

Why are there Contaminants in my Drinking Water?

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 in drinking water may 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 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, may come from a variety of sources, such as agriculture, urban storm-water runoff, and residential uses.

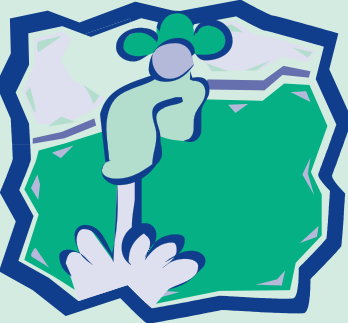
Organic chemical contaminants, including synthetic and volatile organic chemicals are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring, man-made from nuclear facilities and atmospheric deposition from former above ground testing, 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.

Nitrates

City of Santa Fe drinking water meets the federal drinking water standard of 10 ppm for nitrates. Nitrates have been detected in some of the City Wells above 5 ppm. Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.



Arsenic

The drinking water standard for arsenic is 10 µg/l. The City's drinking water met this standard throughout 2012. Arsenic occurs naturally in the earth's crust. When these arsenic-containing rocks, minerals, and soil erode, they release arsenic into ground water. While our drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's new standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Voluntary Monitoring

EPA has established secondary maximum contaminant levels (SMCL). Secondary standards are non-enforceable standards that serve as guidelines to assist public water systems in managing their drinking water. The presence of these contaminants typically results from the erosion of natural deposits. Aluminum and manganese containing materials are used as treatment aids in the water treatment process.

Samples for voluntary monitoring at BRWTP are taken at the point of entry of water into the City's distribution system. As such, the reported concentrations of contaminants may be further diluted in the distribution system through mixing with water from other City sources.

In cooperation with Los Alamos National Laboratory (LANL) and the New Mexico Environment Department, the City currently monitors Buckman Wells 1, 6 and 8 for LANL derived contamination. Samples are analyzed for radionuclides, general inorganic chemicals, metals, high explosives and organics. The results indicate detectable levels of radionuclides associated with natural sources. No Laboratory-derived radionuclides were detected in 2011. Repeat sampling since 2001 indicates Laboratory-derived radionuclides are not present in the Buckman Wells 1, 2, 6 and 8. These wells are part of the 13 wells that make-up the Buckman Wellfield. When required, water from these wells is delivered to the 10 million gallon Buckman Tank prior to distribution into the system.

Results of Recent Voluntary Testing at Buckman RWTP

Voluntary Primary Contaminate Monitoring at BRWTP					
Contaminant	Units	MCL	MCLG	Buckman RWTP	Violation
Barium	ppm	2	2	0.061 (0.042-0.061)	No
Copper	ppm	AL=1.3	1.3	0.0031 (0.0014-0.0031)	No
Chlorobenzene	ppb	100	100	0.011 (ND-0.011)	No
Ethylbenzene	ppb	700	700	0.011 (ND-0.011)	No
Flouride	ppm	4	4	0.32 (0.21-0.32)	No
Toluene	ppm	1	1	0.000071 (ND-0.000071)	No
Xylenes (Total)	ppm	10	10	0.000529 (ND-0.000529)	No
Trichloroethylene	ppb	5	5	0.06 (ND-0.06)	No
Lead	ppm	AL=15	0	0.00021 (ND-0.00021)	No
Nitrate (as N)	ppm	10	10	0.17 (0.058-0.17)	No

Voluntary Secondary Contaminate Monitoring at BRWTP		
Contaminant	Secondary Standard	Buckman RWTP
Aluminum	0.05 to 0.2 mg/L	0.015 (0.0109-0.015)
Chloride	250 mg/L	31 (22-31)
Copper	1.0 mg/L	0.0031 (0.0014-0.0031)
Fluoride	2.0 mg/L	0.32 (0.21-0.32)
Manganese	0.05 mg/L	0.0049 (0.002-0.0049)
pH	6.5-8.5	8.02 (7.74-8.02)
Sulfate	250 mg/L	46 (36-46)
Sodium	NA	20
Total Dissolved Solids	500 mg/L	233 (193 - 223)

Voluntary and Other Radiological Monitoring at BRWTP		
Contaminant	Unit of Measurement	Buckman RWTP
Americium-241	pCi/L	0.326 (ND - 0.326)
Strontium-90	pCi/L	0.12 (ND - 0.12)
Tritium	pCi/L	37 (ND - 37)
Uranium-234	pCi/L	0.352 (0.099 - 0.352)
Uranium-238	pCi/L	0.17 (ND - 0.17)

Accomplishment and achievements in 2012:

- Prepared and distributed the Safe Drinking Water Act-Consumer Confidence Report 2011
- State approval of City Stage 2 Disinfection By-Products Plan
- 100% response to customer contacts to water quality concerns
- Revision and approval of City Triggered Source Water Monitoring Plan
- Reclassification of the Santa Fe River and storage reservoirs
- 100% compliance to regulatory water samples
- Continued excellent working relationship with LANL and NMED
- Created and promoted through the PUC Council, community outreach with Dental Month in February 2013 with Santa Fe Oral Health Coalition
- Review of Arsenic monitoring/removal from the Buckman Well Fields
- 2 members of the Environmental Compliance Team elected on the Governing Board of the State Municipal League, Environmental Quality Association Board
- City participated in the review and completion of the NMED Drinking Water Regulation
- Produced 2,600 AF (acre feet) of renewable and safe surface water
- Maintained integrated water system operation with City and BDD sources
- Received a satisfactory report from OSE in the operation and maintenance of the Santa Fe River Dams

Future Goals and Projects:

- Revision and acceptance of Total Maximum Daily Loads with NMED
- Painting and maintenance improvements to storage tanks
- Complete design and construction of Buckman Well field parallel pipe line
- Improve and increase system capabilities through installation of new capital improvements

Cryptosporidium

Cryptosporidium is a protozoan parasite that is common in surface waters. The oocyst is the transmission stage of the organism. Cryptosporidium is introduced into our source waters via wild animal populations. Although the organism is readily removed by the conventional treatment process utilized at the Canyon Road Water Treatment facility, the oocyst is resistant to chemical disinfectants like chlorine and the primary reason to determine if additional treatment is required. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection.

In April 2007 the City began a two-year study to determine the average Cryptosporidium concentration in source water entering the Canyon Road Water Treatment facility. The sampling portion of the study was completed in March of 2009. The study is part of the requirements contained in the 2006 USEPA Long-Term Enhanced Surface Water Treatment Rule.

Cryptosporidium was detected in a single untreated sample in each of the following months: December of 2007, September 2008 and October 2008. The highest 12-month consecutive mean for this study was 0.018 oocysts/L. Since the concentration is <0.075 oocysts/L, no additional treatment at the Canyon Road Water Treatment Facility will be required.

Any new water system treating surface water such as BDD is required to monitor cryptosporidium for 24 consecutive months. At the BDD the untreated raw Rio Grande water cryptosporidium test results range from 0 to 0.4 oocysts/L.

Microbial and Disinfection Byproducts Rule

The Microbial and Disinfection Byproducts Rules (MDBPs) is a set of interrelated regulations that address risks from microbial pathogens and disinfectants/disinfection byproducts (DBPs). The rule focuses on public health protection by limiting exposure to DBPs (known carcinogens), specifically total trihalomethanes (TTHM) and five haloacetic acids (HAA5), which can form in water through disinfectants used to control microbial pathogens.

In previous years the City selected sampling locations that distinguished between production sources and thus, samples from distribution could be referenced back to a particular source. During 2012 however, sources were mixed throughout the year and therefore samples are more representative of the water system as a whole, rather than by individual source.

	MCL	MCLG	Sample Date	Range 2012		Typical Source
Haloacetic Acids (HAA5s)	60	NA	14-Nov 2012	Low 0	High 29.45	By-product of drinking water chlorination
Total Trihalo-methane (TTHMs)	80	NA	14-Nov 2012	Low 0	High 43.21	By-product of drinking water chlorination



Lead and Copper Sampling

Tests for lead and copper are taken from customer taps located throughout the City once every three years. The most recent round of lead and copper testing took place in August 2012. 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 Water Levels							Typical Source
Inorganic Contaminants	MCLG	AL**	(90 th percentile)*	# of Sample <AL	Sample Date	Exceeds AL	
Copper (ppm)	1.3	1.3	0.70	31	August 2012	No	Erosion of natural deposits; Corrosion of household plumbing systems.
City Water Levels							Typical Source
Inorganic Contaminants	MCLG	AL**	(90 th percentile)*	# of Sample <AL	Sample Date	Exceeds AL	
Lead (ppb)	0	15	7.7	31	August 2012	No	Corrosion of household plumbing; Erosion of natural deposits.

*Results of monitoring are used to determine the concentration at the 90th percentile (e.g., if 100 samples analyzed, the concentration at the 90th highest sample). Based on the number of samples analyzed in 2012 the 90th percentile is the 28th sample.

** AL = Action Level

Contacts for Additional Information

If you have any questions, comments, or suggestions regarding this report please contact Brian Snyder at 955-4201 or write to the address on page 1.

- City of Santa Fe Billing Information and Customer Service 955-4333
- City Water Quality Issues 955-4232 Alex Puglisi
- New Mexico Environment Department Drinking Water Program (877) 654-8720
- Environmental Protection Agency Safe Drinking Water Hot Line (800) 426-4791
- New Mexico Environment Department <http://www.nmenv.state.nm.us>
- Environmental Protection Agency www.epa.gov/safewater
- U.S. Geological Survey <http://nm.water.usgs.gov>
- Center for Disease Control <http://www.cdc.gov>
- City of Santa Fe's Website www.santafenm.gov
- Buckman Direct Diversion www.bddproject.org



Important Drinking Water 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.

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.

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.

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

ppb: parts per billion or micrograms per liter (µg/l)



2012 City of Santa Fe Water Quality Table

The table on the following page lists contaminants which:

- Have associated primary Maximum Contaminant Levels (MCLs) that are regulated and;
- Were detected in testing conducted by the City and New Mexico Environment Department. Contaminants were detected at or above detection limits established by the USEPA in calendar year 2012 or the most recent test if a sample was not analyzed up to 2012.

The compounds detected represent a small fraction of the substances that SDCW tested for. Testing is required for over 80 contaminants. The EPA requires monitoring for certain contaminants less than once per year because the concentrations are not expected to vary significantly from year to year. In the Water Quality Table we include the result of any contaminant found during compliance monitoring in 2012. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these 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), or visiting www.epa.gov/safewater.

City of Santa Fe 2012 Water Quality Table

Regulated Compliance Monitoring

Contaminant	Units	MCL	MCLG	City Well Field ^d	Sample Date	Buckman Tank ^e	Sample Date	Canyon Road WTP	Sample Date	Buckman WTP	Sample Date	Violation	Typical Source
Inorganic Contaminants													
Arsenic	ppb	10	0	4.6	18-May-11	1.6	17-Jun-11	ND	07-Mar-12	ND	12-Apr-12	No	Erosion of natural deposits; Runoff from orchards. Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.8	24-Aug-11	0.073	17-Jun-11	0.0076	07-Mar-12	0.039	12-Apr-12	No	Discharge from drilling wastes. Discharge from metal refineries. Erosion of natural deposits.
Flouride	ppm	4	4	0.18 (0.13 - 0.18)	18-May-11	0.25	17-Jun-11	0.13	07-Mar-12	0.22	12-Apr-12	No	Erosion of natural deposits. Water additive which promotes strong teeth. Discharge from fertilizer and aluminum factories.
Selenium	ppb	50	50	1.7 (1.1-1.7)	16-May-11	ND	17-Jun-11	ND	07-Mar-12	ND	12-Apr-12	No	Discharge from steel/metals factories; Discharge from plastic and fertilizer factories
Nitrate [as N]	ppm	10	10	7.1 (2.6-7.1)	03-May-12	ND	03-May-12	ND	07-Mar-12	ND	12-Apr-12	No	Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion from natural deposits.
Radioactive Contaminants (Compliance period 2011 to 2013)													
Gross Alpha Emitters	PCi/L	15	0	1.1	09-Aug-12	1.3	16-Jun-11	0.9	16-Jun-11	0.9	30-Nov-11	No	Erosion of natural deposits.
Gross Beta/Photon Emitters	PCi/L	50 ^a	N/A	ND	09-Aug-12	2.4	16-Jun-11	2.6	16-Jun-11	2.6	30-Nov-11	No	Decay of natural and man-made deposits.
Radium 226/228	PCi/L	5	0	0.45	09-Aug-12	0.18	16-Jun-11	ND	16-Jun-11	0.02	30-Nov-11	No	Erosion of natural deposits.
Uranium	ppb	30	0	ND	09-Aug-12	ND	16-Jun-11	1	16-Jun-11	1	30-Nov-11	No	Erosion of natural deposits.
Surface Water Contaminants													
Turbidity ^c (highest single measurement)	NTU	TT=0.3	0	NA	NA	NA	NA	1.6	Continuous	0.99	Continuous	No	Soil Runoff
Turbidity ^c (lowest monthly % meeting limits)	NTU	TT=% <0.3 NTU	0	NA	NA	NA	NA	99.4%	Continuous	99.3%	Continuous	No	Soil Runoff
Toatl Organic Carbon (TOC)	ppm	TT (35% 45% Removal	NA	NA	NA	NA	NA	39% to 70% removal	Monthly in 2012	NA	NA	No	Naturally present in the environment

Notes:

- a. EPA considers 50 pCi/L to be the level of concern for beta particles.
- b. The City complies with alternative compliance criteria to meet TOC removal requirements.
- c. Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- d. City well field: Alto, Auga Fria, Ferguson, Osage, Santa Fe, St. Michael & Torreon.
- e. Buckman wells 1-13 and Northwest well.

Key to Units, Terms and Abbreviations

- NA: Not Applicable
- ND: Not Detected
- NR: Not Reported
- NTU: Nephelometric Turbidity Units
- ppm: parts per million, or milligrams per liter (mg/l)
- ppb: parts per billion, or micrograms per liter (ug/l)
- pCi/l: picocuries per liter (a measure of radioactivity)
- TT: A Treatment Technique standard was set instead of an Maximum Contaminant Level

(value 1 - value 2) Ranges contained in brackets represent the highest and lowest values observed to date during the regulatory compliance period. A range of values from low to high is not reported if only one sample has been taken for the compliance period currently in effect.



City of Santa Fe Water Division
P.O. Box 909, Santa Fe, NM 87504

Customer Service (505) 955-4333
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2012 Water Quality Report

The City of Santa Fe's Water Division (the City) is pleased to provide the 2012 Water Quality Report. A safe and dependable water supply is vital to our community and is the primary mission of the City. This report is provided annually and contains information on the quality of water obtained throughout the calendar year. In 2012, the City's drinking water met all U.S. Environmental Protection Agency (EPA) and State drinking water quality limits. The report contains additional details about where your water comes from, what it contains, and how it compares to standards set by federal and state regulatory agencies. It also provides educational information on contaminants which may be a concern.

Sources of Supply

The City was served by four distinct sources of supply in 2012. The 17,000 acre Santa Fe Watershed provides surface runoff to the Santa Fe River where it is stored in the McClure and Nichols Reservoir prior to treatment. Surface water from the Santa Fe River and Rio Grande is treated through conventional and advanced treatment processes at the Canyon Road Water Treatment Plant and Buckman Regional Water Treatment Plant (BRWTP), respectively. The City Well Field is mostly located in close proximity to the Santa Fe River and consists of 8 active wells located within the City limits of Santa Fe. The Buckman Well Field consists of 13 wells located near the Rio Grande, approximately 15 miles northwest of Santa Fe. All four sources are treated with chlorine which is used for disinfection and pathogenic microorganism removal. Fluoride is added to the water supply to benefit the community as recommended by public health professionals.

In 2011, the Buckman Direct Diversion (BDD) Project surface water supply was successfully integrated into the municipal distribution system and operated in conjunction with the City's pre-existing sources of supply throughout 2012. The surface water treated at the BRWTP is taken directly from the Rio Grande. BDD not only improves sustainability for the area but also increases the City's resilience under drought conditions, replacing current groundwater pumping that cannot be sustained, and making the City's wells available as drought and emergency reserves rather than sources used to meet daily water demands.

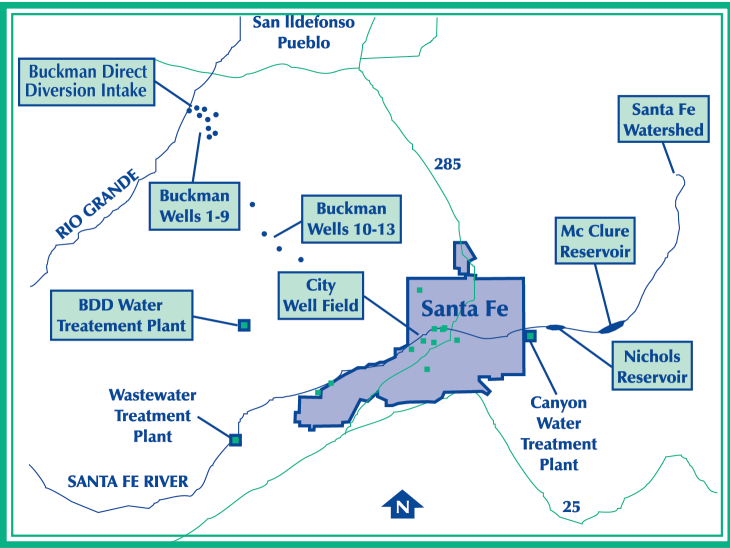
Do I need to take special precautions?

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 Drinking Water Hotline (800-426-4791).

En Español

Este reporte contiene informacion importante sobre la calidad del agua en Santa Fe Si tiene alguna pregunta o duda sobre este reporte puede hablarle a Victor Archuleta al telefono 505-955-4370.

Map of Water Sources



Source Water Assessment and Availability

The New Mexico Environment Department (NMED) completed a Source Water Assessment for the City of Santa Fe. This assessment includes a determination of source water protection areas and an inventory of pollution sources within the areas of concern. NMED concluded: "The Susceptibility Analysis of the City of Santa Fe water utility reveals that the utility is well maintained and operated, and the sources of drinking water are generally protected from potential sources of contamination based on an evaluation of the available information. The susceptibility rank of the entire water system is **"moderately low"**. A copy of the Assessment is available by contacting NMED at 505-476-8638.

City ordinances adopted in 2005 built upon the recommendations in the Source Water Assessment. The "Safe Drinking Water and Source Water Protection" and the "Stormwater Illicit Discharge Control" ordinances provide additional controls and protections for the City's ground and surface water supplies. In addition, the City established a Stormwater Program with the goal of reducing pollutant discharged to the Santa Fe River. Please contact 955-5644 to report illegal dumping in storm drains, streets and arroyos.