



Annual Drinking Water Quality Report 2017

SAGINAW, TX

Annual Water Quality Report for the period of January 1 to December 31, 2017. 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.

CITY OF SAGINAW water supply is Purchased Surface Water.

City Council Meets the 1st & 3rd Tuesday each month at 6:00 pm, discussion of water issues or concerns are welcome.

For more information regarding this report contact:
Randy Newsom at
817-230-0448

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



INFORMATION ABOUT SOURCE WATER ASSESSMENTS

The TCEQ has completed a Source Water Assessment for all drinking water systems that own their sources. The report 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 system(s) from which we purchase our water received the assessment report. For more information on source water assessments and protection efforts at our system, contact Randy Newsom at (817-230-0448).

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: <http://www.tceq.texas.gov/gis/swaview>

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: <http://dww2.tceq.texas.gov/DWW/>

The City of Saginaw purchases 100% of our drinking water from the City of Fort Worth. All treatment processes are completed by the City of Fort Worth at the treatment plant.

The City of Saginaw only monitors chlorine levels throughout our distribution system to ensure the residual never drops below the minimum of 0.5 mg/l. During the calendar year 2017 our average daily chlorine residual was 2.08 mg/l.

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 pick up 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 EPA's 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, the 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 immuno-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>.



CITY OF FORT WORTH DATA: Microorganism testing shows low detections in raw water

Tarrant Regional Water District monitors the raw water at all intake sites for Cryptosporidium, Giardia Lamblia and viruses. The source is human and animal fecal waste in the watershed.

The 2017 sampling showed low level detections of Giardia Lamblia and viruses that are common in surface water. The table below indicates when detections were found in each raw water source. Cryptosporidium and Giardia Lamblia monitoring is done monthly. Virus monitoring is performed four times a year in January, March, July and September. Viruses are treated through disinfection processes. Cryptosporidium and Giardia Lamblia are removed through a combination of disinfection and/or filtration.

Intake Location	Giardia Lamblia	Cryptosporidium	Adenovirus	Enterivirus
Richland-Chambers Reservoir	Not detected	Not detected	Not detected	Not detected
Cedar Creek Lake	March	Not detected	Not detected	Not detected
Lake Benbrook	May	Not detected	Not detected	Not detected
Eagle Mountain Lake	January	Not detected	Not detected	Not detected
Lake Worth	January	Not detected	Not detected	Not detected
Clearfork of Trinity River	January, February, April, May, June	Not detected	Not detected	Not detected

TCEQ accesses raw water supplies for susceptibility. Fort Worth uses surface water from Lake Worth, Eagle Mountain Lake, Lake Bridgeport, Richland Chambers Reservoir, Cedar Creek Reservoir, Lake Benbrook and the Clear Fork Trinity River.

Fort Worth owns Lake Worth. The U.S. Army Corps of Engineers is responsible for Benbrook Lake. The other four lakes are owned and operated by Tarrant Regional Water District. The Texas Commission on Environmental Quality completed an assessment of Fort Worth's source waters. TCEQ classified the risk to our source waters as high for most contaminants. High susceptibility means there are activities near the source water or watershed that make it very likely that chemical constituents may come into contact with the source water. It does not mean that there are any health risks present. Tarrant Regional Water District, from which Fort Worth purchases its water, received the assessment reports. For more information on source water assessments and protection efforts at our system, contact Stacy Walters at 817-392-8203.

Further details about the source-water assessments are available at www.tceq.texas.gov/DWW/JSP/SWAP.jsp?tinwsys_is_number=5802&tinwsys_st_code=TX&wsnumber=TX2200012%20%20&DWWState=TX.

City of Saginaw Data for calendar year 2017

Disinfectant Residual Table

Disinfectant	Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Violation (Y/N)	Likely Source of Contamination
Chloramines	2017	2.08	0.5	4	4	4	ppm	N	Water additive used to control microbes.

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	0	0		0	N	Naturally present in the environment

City of Saginaw Data: 2016 Regulated Contaminants Detected

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	2016	1.3	1.3	0.61	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing.
Lead	2016	0	15	4.3	0	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

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 (HAAs)	2017	15	3.3-29.1	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2017	17	4.23-39.2	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]	2017	0.225	0.225-0.225	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

The Texas Water Development Board requires the City of Saginaw to conduct an annual water audit report. This report determines the amount of water loss that a system had throughout the year. The city submitted the 2017 report for the time period of January through December 2017. Our system lost an estimated 2,668,390 gallons of water. This loss is calculated by using events such as main breaks, theft, meter inaccuracies, Fire Department use and system maintenance. Using this data, the City of Saginaw had a .26% loss for the year. The city strives to have a 10% loss or lower on an annual basis. With better tracking methods, system inspections and monitoring, the city hopes to lower water loss each year. If you have any questions about the water audit, please call 817-230-0448.



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DEFINITIONS

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

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 contamination.

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.

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.

NA: Not applicable

ND: Not detected

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

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water.

WTP Water Treatment Plant

TOC Total Organic Carbon

HAA Haloacetic Acids

TTHM Total Trihalomethanes

LRAA Local Running Annual Average

SW From Fort Worth CC From TX220012 City of / SW (Type of Water)

Contaminant	Measure	MCL	MCLG	Year of Collection	Highest / Average Level Detected	Range of Levels Detected	Violation	Likely Sources of Contaminant
Beta Particles & Photon emitters ¹	pCi/L	50	N/A	2017	5.6	4.4-5.6	No	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
Combined Radium 226/228 ¹	pCi/L	5	N/A	2017	2.5	NA	No	Erosion of natural deposits
Uranium	mg/L	0.0300	N/A	2017	0.0011	0-0.0011	No	Erosion of natural deposits
Fluoride	ppm	4	4	2017	0.66	0.32-0.66	No	Water additive that promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	ppm	10	10	2017	0.756	0.134-0.756	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	1	1	2017	0.030	0.006-0.030	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Arsenic	ppb	10	0	2017	2.00	0.00-2.00	No	Erosion of natural deposits; runoff from orchards, runoff from glass and electronics production wastes
Atrazine	ppb	3	3	2017	0.1	0.0-0.1	No	Runoff from herbicide used on row crops
Simazine	ppb	4	4	2017	0.06	0.0-0.06	No	Runoff from herbicide used on row crops
Contaminant	Measure	MCL	MCLG	Year of Collection	Highest / Average Level Detected	Range of Levels Detected	Violation	Likely Sources of Contaminant
Bis(2-Ethylhexyl) phthalate	ppb	6	6	2017	1.2	0.0-1.2	No	Discharge from rubber and chemical factories.
Barium	ppm	2	2	2017	0.077	0.055-0.077	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	ppb	100	100	2017	1.60	0.00-1.60	No	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide	ppb	200	200	2017	57.0	0.00-57.0	No	Discharge from plastic and fertilizer factories; discharge from steel/metal factories
Bromate	ppb	10	0	2017	1.89	0.0-13.0	No	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	2017	11.2	3.0-22.2	No	By-product of drinking water disinfection
Total Trihalomethanes	ppb	80	N/A	2017	17.1	1.41-28.1	No	By-product of drinking water disinfection
Turbidity ²	NTU	1.0	N/A	2017	0.6	N/A	No	Soil Runoff
		% of samples <0.3			99.8%		No	
Total Organic Carbon ³	ppm	Removal ratio of 1	N/A	N/A	N/A	N/A	No	Naturally occurring

Contaminant	Measure	MRDL	MRDLG	Year of Collection	Highest Level Detected	Range of Levels Detected	Violation	Likely Sources of Contaminant
Chloramines ⁴	ppm	4.0	4.0	2017	3.9	1.5-4.3	No	Water additive to control microbes

Contaminant	Measure	MCL	MCLG	Year of Collection	Highest Level Detected	Range of Levels Detected	Violation	Likely Sources of Contaminant
Total Coliform Bacteria	% of positive samples	5.0% of monthly samples are positive	0	2017	1.4	0.0-1.4	No	Coliforms are naturally present in the environment as well as feces; fecal coliform and E. coli only come from human and animal fecal waste
Fecal Coliform or E. Coli bacteria	% of positive samples	5.0% of monthly samples are positive	0	2017	0	0.0-0.0	No	Coliforms are naturally present in the environment as well as feces; fecal coliform and E. coli only come from human and animal fecal waste
Lead ⁵	ppb	Action Level of 15	15	2016	3.2	No sites over AL	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper ⁵	ppm	Action Level of 1.3	1.3	2016	0.6	No sites over AL	No	Corrosion of household plumbing systems; erosion of natural deposits

Unregulated Contaminants ⁶						
Contaminant	Unit	Range of Detections	Highest Level Detected	MCL	MCLG	Common Sources of Substance in Drinking Water
Chloral Hydrate	ppb	0.18 to 0.70	0.70	NR	0	By-product of drinking water disinfection
Bromoform	ppb	1.19 to 5.83	5.83	NR	0	
Bromodichloromethane	ppb	3.37 to 7.81	7.81	NR	0	
Chloroform	ppb	2.58 to 7.96	7.96	NR	0	
Dibromochloromethane	ppb	4.33 to 8.51	8.51	NR	0	
Dibromoacetic Acid	ppb	11.9 to 15.3	15.3	NR	0	By-product of drinking water disinfection; not regulated individually; included in Haloacetic Acids
Dichloroacetic Acid	ppb	4.70 to 8.60	8.60	NR	0	
Monobromoacetic Acid	ppb	1.60 to 3.10	3.10	NR	0	
Monochloroacetic Acid	ppb	0.0 to 0.0	0.0	NR	0	
Trichloroacetic Acid	ppb	0.0 to 1.60	1.60	NR	0	

Additional Parameters		
This chart lists other items for which the water is tested. These items do not relate to public health but rather to aesthetic effects. These items are often important to industrial users.		
Item	Measure	2017 Level
Bicarbonate	ppm	108 to 144
Calcium	ppm	37.4 to 50.6
Chloride	ppm	11.6 to 36.1
Conductivity	µmhos/cm	299 to 456
pH	units	7.8 to 8.6
Magnesium	ppm	2.69 to 7.78
Sodium	ppm	9.57 to 25.9
Sulfate	ppm	24.8 to 34.4
Total Alkalinity as CaCO3	ppm	108 to 145
Total Dissolved Solids	ppm	116 to 255
Total Hardness as CaCO3	ppm	113 to 157
Total Hardness in Grains	Grains/Gallon	7 to 9

- Because Fort Worth historically has had low levels of radionuclides in its water, TCEQ requires this monitoring occur only once every six years. The test results shown above are from 2017. The next monitoring will occur in 2023.
- 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. Fort Worth had a highest single result of 0.6 NTU. 99.8% of the turbidity readings were below 0.3 NTU.
- 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. A removal ratio of 1 in SUVA calculations is considered passing.
- MRDL and MRDLG are Maximum Residual Disinfection Level and Maximum Residual Disinfection Level Goal, respectively. The chloramine levels reported are quarterly averages.
- Fort Worth Water is on a reduced monitoring schedule for lead and copper and will perform testing again in 2019. The 2016 levels were calculated from the 90th percentile, which means that 90% of the samples were at or below this value. EPA considers the 90th percentile value the same as an "average"

- value for other contaminants. Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of the water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps.
- 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