over many years may increase blood pressure.

Fluoride was detected at a level of 0.68 ppm (MCL is 4.0 ppm) (MCLG is 4.0 ppm) (07-07-2014)
Drinking water containing fluoride in excess of MCL over many years may cause bone disease, including pain or tenderness in bone. At half the MCL (2.0 ppm) or more, mottling of the teeth may occur in children.

Nitrate/Nitrite was detected at a level of 1.1 ppm (MCL is 10.0 ppm) (MCLG is 10.0 ppm) (03-14-2012)
Infants below the age of 6 months who drink water containing Nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

We test for Turbidity on a continuous basis using an in-line turbidimeter.

Turbidity - This is one of the most important tests that we perform, so important that we monitor for turbidity on a continuous basis. Turbidity is an indicator of the clarity of the water, and comes predominantly from soil run-off. The turbidity leaving the plant must be below or equal to 0.3 NTUs in at least 95% of the samples per month. **At no time in 2014 did the water plant violate the state regulations for turbidity. The city maintained 100% compliancy with this treatment technique requirement throughout 2014.**

Test	Unit	TT Requirement	Results
Turbidity	NTU	TT ≤0.3 in 95% of samples	% below MCL = 100%

The highest turbidity level recorded during 2014 was in August and equaled 0.109 NTU. The average daily turbidity for our plant in the year 2014 was 0.047 NTU. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

In July of 2000, the Craig Water Plant became certified to perform Total Coliform tests. We renewed this certification in 2014. This allows us to obtain a faster turnaround time on our samples, and to perform additional tests when needed. We test 10 different sites, every month, throughout the city for bacteria (Total Coliform bacteria). We also preformed an MPA to test our water plant for parasite removal (Giardia and Cryptosporidium). We submitted one sample on 08/18/2014. No Giardia or Cryptosporidium were found in the finished drinking water.

Micro-organisms - Bacteria and parasites in the water can cause severe illness and even death. For this reason we closely monitor for these organisms. The combination of treatment process, filtration in particular, and disinfection with chlorine, ensures that your drinking water is free of these biological entities. Sources of these contaminants include: sewage treatment plants, septic systems, livestock operations, and wildlife.

Test	MCL	Result
Total Coliforms	≤1 positive sample/ month	Absent
Gardia & Cryptosporidium	Treatment Technology	None Detected

We had no positive samples for Total Coliforms in the year 2014.

We collect samples for the following analysis quarterly.
Total Trihalomethanes (TTHMs) Haloacetic Acids (HAAs) - Regulated VOCs

These may be formed as a byproduct of drinking water disinfection when chlorination reacts with natural organic material in the water. Some THMs are thought to be cancer causing agents at certain levels. TTHMs are the sum of: bromodichloromethane, dibromochloromethane, bromoform, and chloroform. HAAs we test for include: Mono, di, and trichloroacetic acid, mono and dibromoacetic acid. Regulatory compliance is based off of the RAA of four consecutive quarters.

Test	Unit	MCL	Average	Range	Highest RAA
TTHMs	ppb	80 ppb	RAA = 56.04 ppb	32.6 - 88.2 ppb	56.04 ppb
HAAs	ppb	60 ppb	RAA = 29.64 ppb	17.3 - 47.9 ppb	34.07 ppb

Some people who drink water containing THMs and HAAs in excess of the MCL over many years may have an increased risk of getting cancer.

We test for Total Organic Carbon (TOC) once every month. TOC is naturally present in the environment. Compliance is based on percent removal ratio between the source water TOC, and the treated water TOC.

Test	Unit	MCL	Average of Individual Ratio Samples	Range of Individual Ratio Samples
TOC	Removal Ratio	< 1.0 (TT)	RAA 1.66	1.04-2.30

TOC has no health effects. We use enhanced treatment to remove the required amount of natural organic material and/or we demonstrated compliance with alternative criteria. However, these chemicals provide a medium for the formation of disinfection byproducts, which include Trihalomethanes (THMs) and Haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, nervous system effects, or increased risk of getting cancer.

We use chlorine to disinfect the filtered water, killing bacteria and viruses. The free chlorine level is continuously monitored using an in-line analyzer. We also test 10 sites every month throughout the city for free chlorine and total chlorine (free chlorine and chloramine compounds). The water leaving the plant usually has an average free chlorine concentration of 1.30 – 1.50 mg/L. Levels in the city for 2014 ranged from 0.02 - 1.23 mg/L.

We tested for Alpha Emitters, Beta Emitters, Radium 228, Radium 226 and Uranium in 2013. We will test again in 2022.

Radioactive Contaminants

Sources of Radioactive contaminants include nature, nuclear power plants, processing plants, and uranium mines. These contaminants have been proven to cause cancer. The following levels were detected in the most recent sample:

Gross Alpha Emitters (Natural Radioactivity):	**Average 1.3 pCi/L (MCL is 15 pCi/L)**	**Range 1.3 - 1.3 pCi/L (MCLG is 0 pCi/L)**
Radium 228/226 Combined (Natural Radioactivity):	**Average 0.6 pCi/L (MCL is 5 pCi/L)**	**Range 0.6 - 0.6 pCi/L (MCLG is 0 pCi/L)**

Drinking water containing Radium 228/226 in excess of MCL over many years may result in an increased risk of cancer.

The Water Plant tests for other minerals and characteristics of your drinking water, such as: pH, alkalinity, hardness, conductivity, TDS, iron, and salinity. Results for these tests are available at the water plant.

Secondary Contaminants/ Other Monitoring	Sample Date	Peak Value	Average	Range	Unit	Secondary Standard
Total Dissolved Solids	10/31/2013	119.0	119.0	119 – 119	ppm	500
Sodium	07/07/2014	13.2	13.2	13.2	mg/l	10,000

Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin or tooth

The City of Craig Water Treatment Plant had no Violations or Formal Enforcement Actions in 2014.

A copy of this report is available to all interested parties and can be picked up at the water plant and at City Hall or visit our web site at www.ci.craig.co.us. Always feel free to call us at 824-6340 with questions and/or comments. State and federal drinking water regulations are ever-changing, and the operators at the Craig Water Plant are alert to these changes. We are watchful for new technologies that will improve the quality of your drinking water and enable us to exceed the drinking water standards.