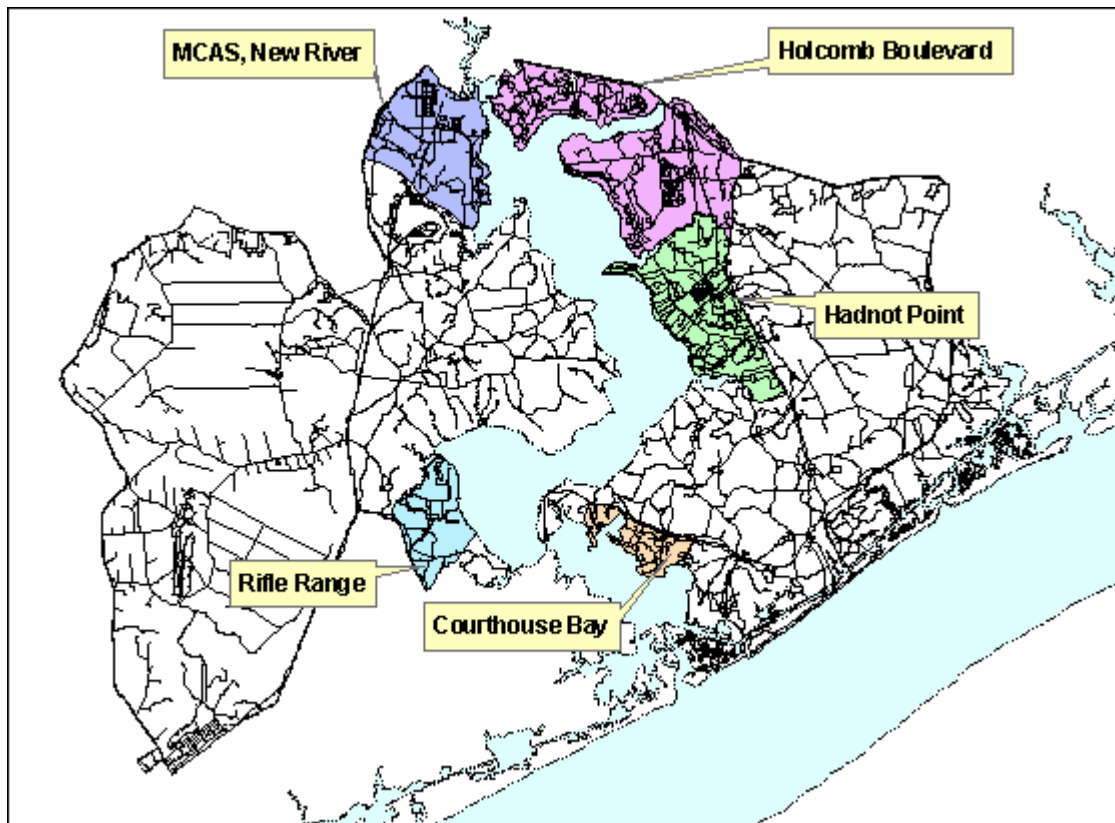


**2006 Water Quality Report for Rifle Range Water Treatment System
(PWS ID: 04-67-046)**



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2006 Water Quality Report for Rifle Range Water Treatment System

Introduction

Marine Corps Base (MCB), Camp Lejeune is committed to providing you with drinking water that is safe and reliable. We believe that providing you with accurate information about your water is the best way to assure you that your water is safe. This 2006 Water Quality Report for Rifle Range Water Treatment System is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information, because informed customers are our best allies.

The Rifle Range water system exceeded the Maximum Contaminant Level (MCL) for Total Trihalomethanes (TTHMs) in May, July and October 2006. These were all exceedances of a four quarter running average. Water from the Rifle Range System is purchased from the Onslow Water and Sewer Authority (ONWASA). ONWASA has recently installed Granular Activated Carbon (GAC) filters that will assist in reducing TTHM levels. The Rifle Range Water Treatment System met all other U.S. Environmental Protection Agency (EPA) and State drinking water health standards in 2006.

The Onslow County Water System Consumer Confidence Report can be viewed at <http://www.onwasa.com>.

What EPA Wants You to Know

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 Safe Drinking Water Hotline (800-426-4791).

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/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the 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. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which 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 storm water 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 storm water 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 storm water 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 which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

When You Turn on Your Tap, Consider the Source

The MCB, Camp Lejeune Rifle Range Water System is supplied with drinking water from Onslow County. Onslow County obtains raw water from the Black Creek and Castle Hayne groundwater aquifers. Onslow County maintains and operates a series of

groundwater pumps that are used to withdraw raw water from these aquifers and transfer the raw water to Onslow County's Water Treatment Plant. At the treatment plant, licensed operators are responsible for using state-of-the-art equipment to remove contaminants from the water. As the water is pumped from the water treatment plant, chlorine is added to protect against microbial contamination. This treated water passes through the Onslow County water distribution system and then to the MCB, Camp Lejeune Rifle Range Water System.

Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate, or Lower.

The sources for Rifle Range Water Treatment System are the same as the sources for Onslow County Water Treatment System. The relative susceptibility rating of each source for Onslow County Water Treatment System was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area.). The assessment findings are summarized in the table below:

Source Name	Susceptibility Rating	SWAP Report Date
Well #1	Lower	March 15, 2005
Well #2	Lower	March 15, 2005
Well #4	Lower	March 15, 2005
Well #5	Moderate	March 15, 2005
Well #6	Lower	March 15, 2005
Well #7	Lower	March 15, 2005
Well #8	Lower	March 15, 2005
Well #9	Moderate	March 15, 2005
Well #10	Moderate	March 15, 2005
Well #11	Lower	March 15, 2005
Well #12	Lower	March 15, 2005
Dixon Well #1	Lower	March 15, 2005
Dixon Well #2	Lower	March 15, 2005
Dixon Well #3	Lower	March 15, 2005
Hubert Well #1	Moderate	March 15, 2005
Hubert Well #2	Lower	March 15, 2005
Hubert Well #3	Moderate	March 15, 2005
Hubert Well #4	Moderate	March 15, 2005
Well #13	Lower	March 15, 2005
Well #14	Lower	March 15, 2005
Dixon Well #5	Lower	March 15, 2005

The complete SWAP Assessment report for Rifle Range Water Treatment System may be viewed on the Web at: <http://www.deh.enr.state.nc.us/pws/swap> Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to swap@ncmail.net. Please indicate your system name, PWSID, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-715-2633.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the systems’ potential to become contaminated by PCSs in the assessment area.

Explosive Constituents

As part of our commitment to ensure that we are providing the safest, most reliable drinking water possible to our Base population, Marine Corps Base (MCB), Camp Lejeune began monitoring drinking water for compounds found in explosives, (nitroaromatics, nitramines, nitrate esters) and perchlorate, in well water and treated water in 2004. These compounds, commonly known as “munitions constituents” are used in the manufacture of explosives or are the breakdown products of compounds used in explosives.

Even though there are no current regulations requiring this particular sampling, MCB, Camp Lejeune continues to sample our drinking water for these compounds on a monthly basis.

The June 2006 sampling event detected one munitions constituent, Nitrobenzene, at the Rifle Range Water System. This detection was below the lifetime Health Advisory guidance level established by the U.S. Environmental Protection Agency. This means that a lifetime of daily exposure to this compound at the level detected would not be expected to cause adverse health effects. Routine monthly sampling through the remainder of 2006 did not detect any explosive constituents at the Rifle Range Water System.

Violations that Your Water System Received for the Report Year

The Rifle Range Water System exceeded the Maximum Contaminant Level (MCL) for Total Trihalomethanes (TTHMs) in May, July and October 2007. These were all exceedances of a four quarter running average. All residents in the affected area were notified in accordance with State and Federal regulations.

The United States Environmental Protection Agency (EPA) sets drinking water standards and requires the disinfection of drinking water. However, when used in the treatment of drinking water, disinfectants react with naturally-occurring organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA has determined that a number of DBPs are a health concern at certain levels of exposure. Certain DBPs, including some Trihalomethanes (THMs) and some haloacetic acids (HAAs), have been shown to cause cancer in laboratory animals. Other DBPs have been shown to affect the liver and the nervous system, and cause reproductive or developmental effects in laboratory animals. Exposure to certain DBPs may produce similar effects in people. EPA has set standards to limit exposure to THMs, HAAs, and other DBPs.

Important Drinking Water Definitions:

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

Contaminant: Any natural or man-made physical, chemical, biological, or radiological substance or matter in water, which is at a level that may have an adverse effect on public health, and which is known or anticipated to occur in public water systems.

Coliform: A group of bacteria commonly found in the environment. They are an indicator of potential contamination of water. Adequate and appropriate disinfection effectively destroys coliform bacteria.

Disinfection: A process that effectively destroys coliform bacteria.

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.

MFL: Million fibers per liter. Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

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: Maximum residual disinfectant level: There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

N/A: Not-applicable: Information not applicable/not required for that particular water system or for that particular rule.

ND: Non-detects: Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

Nitrates: A dissolved form of nitrogen found in fertilizers and sewage by-products that may leach into groundwater and other water sources. Nitrates may also occur naturally in some waters.

NTU: (Nephelometric turbidity unit) A measure of the clarity of water.

Pathogens: (Disease-causing pathogens, waterborne pathogens) A pathogen is a bacterium, virus, or parasite that causes or is capable of causing disease. Pathogens may contaminate water and cause waterborne disease.

pCi/L: (picocuries per liter) A measurement of radiation released by a set amount of a certain compound.

pH: A measure of the acidity or alkalinity of water.

ppb, ppm: (Part per billion, part per million) Measurements of the amount of contaminant per unit of water. A part per million is like one cent in \$10,000 and a part per billion is like one cent in \$10,000,000.

THM: (Trihalomethanes) Four separate compounds (chloroform, dichlorobromomethane, dibromochloromethane, and bromoform) that form as a result of disinfection.

Extra note: MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

2006 - Water Quality Data Table - Rifle Range (PWSID: 04-67-046)

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2006.** The EPA or the State 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. Although it is not required, MCB, Camp Lejeune samples finished water for Volatile Organic Compounds (VOCs) on a monthly basis. Other data depicted below, though representative of the water quality, is more than one year old.

Inorganic Contaminants

Contaminant(s)	Your Water	Unit	MCLG	MCL	Range		Sample Date	Violation	Likely Source of Contamination
					Low	High			
Asbestos	ND	MFL	7	7	N/A	N/A	2003*	No	Decay of asbestos cement water mains; Erosion of natural deposits
Fluoride	0.8	ppm	4	4	N/A	N/A	2006**	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate	ND	ppm	10	10	N/A	N/A	2006	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

* Sampling for Asbestos occurs every 9 years.

** Sampling for Fluoride occurs every 3 years.

Disinfection Byproducts Contaminants

Contaminant(s)	Your Water	Unit	MCLG	MCL	Range		Sample Date	Violation**	Likely Source of Contamination
					Low	High			
Total Trihalomethanes* [TTHMs]	82.9	ppb	N/A	80	58.8	109.3	2006	Yes	By-product of drinking water disinfection
Haloacetic Acids [HAA5]	42.6	ppb	N/A	60	35.8	53.3	2006	No	By-product of drinking water disinfection

* Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, and central nervous system, or may have an increased risk of getting cancer.

** According to the EPA standards, the MCL is exceeded if the concentration of TTHMs exceeds 80 ppb in a drinking water system (based on a four-quarter running average). Therefore, individual quarterly samples may exceed the MCL if the running average remains under this limit. **The Rifle Range System exceeded the running average MCL for TTHMs in the 2nd, 3rd, and 4th quarters of 2006.** ONWASA will soon be activating Granular Activated Carbon (GAC) filters that will assist in reducing TTHM levels. In addition, Camp Lejeune will continue to flush the Rifle Range distribution system in an effort to control TTHM formation.

Lead and Copper Contaminants

Contaminant(s)	Your Water	Unit	MCLG	MCL	# of Samples > AL	Sample Date	Violation	Likely Source of Contamination
Copper (90th percentile)	0.012	ppm	1.3	**AL=1.3	1	2006	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead* (90th percentile)	12	ppb	0	**AL=15	1	2006	No	Corrosion of household plumbing systems; Erosion of natural deposits

* Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 sec to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

** AL - Action Level

Radioactive Contaminants

Contaminant(s)	Your Water	Unit	MCLG	MCL	Sample Date*	Violation	Likely Source of Contamination
Gross Alpha	ND	pCi/L	0	15	2006	No	Decay of natural and man-made deposits
Gross Beta	6.18	pCi/L	0	50	2006	No	Decay of natural and man-made deposits

* Starting in 2006, sampling for radiologicals will occur yearly. Prior to 2006, sampling occurred every 3 years.

2006 - Water Quality Data Table - Rifle Range (PWSID: 04-67-046) (Continued)

Volatil Organic Contaminants

Range

Contaminant(s)	Unit	Sample Date	Low	High	Violation
Bromodichloromethane	ppb	2006	ND	12.0	No
Bromoform	ppb	2006	ND	0.50	No
Chlorodibromomethane	ppb	2006	ND	1.74	No
Chloroform	ppb	2006	38.4	73.8	No

Explosive Constituents

Contaminant(s)	Your Water	Unit	MCL	Sample Date	Violation	Likely Source of Contamination
Nitrobenzene	0.20	ppb	N/A	2006	No	Used in the manufacture of explosives

Units Description:

NA: Not Applicable

MFL: million fibers per liter

ppb: parts per billion, or micrograms per liter (ug/L)

ND: Not detected

ppm: parts per million, or milligrams per liter (mg/L)

Potential Health Effects:

Asbestos Increased risk of developing benign intestinal polyps

Fluoride Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

HAA5 Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Lead Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

TTHM Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.