



ANNUAL

WATER  
QUALITY  
REPORT

*Water testing performed in 2009*

*Presented By:*

CITY OF MISSION



PWS ID#: TX1080008

## Maintaining High Standards

Once again we are proud to present our annual water quality report. This report covers all testing performed between January 1, 2009, and December 31, 2009. The events of the past few years have presented many of us with challenges we could not have imagined. Yet in spite of this, we have maintained our high standards in an effort to continue delivering the best quality drinking water possible. There may be other hurdles in the future, but know that we will always stand behind you and the drinking water we work diligently to provide.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions, we are always available to assist you.

## Important Health Information

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.



## Where Does My Water Come From?

The City of Mission, Water Systems, consists of two water treatment plants: the South Water Treatment Plant (8.0 mgd) and the North Water Treatment Plant (11.5 mgd). Our raw water source is the Rio Grande River, and the raw water is delivered from the river to the reservoirs via irrigation canals. Combined, our water treatment facilities can treat and purify 19.5 million gallons per day of clean drinking water.

## Storm Water Management; Tips to Prevent Storm Water Pollution

1. Remember to turn off your sprinklers when it rains to avoid water runoff; during winter, runoff can freeze, causing slippery conditions.
2. Bag your pet's waste—don't just leave it there. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local water bodies.
3. Don't apply pesticides, fertilizers, and herbicides before it rains. Contrary to popular belief, the rain won't help to soak these chemicals into the ground; it will only help create polluted runoff into our local creeks.
4. Select native and adapted plants and grasses that are drought and pest resistant. Native plants require less water, fertilizers, and pesticides. Learn more about native and adapted plants at [www.txsmartscape.com](http://www.txsmartscape.com).
5. Reduce the amount of paved area and increase the amount of vegetated area in your yard.
6. If you change your car's oil, don't dump it on the ground or in the storm drain; dispose of it properly at an oil-recycling center.
7. Check your car, boat, or motorcycle for leaks. Clean up spilled fluids with an absorbent material; don't rinse the spills into the storm drain.
8. Don't get rid of grass clippings and other yard waste by dumping it or sweeping it into the storm drain; this will cause depleted oxygen for aquatic life. Instead, compost your yard waste.
9. When washing your car at home, wash with only water or use biodegradable soap and wash it on a lawn or other unpaved surface; better yet, take your car to a professional car wash.
10. Don't get rid of old or unused paint by throwing it down the storm drain; dispose of paint and other household hazardous waste at recycling facilities.
11. Don't pump your pool water into the storm drain; pool chemicals can be hazardous to our creeks' habitats. Whenever possible, drain your pool into the sanitary sewer system where it can be treated.
12. Don't mess with Texas! Throw litter away in a garbage can, not out your window. Recycle what you can!

## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We will meet Tuesday, August 10, 2010, at 6:00 p.m. at the Public Works Building located at 2801 North Holland.

## Water Conservation and Drought Contingency Plan

The City of Mission implemented a Water Conservation and Drought Contingency Plan to manage and provide an adequate water supply to meet the future needs of our customers. The purpose of this document is to establish procedures to identify, classify, and manage an effective and efficient water supply during high demand or a water shortage emergency. Excessive demand on the water treatment plants and/or continually falling treated water reservoir levels which do not refill overnight to a specific level will trigger four (4) stages of the water conservation plan. These stages range from Stage 1 (voluntary stage) to Stage 5 (water rationing). Utility customers in the City of Mission are in a voluntary water conservation Stage 1 at this time and are encouraged to limit their daily water usage by using good management practices of water conservation. Utility customers will be notified prior to a stage level change: at such time, customers may incur a surcharge fee based on the customer's water usage history for Stages 3, 4, and 5. Fines that may exceed \$400.00 may be imposed for any violations of any stage of the water conservation plan, and depending on the severity of the water violation, the water service may be terminated.

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Miguel (Mike) Garcia, Water Treatment Plant Supervisor, at (956) 580-8780.



## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which 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 these contaminants does not necessarily indicate that the water poses a health risk.

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 radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

**Inorganic Contaminants**, 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 Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which may also come from gas stations, urban stormwater runoff, and septic systems;

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

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact our business office. For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Naturally Occurring Bacteria

The simple fact is, bacteria and other microorganisms inhabit our world. They can be found all around us: in our food; on our skin; in our bodies; and, in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested many water samples for coliform bacteria. In that time, none of the samples came back positive for the bacteria. Federal regulations now require that public water that tests positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliform are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliform to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.

## Lead and Drinking Water

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 Mission 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 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, raw water is drawn from our water source and sent to the reservoir where copper sulfate (algae control) is added. Gravity then causes the raw water to flow to the water pump intake where we add powdered activated carbon (taste and odor control). Then the water is pumped to the water treatment plant. The water then goes to a rapid mixer where aluminum sulfate and polymer are added. Chlorine dioxide is added for disinfection. The addition of these substances causes small particles to adhere to one another (called floc), making them heavy enough to settle into a basin from which sediment is removed. At this point, the water is filtered through layers of anthracite coal and sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Chlorine and ammonium sulfate are added as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine added, adding the smallest quantity necessary to protect the safety of your water without compromising aesthetics.) Finally, polyphosphate, a corrosion inhibitor (added to protect distribution system pipes), is added before the water is pumped to sanitized, underground reservoirs, water towers, and into your home or business.

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>Barium</b> (ppm)	2008	2	2	0.091	0.091–0.091	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Chloramines</b> (ppm)	2009	[4.0]	[<4.0]	2.5	2.3–2.7	No	Water additive used to control microbes.
<b>Chromium</b> (ppb)	2008	100	100	2.8	2.8–2.8	No	Discharge from steel and pulp mills; Erosion of natural deposits.
<b>Fluoride</b> (ppm)	2009	4.0	4.0	0.46	0.45–0.46	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Gross Beta Emitters</b> (pCi/L)	2008	50	0	3.3	3.2–3.4	No	Decay of natural and man-made deposits.
<b>Haloacetic Acids [HAA]</b> (ppb)	2009	60	NA	13.0	10.2–18.0	No	Byproduct of drinking water disinfection.
<b>Nitrate</b> (ppm)	2009	10	10	0.20	0.14–0.26	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
<b>Selenium</b> (ppb)	2008	50	50	6.0	6.0–6.0	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2009	80	NA	25.5	19.5–32.7	No	Byproduct of drinking water chlorination.
<b>Total Organic Carbon<sup>1</sup></b> (ppm)	2009	TT	NA	1.73	0.80–6.67	No	Naturally present in the environment.
<b>Turbidity<sup>2</sup></b> (NTU)	2009	TT	NA	0.30	0.03–0.30	No	Soil runoff.
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2009	TT	NA	100%	NA	No	Soil runoff.

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
<b>Copper</b> (ppm)	2007	1.3	NA	0.172	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
<b>Lead</b> (ppb)	2007	15	NA	1	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits.

### SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>Aluminum</b> (ppm)	2009	0.05	NA	0.035	0.035–0.035	No	Abundant naturally occurring element.
<b>Chloride</b> (ppm)	2009	300	NA	130	128–132	No	Abundant naturally occurring element; Used in water purification; Byproduct of oil field activity.
<b>Manganese</b> (ppm)	2008	0.05	NA	0.0016	0.0016–0.0016	No	Abundant naturally occurring element.
<b>pH</b> (Units)	2009	>7.0	NA	7.3	7.2–7.3	No	Measure of corrosivity of water.
<b>Sulfate</b> (ppm)	2009	300	NA	226	224–227	No	Naturally occurring; Common industrial byproduct; Byproduct of oil field activity.
<b>Total Dissolved Solids [TDS]</b> (ppm)	2009	1,000	NA	668	660–676	No	Total dissolved mineral constituents in the water.
<b>Zinc</b> (ppm)	2008	5	NA	0.005	0.005–0.005	No	Moderately abundant naturally occurring element; Used in the metal industry.

### INITIAL DISTRIBUTION SYSTEM EVALUATION <sup>3</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Haloacetic Acids [HAA]–IDSE Results (ppb)	2008	18.2	ND–28.9	Byproduct of drinking water disinfection.
TTHMs [Total Trihalomethanes]–IDSE Results (ppb)	2008	28.3	ND–58.4	Byproduct of drinking water disinfection.

### UNREGULATED SUBSTANCES <sup>4</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2009	4.2	3.0–5.4	Byproduct of drinking water disinfection.
Bromoform (ppb)	2009	4.9	3.7–6.0	Byproduct of drinking water disinfection.
Chloroform (ppb)	2009	1.9	1.6–2.2	Byproduct of drinking water disinfection.
Dibromochloromethane (ppb)	2009	5.2	4.0–6.4	Byproduct of drinking water disinfection.
Sodium (ppm)	2009	107	105–108	Erosion of natural deposits; Byproduct of oil field activity.

### OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bicarbonate (ppm)	2009	130	128–132	Corrosion of carbonate rocks such as limestone.
Calcium (ppm)	2008	75	75–75	Abundant naturally occurring element.
Copper (ppm)	2008	0.174	0.174–0.174	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
Hardness as Ca/Mg (ppm)	2008	261	249–273	Naturally occurring calcium and magnesium.
Magnesium (ppm)	2008	20.8	20.8–20.8	Abundant naturally occurring element.
Nickel (ppm)	2008	0.005	0.005–0.005	Erosion of natural deposits.
Total Alkalinity as CaCO <sub>3</sub> (ppm)	2009	107	105–108	Naturally occurring soluble mineral salts.

<sup>1</sup> Total organic carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection byproducts. Disinfection is necessary to ensure that the water does not have unacceptable levels of pathogens. Byproducts of disinfection include trihalomethanes (THMs) and haloacetic acids (HAA), which are reported elsewhere in this report.

<sup>2</sup> 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.

<sup>3</sup> We were required by the U.S. EPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection byproduct concentrations. Disinfection byproducts (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

<sup>4</sup> Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the U.S. EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Any unregulated contaminants detected are reported in the following table. For additional information and data visit [www.epa.gov/safewater/ucmr/ucmr2/index.html](http://www.epa.gov/safewater/ucmr/ucmr2/index.html), or call the Safe Drinking Water Hotline at (800) 426-4791.

## Definitions

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

**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.

**NA:** Not applicable.

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**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).

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

