



# CANNON AIR FORCE BASE

## 2014 WATER QUALITY REPORT

# A MESSAGE FROM COL MAITRE ABOUT THIS REPORT

An important part of our day-to-day operations is providing high-quality, safe, reliable drinking water to our Air Commandos, their families, and our guests. This report is our way of showing you the results of these efforts.

This report summarizes the results of sampling by Bioenvironmental Engineering (BE) and the on-going operations by Civil Engineering. All of the Cannon AFB water samples are collected on base and sent to a state-certified drinking water laboratory for analysis.

In 2014, the water that Cannon AFB provided to the base met or surpassed all but one federal and state primary drinking water quality regulations. Two routine bacteriological water samples submitted for July 2014 tested positive for total coliform. This led to the violation of 40 Code of Federal Regulations (CFR) 141.63. In accordance with 40 CFR 141.63 (a)(2), ‘for a system which collects fewer than 40 samples/month, if no more than one sample collected during a month is total coliform-positive the system is in compliance with the Maximum Contaminant Level (MCL) for total coliforms.’ However, due to the two positive samples, the 27 SOW was required to give notice to the public within 30 days of notification of violation. The SOW received the notice of violation on 17 July, and the public notice was distributed on 23 July. BE took repeat samples and neither total nor fecal coliform was detected confirming the safety of the water .

This track record of sustained achievement is a testimony to the hard work and dedication of the Cannon AFB personnel who provide you and your families with high quality water year in and year out.

Access to clean, safe water is important to all of us here at Cannon AFB. We take pride in ensuring that we take care of you and your water supply.

If you have any questions about this report, please contact BE at 575-784-4063.

Sincerely,

Col Benjamin R. Maitre  
27 SOW Commander

## Why am I receiving this report?

We’re committed to ensuring the highest quality and safety of our water. That’s why you’re receiving this annual water quality report from us. We hope it will help you better understand Cannon AFB’s drinking water system, what we’re doing to protect it, and how you can help.

## What will I find in this report?

This report complies with state and U.S. Environmental Protection Agency (EPA) regulations. In it you will find information on:

- **Where your water comes from**
- **Protecting your water**
- **What is in your water**

During the last five years, samples were taken to test for 83 various constituents at numerous sampling points in the water system. Bioenvironmental Engineering compiled the information in this report from the drinking water results received from state labs certified by the New Mexico Environment Department (NMED).

## Read this report – and share it!

The first step in understanding our community’s water is to read this report. It’s also important to share your knowledge with others - especially those who may not have received this report directly but frequent Cannon Air Force Base.

Questions? **Call Bioenvironmental Engineering: 575-784-4063**

# ABOUT YOUR WATER

## Where does my water come from?

- Cannon AFB uses groundwater as the source for all potable water supplied to the installation and Chavez housing areas.
- Water is extracted from the Ogallala Aquifer using seven wells located on base property.
- This water is disinfected with chlorine and delivered to the consumer through a distribution system consisting of a network of water towers and underground pipes.
- Based on the size of our system and the number of consumers, the base wells are registered with the NM Environmental Department as community water sources.

## Groundwater wells

What's the Ogallala Aquifer?

- Also referred to as the High Plains Aquifer.
- Spread across portions of New Mexico, Texas, Oklahoma, Colorado, Nebraska, South Dakota and Wyoming.
- Approximately 1.5% of the aquifer's storage resides in New Mexico.

How do we protect the groundwater?

- We protect source water by ensuring proper well construction, system operations, and additional environmental management practices.

How can you help?

- Take hazardous household chemicals to hazardous material collection centers and limit your pesticide and fertilizer use.

## Source Water Assessment

The Cannon AFB water system is well maintained and operated by the Civil Engineer Squadron. The aquifer is protected from potential sources of contamination based on well construction, hydrogeologic settings, and system operations and management.

The susceptibility rank of a water system is based upon the number of potential sources of contamination and how well source water is protected. Cannon AFB's susceptibility rank is **Moderate**. If you would like to obtain a copy of the Source Water Assessment report or discuss its findings, please contact Bioenvironmental Engineering at 575-784-4063.

## How can I get involved?

- To obtain information on the operation and maintenance of the Cannon AFB water system, please contact the Water Treatment Plant at 575-784-6634.
- **Tips for everyday pollution prevention**
  - Use fertilizers and pesticides sparingly and as directed by the manufacturer.
  - Pick up after your pet and do not dispose of any waste in washes, canals or riverbeds.
  - Always use a nozzle when using your garden hose around the home. Do not let the water free flow.
  - Maintain vehicles, machinery and equipment to be free of leaks.
  - Sweep up dirt and debris, rather than using a hose.
  - Minimize your purchase and use of hazardous products. Dispose of unused quantities properly.

# WHAT YOU CAN EXPECT TO FIND IN YOUR WATER

## Common sources of drinking 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 can acquire naturally occurring minerals. In some cases it can also acquire radioactive material and substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may contain small amounts of some compounds. The presence of these compounds does not necessarily indicate that the water poses a health risk. More information about specific compounds and potential health effects can be obtained by calling the **EPA's Safe Drinking Water Hotline at 1-800-426-4791**.

To ensure that tap water is safe to drink, the EPA prescribes regulations limiting the amount of certain substances in water provided by public water systems. To ensure bottled water is safe to drink, U.S. Food and Drug Administration regulations establish limits for substances in bottled water.

## Special 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), and the elderly and infants may be particularly at risk. These people should seek advice from their healthcare providers. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate ways to lessen the risk of infection by *Cryptosporidium* and other microbial compounds are available from the **EPA's Safe Drinking Water Hotline at 1-800-426-4791**.

## Substances that may be present in source water

**Microbial Substances**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations or wildlife.

**Inorganic Compounds**, such as salts and metals, which can be naturally occurring or may 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 Compounds**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, may also come from gas stations, urban stormwater runoff and septic systems.

**Radioactive Substances**, which can be naturally occurring or may be the result of oil and gas production and mining activities.



# WHAT YOU CAN EXPECT TO FIND IN YOUR WATER

## Elevated Fluoride Levels Detected

This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children who drink water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). *The drinking water provided by Cannon AFB has a natural average fluoride concentration of 2.0 to 2.1 mg/L.*

Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine years of age should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4 mg/L of fluoride (the EPA's drinking water standard) can increase your risk of developing bone disease. Cannon's drinking water does not contain more than 4 mg/L of fluoride, but we are required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/L because of the cosmetic dental problem.

Some home water treatment units are also available to remove fluoride from drinking water. **Cannon AFB provides two low fluoride taps located outside the Water Treatment Plant, Bldg 336 (pictured to the right) and one at the Thrift Shop, Bldg 76, near the Base Exchange.** In addition, both the Cannon Child Development Center (CDC) and the Ranchvale CDC are equipped with Reverse Osmosis Purification Units that supply drinking water for the facility. Please share this information with people who drink this water, especially those who may not have received this notice directly. You can do this by posting this notice in a public place or distributing copies by hand or mail.

## 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. 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 **EPA's Safe Drinking Water Hotline** or at <http://www.epa.gov/safewater/lead>.



# DEFINITION OF TERMS

**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.

**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.

**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.

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

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

**NA:** Not Applicable.

**ND:** Substance not detected above laboratory detection limits.

**pCi/L (Picocuries per Liter):** Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).

**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).

**TTHM (Total Trihalomethanes):** Consist of Chloroform, Bromoform, Bromodichloromethane and Dibromochloromethane.

**HAA5 (Haloacetic Acids):** Consist of Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monobromoacetic Acid and Dibromoacetic Acid.

**SMCL (Secondary Maximum Contaminant Level):** Non-enforceable guidelines regulating contaminants that may cause cosmetic effects or aesthetic effects in drinking water.

**MNR:** Monitored, not regulated.

**MPL:** State assigned maximum permissible level.



# WHAT IS IN YOUR WATER

## How to read your water quality table

Below, you'll see an analysis of your drinking water.

*Here's how to read this table:*

Start here and read across.      2014 or year prior.      The goal level for that substance (may be lower than allowed).      Highest level of substance allowed.      Highest amount that was found.      Highest and lowest amounts found.      "Yes" means the amount found is below EPA requirements.      Where substance usually originates.

Substance (units)	Year Sampled	MCLG or MRDLG	MCL, TT, or MRDL	Highest Amount Detected	Range		Compliance Achieved	Typical Sources
					Low	High		



### Your water quality table

The water quality table on the next page is a combination of analysis results compiled from Bioenvironmental Engineering and includes results from laboratories certified in drinking water testing by the State of New Mexico. The table shows what substances were detected in your drinking water during 2014 or the last sampling period. The EPA or the NMED requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.



# WHAT IS IN YOUR WATER

## Regulated Substances

Substance (units)	Year Sampled	MCLG or MRDLG	MCL, TT, or MRDL	Highest Amount Detected	Range		Compliance Achieved	Typical Sources
					Low	High		
<b>Disinfectants &amp; Disinfection By-Products</b>								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.)								
TTHMs (ppb)	2014	NA	80	9.6	9.6	9.6	Yes	By-product of drinking water disinfection
HAA5 (ppb)	2014	NA	60	1.2	1.2	1.2	Yes	By-product of drinking water chlorination
Chlorine Residual (ppm)	2014	4	4	0.54 <sup>1</sup>	0.13	1.2	Yes	Water additive used to control microbes
<b>Microbiological Contaminants</b>								
Total Coliform Bacteria	2014	0	1 <sup>2</sup>	2	0	2	No <sup>3</sup>	Naturally present in the environment
Fecal coliform and E.coli	2014	0	0	1	0	1	Yes	Human and animal fecal waste
<sup>1</sup> Chlorine residual is reported by using a running annual average of the monthly samples. <sup>2</sup> MCL for systems that collect < 40 samples/month is 1 positive monthly sample. A violation occurs when a routine sample and a repeat sample, in any given month, are total coliform positive, and one is also fecal coliform or E. coli positive. <sup>3</sup> Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems. We routinely monitor for the presence of drinking water contaminants. One routine sample submitted for the month of July 2014 showed the presence of total coliform bacteria and a second routine sample submitted in July 2014 showed the presence of both total coliform and E. coli bacteria. The standard is that no more than one sample per month may show the presence of bacteria. The test results for all subsequent water samples at Cannon AFB were negative for both total coliform and E. coli bacteria.								

# WHAT IS IN YOUR WATER

## Regulated Substances

Substance (units)	Year Sampled	MCLG or MRDLG	MCL, TT, or MRDL	Highest Amount Detected	Range		Compliance Achieved	Typical Sources
					Low	High		
<b>Inorganic Contaminants</b>								
Arsenic (ppb)	2013	0	10	3.2	2.9	3.2	Yes	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	2013	2	2	0.042	0.035	0.042	Yes	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (total) (ppb)	2013	100	100	1.6	ND	1.6	Yes	Erosion of natural deposits; discharge from steel and pulp mills
Fluoride (ppm)	2013	4	4	2.1	2.0	2.1	Yes*	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen) (ppm)	2014	10	10	3.2	1.8	3.2	Yes	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Selenium (ppb)	2013	50	50	9.1	7.1	9.1	Yes	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Sodium (optional) (ppm)	2011-2013	NA	MPL	74	43	74	N/A	Erosion of natural deposits
<b>Radioactive Substances</b>								
Alpha emitters (pCi/L)	2010	0	15	6.0	3.3	6.0	Yes	Erosion of natural deposits
Radium (combined 226/228) (pCi/L)	2010	0	5	0.76	0.26	0.76	Yes	Erosion of natural deposits
Uranium (µg/L)	2010	0	30	6.7	5.8	6.7	Yes	Erosion of natural deposits
Beta/photon emitters (pCi/L)	2010	0	50	7.8	6.9	7.8	Yes	Decay of natural and man-made deposits

\*Compliant with the MCL for Fluoride; however, exceeds the Secondary MCL (SMCL) of 2.0 ppm.

# WHAT IS IN YOUR WATER

## Regulated Substances continued

Substance (units)	Year Sampled	MCLG or MRDLG	MCL, TT, or MRDL	Highest Amount Detected	Range		Compliance Achieved	Typical Sources
					Low	High		
<b>Additional Substance*</b>								
Perchlorate (ppb)	2014	NA	NA	2.6	1.8	2.6	MNR	Rocket propellants; fireworks; munitions; flares; blasting agents
* In an effort to ensure the safest water possible, Cannon AFB monitors some substances not required by Federal regulations. Perchlorate is currently not regulated by the EPA; however the EPA has stated that "pregnant women and their fetuses, neonates, infants (breast-fed and bottle-fed) and young children have been identified as life stages of concern for adverse effects due to perchlorate."								

## Tap Water Samples: Lead and Copper Results

Substance (units)	Year Sampled	MCLG	Action Level (AL)	90 <sup>th</sup> Percentile	# of Samples Taken	# of Samples above AL	Compliance Achieved	Typical Sources
Copper - action level at consumer taps (ppm)	2013	1.3	1.3	0.18	24	0	Yes	Corrosion of household plumbing systems; erosion of natural deposits
Lead - action level at consumer taps (ppb)	2013	0	15	<1.0	24	0	Yes	Corrosion of household plumbing systems; erosion of natural deposits

# IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

## Bacteriological Analysis Results

To obtain copies of any of 2014's monthly bacteriological analysis results of the Cannon AFB water system, please contact Bioenvironmental Engineering at 575-784-4063.

## For More Information

If you have any questions about this report or your drinking water, please contact:

Bioenvironmental Engineering  
208 West D. L. Ingram Ave.  
Cannon AFB NM 88103  
Phone Number: 575-784-4063  
Fax Number: 575-784-6983

