

Annual Drinking Water Quality Report

TX2200023

CITY OF SAGINAW

Annual Water Quality Report for the period of January 1 to December 31, 2012

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

For more information regarding this report contact:

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CITY OF SAGINAW is Purchased Surface Water

Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (817)232-4640 .

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 dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pickup substances resulting from the presence of animals or from human activity.

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

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.

- 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.

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 the system's business office.

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or immune compromised persons such as those undergoing chemotherapy for cancer; persons 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 providers. Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791).

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. We are responsible for providing high quality drinking water, but we 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 <http://www.epa.gov/safewater/lead>.

Public Participation Opportunities

Date: 1st & 3rd Tuesday of each month **Time:** 6:00 p.m. **Location:** 333 W. McLeroy Blvd.

Phone Number: (817) 232-4640

Este informe contiene informacion muy importante sobre el agua que usted bebe. Traduzcalo o hable con alguien que Lo entienda bien. Si tiene preguntas o comentarios sobre este informe en espanol, favor de llamar al tel. (817) 232-4640 -para hablar con una persona bilingue en espanol.

Information about Source Water Assessments

A Source Water Susceptibility Assessment for your drinking water source(s) is currently being updated by the Texas Commission on Environmental Quality. This information describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The information contained in the assessment allows us to focus source water protection strategies.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL:
<http://gis3.tceq.state.tx.us/swav/Controller/index.jsp?wtrsrc=>

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: <http://dww.tceq.texas.gov/DWW>

| Source Water Name | Type of Water | Report Status | Location |
|--------------------|---------------------------|---------------|----------|
| SW FROM FORT WORTH | CC FROM TX2200012 CITY OF | SW | _____ |

2012 Regulated Contaminants Detected

Lead and Copper

Definitions:

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

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

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|-----------------|--------------|------|-------------------|-----------------|-----------------|-------|-----------|---|
| Copper | 08/06/2010 | 1.3 | 1.3 | 0.421 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 08/06/2010 | 0 | 15 | 4.35 | 0 | ppb | N | Corrosion of household plumbing systems Erosion of natural deposits. |

Water Quality Test Results

- Definitions: The following tables contain scientific terms and measures, some of which may require explanation.
- Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.
- Maximum Contaminant Level or 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 or 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.
- Maximum residual disinfectant level or MRDL: 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.
- Maximum residual disinfectant level goal or MRDLG: 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.
- MFL: million fibers per liter (a measure of asbestos)
- na: not applicable.
- NTU: nephelometric turbidity units (a measure of turbidity)
- pCi/L: picocuries per liter (a measure of radioactivity)

Water Quality Test Results

| | |
|------|---|
| ppb: | micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water. |
| ppm: | milligrams per liter or parts per million - or one ounce in 7,350 gallons of water. |
| ppt | parts per trillion, or nanograms per liter (ng/L) |
| ppq | parts per quadrillion, or picograms per liter (pg/L) |

Regulated Contaminants

| Disinfectants and Disinfection By-Products | Collection Date | Highest Level Detected | Range of Levels Detected | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|--|-----------------|------------------------|--------------------------|-----------------------|-----|-------|-----------|--|
| Haloacetic Acids (HAA5)* | 2012 | 3 | 2.6 - 2.6 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM) | 2012 | 6 | 5.5 - 5.5 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |
| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Levels Detected | MCLG | MCL | Units | Violation | Likely Source of Contamination |
| Nitrate [measured as Nitrogen] | 2012 | 0.374 | 0.374 - 0.374 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

Fort Worth Water Quality Data for 2012
Information for Wholesale Water Customers

| Contaminant | Measure | MCL | 2012 Level | Range of Data | MCLG | Common Sources of Substance |
|--|-----------------------|---|---|----------------|------|---|
| Arsenic | ppb | 10 | 1 | 0.3 to 1 | 0 | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes |
| Barium | ppm | 2 | 0.06 | 0.04 to 0.06 | 2 | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| Alpha particles | pCi/L | 15 | 2.8 | 0.0 to 2.8 | N/A | Erosion of natural deposits. |
| Beta particles & Photon emitters ¹ | pCi/L | 50 | 7.5 | 0 to 7.5 | N/A | Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation |
| Fluoride | ppm | 4 | 0.98 | 0.48 to 0.98 | 4 | Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories |
| Nitrate (measured as Nitrogen) | ppm | 10 | 0.91 | 0.12 to 0.91 | 10 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Nitrite (measured as Nitrogen) | ppm | 1 | 0.52 | 0.01 to 0.52 | 1 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Bromate | ppb | 10 | 2.89 | 0 to 2.89 | 0 | By-product of drinking water disinfection |
| Haloacetic Acids | ppb | 60 | 15.2 | 5.6 to 15.2 | N/A | By-product of drinking water disinfection |
| Total Trihalomethanes | ppb | 80 | 38.0 | 6.8 to 38.0 | N/A | By-product of drinking water disinfection |
| Total Coliforms (including fecal coliform & E. coli) | % of positive samples | Presence in 5% or more of monthly samples | Presence in 3.4% of monthly samples | 0 to 3.4% | 0 | Coliforms are naturally present in the environment as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste. |
| Turbidity ² | NTU | TT | 0.45 Highest single result 99.9% Lowest monthly % of samples ≤ 0.3 NTU | N/A | N/A | Soil runoff |
| Chloramines | ppm | 4 | 3.0 | 0.5 to 4.2 | 4 | Water additive used to control microbes |
| Total Organic Carbon ³ | 1 | 1 | 1 | TT = % removal | N/A | Naturally occurring |

¹ Because Fort Worth historically has had low levels of radionuclides in its water, TCEQ has Fort Worth on a reduced monitoring schedule. The test results shown are from 2011. The next testing is scheduled for 2014.

² Turbidity is a measure of the cloudiness of water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

³ Total Organic Carbon is used to determine disinfection by-product precursors. Fort Worth was in compliance with all monitoring and treatment technique requirements for disinfection by-product precursors.

Fort Worth Water Quality Data for 2012
Information for Wholesale Water Customers

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

| Contaminant | Measure | Range of Detects | 2012 Level | MCL | MCLG | Common Sources of Substance |
|-----------------------|---------|------------------|------------|---------------|------|---|
| Chloral Hydrate | ppb | 0.26 to 0.76 | 0.76 | Not regulated | None | By-product of drinking water disinfection |
| Bromoform | ppb | 0 to 3.6 | 3.6 | Not regulated | None | |
| Bromodichloromethane | ppb | 2.3 to 6.7 | 6.7 | Not regulated | None | By-products of drinking water disinfection; not regulated individually; included in Total Trihalomethanes |
| Chloroform | ppb | 2.3 to 13.3 | 13.3 | Not regulated | 70 | |
| Dibromochloromethane | ppb | 1.3 to 5.0 | 5.0 | Not regulated | 60 | |
| Monochloroacetic Acid | ppb | 0 to 1.0 | 1.0 | Not regulated | 70 | |
| Dichloroacetic Acid | ppb | 3.6 to 8.1 | 8.1 | Not regulated | None | |
| Trichloroacetic Acid | ppb | 0 to 7.4 | 7.4 | Not regulated | 20 | By-products of drinking water disinfection; not regulated individually; included in Haloacetic Acids. |
| Monobromoacetic Acid | ppb | 2.0 to 9.4 | 9.4 | Not regulated | None | |
| Dibromoacetic Acid | ppb | 0.5 to 1.3 | 1.3 | Not regulated | None | |

Abbreviations Used in All Tables

Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that 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.

N/A - Not Applicable.

NTU - Nephelometric Turbidity Unit: a measure of water turbidity or clarity.

pCi/L - Picocuries per liter; a measure of radioactivity.

ppb - Parts per billion or micrograms per liter ($\mu\text{g/L}$).

ppm - Parts per million or milligrams per liter (mg/L).

TT - Treatment Technique: a required process intended to reduce the level of a contaminant in drinking water.

Source Water Assessments

Our drinking water is obtained from surface water sources. Fort Worth's drinking water sources are Lake Worth, Eagle Mountain Lake, Lake Bridgeport, Richland Chambers Reservoir, Cedar Creek Reservoir, Lake Benbrook and the Clear Fork Trinity River.

A Source Water Susceptibility Assessment for your drinking water sources is being updated by the Texas Commission on Environmental Quality. This information describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The information contained in the assessment allows us to focus our source water protection strategies. Some of this source water assessment information will be available on Texas Drinking Water Watch at <http://dww.tceq.state.tx.us/DWW>.

For more information on source water assessments and protection efforts by our system, please contact us.

Microorganism Testing

TRWD monitors the raw water at all intake sites for *Cryptosporidium*, *Giardia Lambia* and viruses. The source is human and animal fecal waste in the watershed.

No viruses were detected. *Cryptosporidium* and *Giardia Lambia*, microbial parasites common in surface water, were detected at very low levels in 2012.

The *Cryptosporidium* testing methods cannot determine if the parasite is dead and inactive or alive and capable of causing cryptosporidiosis. This is an abdominal infection that causes nausea, diarrhea and abdominal cramps after indigestion.

The drinking water treatment process is designed to remove *Cryptosporidium* and *Giardia Lambia* through filtration.

| Secondary Constituents | | |
|--|---------------|------------|
| This chart lists other items for which the water is tested. These items do not relate to public health but rather to the aesthetic effects. These items are often important to industrial users. | | |
| Item | Measure | 2012 Range |
| Bicarbonate | ppm | 93 to 120 |
| Calcium | ppm | 97 to 110 |
| Chloride | ppm | 14 to 32 |
| Conductivity | µmhos/cm | 318 to 423 |
| pH | units | 8.0 to 8.4 |
| Magnesium | ppm | 4 to 8 |
| Sodium | ppm | 14 to 28 |
| Sulfate | ppm | 25 to 38 |
| Total Alkalinity as CaCO ₃ | ppm | 93 to 120 |
| Total Dissolved Solids | ppm | 172 to 237 |
| Total Hardness as CaCO ₃ | ppm | 117 to 133 |
| Total Hardness in Grains | grains/gallon | 7 to 8 |