2010 Water Quality Report

Annual Consumer Confidence Report on the Quality of Drinking Water at Tinker AFB for the Year 2009
Tinker Air Force Base Water System ID Number OK2005508

The following report contains information regarding drinking water sources located within the confines of Tinker Air Force Base. A copy of this report is printed in the Tinker Take Off for distribution to base residents and employees. It can also be found on the Bio-Environmental Web site, listed at the end of this report.

This report does not contain or reflect any drinking water quality concerns located in the communities surrounding Tinker. For information regarding drinking water quality in communities adjacent to Tinker, call the Oklahoma Department of Environmental Quality at 702-8100.

Tinker's water is safe and meets federal and state requirements. This year's Annual Water Quality Consumer Confidence Report is designed to inform you about the quality of water on base, to advance your understanding of drinking water and heighten awareness of the need to protect our precious water resource. Tinker issues this annual report to meet requirements set under the "Consumer Confidence Reporting Rule" of the Safe Drinking Water Act. The information in this report is based on water testing results conducted in 2009.

Sources of water

The Tinker water system is primarily supplied by a system of wells drawing from the Garber-Wellington aquifer. Tinker can also use the Oklahoma City Stanley Draper water system as a secondary source of water. These connections are occasionally opened in the summer and during peak demand periods. The water supplied by Oklahoma City is produced at the Lake Stanley Draper Drinking Water Plant, where it is treated to meet Safe Drinking Water Act standards. A source water protection plan is available from the Bio-Environmental Engineering office that shows the vulnerability of the system as Low. The plan also provides information such as potential sources of contamination.

The Tinker Family Housing Purchase Water System purchases water from the Tinker Bio-Env Eng Water System and provides safe drinking water to your homes. The attached report from the Tinker Bio-Env Eng Water System shows the quality of your water. Tinker Family Housing is required to test for bacteria, lead, copper and disinfection by-products, in addition to those tested by Tinker AFB Bio-Env Eng. None of these contaminants were detected in 2009.

Definitions

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. MCLs are identified in the Safe Drinking Water Act.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water, which there is no known or expected risk to health. MCLGs include a margin of safety. MCLGs are identified in the Safe Drinking Water Act.

mrem: Milliroentgens-equivalent man; a measure of radioactivity.

N/D: Not detected.

N/A: Not applicable.

ppm: Parts per million; a unit of measurement equivalent to a single penny in $10,000 or 1:1,000,000.

ppb: Parts per billion; a unit of measurement equivalent to a single penny in $10,000,000 or 1:1,000,000,000.

pCi/L: Picocuries per liter; a measure of radioactivity in water.

NTU: Nepholometric Turbidity Units; the unit used to measure water turbidity or clarity.

MG/L: Milligram per liter = 1 ppm for water.

Variances and exemptions: State or EPA permission not to meet a MCL or treatment technique under certain conditions.

TSS: Tinker Support System

EPA: Environmental Protection Agency

Contamination concerns

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.
- *Organic contaminants,* including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can come from gas stations, urban storm water runoff and septic systems.
- *Radioactive materials,* which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure tap water is safe to drink, the EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health. 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 Safe Drinking Water Hotline at 800-426-4791.

Bioenvironmental Engineering, Environmental Management Division and TSS Water Utility personnel make every effort to ensure the delivery of clean, safe water through a variety of programs, including annual fire hydrant flushing, backflow prevention, water quality monitoring, water treatment and wellhead protection.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those 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 and Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

Monitoring of your drinking water

Tinker's water system uses only EPA-approved laboratory methods to analyze drinking water. Bio-Environmental Engineering personnel routinely take water samples from the distribution system and residents' taps. Samples are then taken to an accredited laboratory where full spectrum water quality analyses are performed. Bio-Environmental Engineering personnel monitors the water system for the following EPA-required contaminant groups listed in the left-hand column of the following table using EPA-approved methods.

Analyze Groups and Monitoring Frequency Table

Analyze/Contaminant Group	*Monitoring Frequency*
Biological contaminants (total coliform group)[1]	Twice monthly - 13 samples each
Fluoride	10 samples monthly
Nitrates	Once yearly
Radioactive Contaminants	Quarterly, once every three years
Volatile-Organic Contaminants (VOCs)	Once yearly
Lead and Copper	Once every three years
Disinfection Byproducts-Total Trihalomethanes	Once yearly
Inorganic contaminants (IOCs)[2]	Once every nine years

[1] Contaminants in this group include total coliform, fecal coliform and heterotrophic bacteria.
[2] Contaminants in this group include metals specified by the Safe Drinking Water Act.

Explanation of monitoring results for 2009

Violations:

No monitoring violations occurred during 2009. All detected analytes were below the Maximum Contaminant Level.

Total Coliform: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

Because fewer than 40 coliform samples are collected per month, the EPA requires Tinker to report the highest monthly number of positive samples analyzed for the year. All confirmation samples collected were negative for total coliform.

Tinker's system is constantly monitored for various constituents in the water supply to meet all regulatory requirements. Results of regular monitoring are an indicator of whether or not Tinker's drinking water meets health standards.

The staff uses only EPA-approved laboratory methods to analyze the drinking water. Bio-Environmental Engineering staff collects water samples from the water distribution system and from residents' taps. These samples are then shipped to a certified laboratory where all of the required water quality analyses are performed.

Why does the taste or odor of my water sometimes differ?

Tiny traces of substances in water, usually well below any harmful level, may cause a noticeable taste or odor. For example, outside hoses left hooked up and turned off at the nozzle will often give a bad taste and odor to your house water. Hoses may contain phenols and they mix with traces of chlorine in the water to form chlorophenols. This is true of new washing machine hoses.

Most homes have copper plumbing. A little copper dissolves into the water all the time. At times, however, more may dissolve into the water and cause a taste. Automatic icemakers are particularly troublesome for causing taste problems. Run your water for a minute if it has been sitting in the pipes for more than two hours. Keep icemakers producing new ice by dumping the ice when the bin is full to limit taste or odor problems due to automatic ice making.

During the summer months, Tinker may purchase some water from the City of Oklahoma City. The source for OKC water is surface water, which has a different taste or odor than well water. In 2009, Tinker did not use any city water, except the TAC facility which uses OKC water.

Important telephone numbers

If you have any questions about this Water Quality Report, contact Lt. Joseph Gitersonke or Douglas Woods at the Bio-Environmental Engineering Flight.

The staff wants customers to be informed about their water utility. To learn more, attend any of the regularly scheduled water working group meetings. They are held in the Bio-Environmental Engineering office, Bldg. 3334, once every quarter.

Copies are available from the Bio-Environmental Engineering Flight upon request. Military network access is needed for the following:

- Bio-Environmental Engineering website:
  https://afkm.wpafb.af.mil/DocView.asp?DocID =6445016
  Once on the site, go to Menu – Customer Service – Water

Here are other important telephone numbers concerning Tinker's drinking water:

Bio-Environmental Engineering Flight: 734-7844
TSS Water Resources: 734-3114
Oklahoma Department of Environmental Quality: 702-8100
EPA Safe Drinking Water Hotline: 800-426-4791

Results Table. Detected Contaminants

The following table presents the analytical results of Tinker's monitoring for the reporting period of 2009. The State of Oklahoma allows Tinker to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative, are more than one year old. If these data are not from 2009, the date is noted.

Contaminant	MCLG	MCL	Units	Highest Level Detected	Detected range	In Compliance	Contamination/ Violation	Likely Source of Contaminant
Inorganic Contaminants								
Barium (2007)	2	2	ppm	0.5	0.5-0.5	Yes	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Nitrate (Measured ast Nitrogen)	10	10	ppm	1 MG/L	0.12 - 0.69	Yes	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Radioactive Contamination								
Beta/photon emitters	0	4	mrem/year	3.19	1.25-3.19	Yes	No	Decay of natural and man-made deposits
Combined Radium 226-228	0	5	pCi/L	1.225	0.638 - 1.225	Yes	No	Erosion of natural deposits
Gross alpha excluding radon and uranium	0	15	pCi/L	2.28	1.46 - 2.28	Yes	No	Erosion of natural deposits
LEAD OR COPPER 90% VALUES OR SAMPLES ABOVE THE ACTION LEVEL								
COPPER 90TH PERCENTILE (2007)	<1.3	1.3	ppm	0.172	N/A	Yes	No	Erosion of natural deposit; leaching from wood preservatives; corrosion of household plumbing systems
Volatile and Synthetic Organic Contaminants								
TRICHLORO ETHYLENE (2008)	0	5	pph	2.5	0 - 2.5	Yes	No	Discharge from metal degreasing sites and other factories