

## 2016 ANNUAL DRINKING WATER QUALITY REPORT

TX1290021

### NORTH KAUFMAN WATER SUPPLY CORPORATION

Annual Water Quality Report for the period of January 1 to December 31, 2016. 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: Roy Perkins – General Manager Phone: (972)-962-7614

*Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en espanol, favor de llamar al telefono (972)-962-7614.*

North Kaufman WSC Board Meetings are held the third Monday of each month at 7 pm at 3891 N. Hwy. 34, Kaufman, TX.

North Kaufman WSC is a Purchased Surface Water

#### Sources of Drinking Water

The sources of drinking water (both tap 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 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 immunocompromised 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>.

#### 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 Watch at the following URL:  
<http://giss3.teeq.state.tx.us/swav/Controller/index.jsp?wtrsrc=>

Further details about your 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 City of Kaufman	CC from TX1290003 City of	SW	Active	Lake Lavon
SW from City of Terrell	CC from TX1290006 City of	SW	Active	Lake Lavon, Lake Tawakoni

## 2016 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)	90 <sup>th</sup> Percentile	# Sites Over AL	Units	Violation	Like Contamination Source
Copper	2016	1.3	1.3	0.51	1	ppm	N	Erosion of natural deposits; leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2016	0	15	1.7	01	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

### Water Quality Test Results

**Definitions:**

**Avg:**

The following tables contain scientific terms and measures, some of which may require explanation. Regulatory compliance with some MCLs are based on running annual average of monthly samples. 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.

**Level 1 Assessment:**

Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Max 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.

**Level 2 Assessment:**

A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**Water Quality Test Results (continued)**

<b>Max residual disinfectant level (MRDL):</b>	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.
<b>Max residual disinfectant level goal (MRDLG):</b>	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.
<b>MFL:</b>	Million fibers per liter (a measure of asbestos).
<b>Na:</b>	Not applicable.
<b>mrem:</b>	Millirems per year (a measure of radiation absorbed by the body).
<b>NTU:</b>	Nephelometric turbidity units (a measure of turbidity).
<b>pCi/L:</b>	Picocuries per liter or parts per billion or one ounce in 7,350,000 gallons of water.
<b>ppm:</b>	Milligrams per liter or parts per million or one ounce in 7,350 gallons of water.
<b>Treatment Technique or TT:</b>	A required process intended to reduce the level of a contaminant in drinking water.
<b>ppt:</b>	Parts per trillion, or nanograms per liter (ng/L).
<b>ppq:</b>	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 Contamination Source
Halocetic Acids (HAA5)	2016	17	12.6-22.8	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2016	29	16.6-37.5	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)	2016	0.29	0.29-.029	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

### Violations Table

#### Lead and Copper Rule

The Lead and Copper Rule protects public health by minimizing lead and copper levels in drinking water, primarily by reducing water corrosiveness. Lead and copper enter drinking water mainly from corrosion of lead and copper containing plumbing materials.

Violation Type	Violation Begin	Violation End	Violation Explanation
Follow-up or Routine Tap M/R (LCR)	10/1/2015	9/28/2016	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water for the period indicated.

# City of Kaufman's Consumer Confidence Report For Year 2016

## Coliform Bacteria

Maximum Contaminant Level Goal	0	Total Coliform Maximum Contaminant Level	1 positive monthly sample	Highest No. of Positive	0	Fecal Coliform or E. Coli Maximum Contaminant Level	0	Total No. of Positive E. Coli or Fecal Coliform Samples	0	Violation	No	Likely Source of Contamination	Naturally present in the environment
--------------------------------	---	--	---------------------------	-------------------------	---	---	---	---	---	-----------	----	--------------------------------	--------------------------------------

NOTE: Reported monthly tests found no fecal coliform bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

## Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Haloacetic Acids (HAA5)	2016	16.9	9.2-17.5	No goal for the total	60	ppb	No	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2016	44.2	1.1-46.3	No goal for the total	80	ppb	No	By-product of drinking water disinfection.
Bromate	2016	6	0.0 - 6.0	5	10	ppb	No	By-product of drinking water ozonation.
NOTE: Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.								
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Antimony	2016	Levels lower than detect level	0 - 0	6	6	ppb	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic	2016	0.9	0.0 - 0.9	0	10	ppb	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2016	0.061	0.042 - 0.061	2	2	ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Beryllium	2016	Levels lower than detect level	0 - 0	4	4	ppb	No	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium	2016	Levels lower than detect level	0 - 0	5	5	ppb	No	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Chromium	2016	1.2	0.52 - 1.20	100	100	ppb	No	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	2016	0.93	0.13 - 0.93	4	4	ppm	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Mercury	2016	Levels lower than detect level	0 - 0	2	2	ppb	No	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Nitrate (measured as Nitrogen)	2016	0.79	0.05 - 0.79	10	10	ppm	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
Selenium	2016	3.4	1.4 - 3.4	50	50	ppb	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Thallium	2016	Levels lower than detect level	0 - 0	0.5	2	ppb	No	Discharge from electronics, glass, and leaching from ore-processing sites; drug factories.
NITRATE ADVISORY: 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.								
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	5/2/2016	5.6	5.6 - 5.6	0	50	PC/IL	No	Decay of natural and man-made deposits.
Gross alpha excluding radon and uranium	5/2/2016	Levels lower than detect level	0 - 0	0	15	PC/IL	No	Erosion of natural deposits.
Radium	5/2/2016	Levels lower than detect level	0 - 0	0	5	PC/IL	No	Erosion of natural deposits.

Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
2, 4, 5 - TP (Silvex)	2016	Levels lower than detect level	0 - 0	50	50	ppb	No	Residue of banned herbicide.
2, 4 - D	2016	Levels lower than detect level	0 - 0	70	70	ppb	No	Runoff from herbicide used on row crops.
Alachlor	2016	Levels lower than detect level	0 - 0	0	2	ppb	No	Runoff from herbicide used on row crops.
Altrazine	2016	0.61	0.31 - 0.61	3	3	ppb	No	Runoff from herbicide used on row crops.
Benzo (a) pyrene	2016	Levels lower than detect level	0 - 0	0	200	ppt	No	Leaching from linings of water storage tanks and distribution lines.
Carbofuran	2016	Levels lower than detect level	0 - 0	40	40	ppb	No	Leaching of soil fumigant used on rice and alfalfa.
Chlordane	2016	Levels lower than detect level	0 - 0	0	2	ppb	No	Residue of banned termiticide.
Dalapon	2016	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff from herbicide used on rights of way.
Di (2-ethylhexyl) adipate	2016	Levels lower than detect level	0 - 0	400	400	ppb	No	Discharge from chemical factories.
Di (2-ethylhexyl) phthalate	2016	Levels lower than detect level	0 - 0	0	6	ppb	No	Discharge from rubber and chemical factories.
Dibromochloropropane (DBCP)	2016	Levels lower than detect level	0 - 0	0	0	ppt	No	Runoff / leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Dinoseb	2016	Levels lower than detect level	0 - 0	7	7	ppb	No	Runoff from herbicide used on soybeans and vegetables.
Endrin	2016	Levels lower than detect level	0 - 0	2	2	ppb	No	Residue of banned insecticide.
Ethylene dibromide	2016	Levels lower than detect level	0 - 0	0	50	ppt	No	Discharge from petroleum refineries.
Heptachlor	2016	Levels lower than detect level	0 - 0	0	400	ppt	No	Residue of banned termiticide.
Heptachlor epoxide	2016	Levels lower than detect level	0 - 0	0	200	ppt	No	Breakdown of heptachlor.
Hexachlorobenzene	2016	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from metal refineries and agricultural chemical factories.
Hexachlorocyclopentadiene	2016	Levels lower than detect level	0 - 0	50	50	ppb	No	Discharge from chemical factories.
Lindane	2016	Levels lower than detect level	0 - 0	200	200	ppt	No	Runoff / leaching from insecticide used on cattle, lumber, and gardens.
Methoxychlor	2016	Levels lower than detect level	0 - 0	40	40	ppb	No	Runoff / leaching from insecticide used on fruits, vegetables, alfalfa, and livestock.
Oxamyl [Vydate]	2016	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff / leaching from insecticide used on apples, potatoes, and tomatoes.
Pentachlorophenol	2016	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from wood preserving factories.
Simazine	2016	Levels lower than detect level	0 - 0	4	4	ppb	No	Herbicide runoff.
Toxaphene	2016	Levels lower than detect level	0 - 0	0	3	ppb	No	Runoff / leaching from insecticide used on cotton and cattle.

Volatile Organic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
1, 1, 1 - Trichloroethane	2016	Levels lower than detect level	0 - 0	200	200	ppb	No	Discharge from metal degreasing sites and other factories.
1, 1, 2 - Trichloroethane	2016	Levels lower than detect level	0 - 0	3	5	ppb	No	Discharge from industrial chemical factories.
1, 1 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	7	7	ppb	No	Discharge from industrial chemical factories.
1, 2, 4 - Trichlorobenzene	2016	Levels lower than detect level	0 - 0	70	70	ppb	No	Discharge from textile-finishing factories.
1, 2 - Dichloroethane	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
1, 2 - Dichloropropane	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
Benzene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories; leaching from gas storage tanks and landfills.
Carbon Tetrachloride	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories; leaching from gas storage tanks and landfills.
Chlorobenzene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from chemical plants and other industrial activities.
Dichloromethane	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from chemical and agricultural chemical factories.
Ethylbenzene	2016	Levels lower than detect level	0 - 0	0	700	ppb	No	Discharge from pharmaceutical and chemical factories.
Styrene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from rubber and plastic factories; leaching from landfills.
Tetrachloroethylene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories and dry cleaners.
Toluene	2016	Levels lower than detect level	0 - 0	1	1	ppm	No	Discharge from petroleum factories.
Trichloroethylene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from metal degreasing sites and other factories.
Vinyl Chloride	2016	Levels lower than detect level	0 - 0	0	2	ppb	No	Leaching from PVC piping; discharge from plastics factories.
Xylenes	2016	Levels lower than detect level	0 - 0	10	10	ppm	No	Discharge from petroleum factories; discharge from chemical factories.
cis - 1, 2 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	70	70	ppb	No	Discharge from industrial chemical factories.
o - Dichlorobenzene	2016	Levels lower than detect level	0 - 0	600	600	ppb	No	Discharge from industrial chemical factories.
p - Dichlorobenzene	2016	Levels lower than detect level	0 - 0	75	75	ppb	No	Discharge from industrial chemical factories.
trans - 1, 2 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from industrial chemical factories.

### Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.78	No	Soil runoff
Lowest monthly percentage (%) meeting limit	0.3 NTU	96.20%	No	Soil runoff

NOTE: Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration.

### Maximum Residual Disinfectant Level

Chemical Used	Year	Average Level of Quarterly Data	Lowest Result of Single Sample	Highest Result of Single Sample	MRDL	MRDLG	Units	Source of Chemical
Chlorine Residual	2016	2.61	1.4	2.82	4.0	<4.0	ppm	Disinfectant used to control microbes
Chlorine Dioxide	2016	0	0	0	0.8	0.8	ppm	Disinfectant
Chlorite	2016	0	0	0.115	1.0	N/A	ppm	Disinfectant



### Total Organic Carbon

Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Source Water 2016	4.23	3.14 - 4.23	ppm	Naturally present in the environment
Drinking Water 2016	2.8	1.37 - 2.80	ppm	Naturally present in the environment
Removal Ratio 2016	63.9%	25.7 - 63.9	% removal *	N/A

**NOTE:** Total organic carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. By-products of disinfection include trihalomethanes (THMs) and haloacetic acids (HAA) which are reported elsewhere in this report.  
 \* Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

### Lead and Copper

Contaminant	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Violation	Likely Source of Contamination	
Lead and Copper	Sampled 2016	Action Level (AL) 1.3	90th Percentile 2.208	# Stress Over 0	AL ppm	No	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.
Copper	2016	1.3	2.208	0	ppm	No	Corrosion of household plumbing systems; erosion of natural deposits.

**ADDITIONAL HEALTH INFORMATION FOR LEAD:** 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 of Kaufman) 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 <http://www.epa.gov/safewater/lead>.

### Cryptosporidium And Giardia

Contaminant	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Cryptosporidium	2016	0	0 - 0	(Oo) Cysts/L	Human and animal fecal waste.
Giardia	2016	0	0 - 0	(Oo) Cysts/L	Human and animal fecal waste.

### Unregulated Contaminants

Contaminant	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Chloroform	2016	24.8	8.8-47.7	ppb	By-product of drinking water disinfection.
Bromoform	2016	<1.00	<1.0-1.2	ppb	By-product of drinking water disinfection.
Bromodichloromethane	2016	10.2	11-17.5	ppb	By-product of drinking water disinfection.
Dibromochloromethane	2016	4.94	5.7-10.1	ppb	By-product of drinking water disinfection.

**NOTE:** Bromoform, chloroform, dichlorobromomethane, and dibromochloromethane are disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point to distribution.

### Secondary and Other Constituents Not Regulated (No associated adverse health effects)

Contaminant	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Calcium	2016	85.2	30.7 - 85.2	ppm	Abundant naturally occurring element.
Chloride	2016	70.3	15.2 - 70.3	ppm	Abundant naturally occurring element. used in water purification; by-product of oil field activity.
Hardness as CaMg	2016	238	159 - 238	ppm	Naturally occurring calcium and magnesium.
Iron	2016	0.02	0.00 - 0.02	ppm	Erosion of natural deposits. Iron or steel water delivery equipment or facilities.
Magnesium	2016	6.65	5.85 - 6.65	ppm	Abundant naturally occurring element.
Manganese	2016	0.017	0.0005 - 0.017	ppm	Abundant naturally occurring element.
Nickel	2016	0.0041	0.0025 - 0.0041	ppm	Erosion of natural deposits.
pH	2016	9.00	7.1 - 9.0	units	Measure of corrosivity of water.
Sodium	2016	77.4	26.8 - 77.4	ppm	Erosion of natural deposits; by-product of oil field activity.
Sulfate	2016	144	69 - 144	ppm	Naturally occurring; common industrial by-product; by-product of oil field activity.
Total Alkalinity as CaCO3	2016	117	60 - 117	ppm	Naturally occurring soluble mineral salts.
Total Dissolved Solids	2016	566	194 - 566	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO3	2016	268	80 - 268	ppm	Naturally occurring calcium.
Zinc	2016	0.013	0.000 - 0.013	ppm	Moderately abundant naturally occurring element used in the metal industry.

# North Texas Municipal Water District Tawakoni WTP Consumer Confidence Report For Year 2016

## Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive Coliform Samples	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive Fecal Coliform Samples	Violation	Likely Source of Contamination
0	5%	Cust. #	Cust. #	Cust. #	No	Naturally present in the environment.

**NOTE:** Reported monthly tests found no fecal coliform bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

## Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Haloacetic Acids (HAA5)	2016	Cust. #	Cust. #	No goal for the total	60	ppb	No	By-product of drinking water chlorination.
Total Trihalomethanes (THM)	2016	Cust. #	Cust. #	23.8	80	ppb	No	By-product of drinking water chlorination.
Bromate	2016	Cust. #	Cust. #	5	10	ppb	No	By-product of drinking water ozonation.

**NOTE:** Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Antimony	2016	Levels lower than detect level	0 - 0	6	6	ppb	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic	2016	Levels lower than detect level	0 - 0	0	10	ppb	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2016	0.056	0.056 - 0.056	2	2	ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Beryllium	2016	Levels lower than detect level	0 - 0	4	4	ppb	No	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium	2016	Levels lower than detect level	0 - 0	5	5	ppb	No	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Chromium	2016	0.89	0 - 0.89	100	100	ppb	No	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	2016	0.36	0 - 0.36	4	4	ppm	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Mercury	2016	Levels lower than detect level	0 - 0	2	2	ppb	No	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Nitrate (measured as Nitrogen)	2016	0.546	0.278 - 0.546	10	10	ppm	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.

**Nitrate Advisory:** 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.

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	5/28/2015	Levels lower than detect level	0 - 0	0	4	mrem/yr	No	Decay of natural and man-made deposits.
Gross alpha excluding radon and uranium	5/28/2015	Levels lower than detect level	0 - 0	0	15	pCi/L	No	Erosion of natural deposits.
Radium-228	5/28/2015	Levels lower than detect level	0 - 0	0	5	pCi/L	No	Erosion of natural deposits.

Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
2, 4, 5 - TP (Sivex)	2015	Levels lower than detect level	0 - 0	50	50	ppb	No	Residue of banned herbicide.

2, 4 - D	2015	Levels lower than detect level	0 - 0	70	70	ppb	No	Runoff from herbicide used on row crops.
Alachlor	2015	Levels lower than detect level	0 - 0	0	2	ppb	No	Runoff from herbicide used on row crops.
Atrazine	2015	Levels lower than detect level	.12-.12	3	3	ppb	No	Runoff from herbicide used on row crops.
Benzo (a) pyrene	2015	Levels lower than detect level	0 - 0	0	200	ppt	No	Leaching from linings of water storage tanks and distribution lines.
Carbofuran	2015	Levels lower than detect level	0 - 0	40	40	ppb	No	Leaching of soil fumigant used on rice and alfalfa.
Chlordane	2015	Levels lower than detect level	0 - 0	0	2	ppb	No	Residue of banned termiticide.
Dalapon	2015	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff from herbicide used on rights of way.
Di (2-ethylhexyl) adipate	2015	Levels lower than detect level	0 - 0	400	400	ppb	No	Discharge from chemical factories.
Di (2-ethylhexyl) phthalate	2015	Levels lower than detect level	0 - 0	0	6	ppb	No	Discharge from rubber and chemical factories.
Dibromochloropropane (DBCP)	2015	Levels lower than detect level	0 - 0	0	0	ppt	No	Runoff / leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Dinoseb	2015	Levels lower than detect level	0 - 0	7	7	ppb	No	Runoff from herbicide used on soybeans and vegetables.
Endrin	2015	Levels lower than detect level	0 - 0	2	2	ppb	No	Residue of banned insecticide.
Ethylene dibromide	2015	Levels lower than detect level	0 - 0	0	50	ppt	No	Discharge from petroleum refineries.
Heptachlor	2015	Levels lower than detect level	0 - 0	0	400	ppt	No	Residue of banned termiticide.
Heptachlor epoxide	2015	Levels lower than detect level	0 - 0	0	200	ppt	No	Breakdown of heptachlor.
Hexachlorobenzene	2015	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from metal refineries and agricultural chemical factories.
Hexachlorocyclopentadiene	2015	Levels lower than detect level	0 - 0	50	50	ppb	No	Discharge from chemical factories.
Lindane	2015	Levels lower than detect level	0 - 0	200	200	ppt	No	Runoff / leaching from insecticide used on cattle, lumber, and gardens.
Methoxychlor	2015	Levels lower than detect level	0 - 0	40	40	ppb	No	Runoff / leaching from insecticide used on fruits, vegetables, alfalfa, and livestock.
Oxamyl [Vydate]	2015	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff / leaching from insecticide used on apples, potatoes, and tomatoes.
Pentachlorophenol	2015	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from wood preserving factories.
Simazine	2015	Levels lower than detect level	0 - 0	4	4	ppb	No	Herbicide runoff.
Toxaphene	2015	Levels lower than detect level	0 - 0	0	3	ppb	No	Runoff / leaching from insecticide used on cotton and cattle.
<b>Volatile Organic Contaminants</b>	<b>Collection Date</b>	<b>Highest Level Detected</b>	<b>Range of Levels Detected</b>	<b>MCLG</b>	<b>MCL</b>	<b>Units</b>	<b>Violation</b>	<b>Likely Source of Contamination</b>
1, 1, 1 - Trichloroethane	2016	Levels lower than detect level	0 - 0	200	200	ppb	No	Discharge from metal degreasing sites and other factories.
1, 1, 2 - Trichloroethane	2016	Levels lower than detect level	0 - 0	3	5	ppb	No	Discharge from industrial chemical factories.
1, 1 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	7	7	ppb	No	Discharge from industrial chemical factories.
1, 2, 4 - Trichlorobenzene	2016	Levels lower than detect level	0 - 0	70	70	ppb	No	Discharge from textile-finishing factories.
1, 2 - Dichloroethane	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
1, 2 - Dichloropropane	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
Benzene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories, leaching from gas storage tanks and landfills.
Carbon Tetrachloride	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from chemical plants and other industrial activities.

Chlorobenzene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from chemical and agricultural chemical factories.
Dichloromethane	2012	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from pharmaceutical and chemical factories.
Ethylbenzene	2016	Levels lower than detect level	0 - 0	0	700	ppb	No	Discharge from petroleum refineries.
Styrene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from rubber and plastic factories; leaching from landfills.
Tetrachloroethylene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories and dry cleaners.
Toluene	2016	Levels lower than detect level	0 - 0	1	1	ppm	No	Discharge from petroleum factories.
Trichloroethylene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from metal degreasing sites and other factories.
Vinyl Chloride	2016	Levels lower than detect level	0 - 0	0	2	ppb	No	Leaching from PVC piping; discharge from plastics factories.
Xylenes	2016	Levels lower than detect level	0 - 0	10	10	ppm	No	Discharge from petroleum factories; discharge from chemical factories.
cis - 1, 2 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	70	70	ppb	No	Discharge from industrial chemical factories.
o - Dichlorobenzene	2016	Levels lower than detect level	0 - 0	600	600	ppb	No	Discharge from industrial chemical factories.
p - Dichlorobenzene	2016	Levels lower than detect level	0 - 0	75	75	ppb	No	Discharge from industrial chemical factories.
trans - 1, 2 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from industrial chemical factories.

### Turbidity

Highest single measurement	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Lowest monthly percentage (%) meeting limit	1 NTU	0.13	No	Soil runoff.
	0.3 NTU	100.00%	No	Soil runoff.

**NOTE:** 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.

### Maximum Residual Disinfectant Level

Disinfectant Type	Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Units	Source of Chemical
Chlorine Residual (Chloramines)	2016	Cust. #	Cust. #	Cust. #	4.0	<4.0	ppm	Disinfectant used to control microbes.
Chlorine Dioxide	2016	0.005	0	0.23	0.8	0.8	ppm	Disinfectant.
Chlorite	2016	0.02	0	0.08	1.0	N/A	ppm	Disinfectant.

### Total Organic Carbon

Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Source Water	2016	6.08	4.93-6.08 ppm	Naturally present in the environment.
Drinking Water	2016	2.74	1.80-2.74 ppm	Naturally present in the environment.
Removal Ratio	2016	69.0%	48.5-69.0% % removal *	N/A

**NOTE:** Total organic carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. By-products of disinfection include trihalomethanes (THMs) and haloacetic acids (HAA) which are reported elsewhere in this report.

\* Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

### Lead and Copper

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Likely Source of Contamination
Lead	2016	Levels lower than detect level	Levels lower than detect level	0.015	0.015	ppm	Corrosion of customer plumbing. Action Level = .015
Copper	2016	0.059	0 - 0.059	1.3	1.3	ppm	By-product of drinking water disinfection. Action Level = 1.3

**ADDITIONAL HEALTH INFORMATION FOR LEAD:** 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 NTMWD 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 <http://www.epa.gov/safewater/lead>.

### Unregulated Contaminants

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Chloroform	2016	14.4	14.4 - 14.4	ppb	By-product of drinking water disinfection.
Bromoform	2016	Levels lower than detect level	Levels lower than	ppb	By-product of drinking water disinfection.
Bromodichloromethane	2016	6.42	6.42 - 6.42	ppb	By-product of drinking water disinfection.
Dibromochloromethane	2016	2.98	2.98 - 2.98	ppb	By-product of drinking water disinfection.

**NOTE:** Bromoform, chloroform, dichlorodibromomethane, and dibromochloromethane are disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point to distribution.

### Secondary and Other Constituents Not Regulated

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Bicarbonate	2016	62.9	62.9 - 62.9	ppm	Corrosion of carbonate rocks such as limestone.
Calcium	2016	56.5	35.6 - 56.5	ppm	Abundant naturally occurring element.
Chloride	2016	13.4	8.54 - 13.4	ppm	Abundant naturally occurring element, used in water purification, by-product of oil field activity.
Hardness as Ca/Mg	2016	78.6	52.1 - 78.6	ppm	Naturally occurring calcium and magnesium.
Iron	2016	0.0388	0.0388 - 0.0388	ppm	Erosion of natural deposits, iron or steel water delivery equipment or facilities.
Magnesium	2016	3.17	2.21 - 3.17	ppm	Abundant naturally occurring element.
Manganese	2016	0.023	0.004 - 0.023	ppm	Abundant naturally occurring element.
Nickel	2016	0.004	0.002 - 0.004	ppm	Erosion of natural deposits.
pH	2016	8.20	7.4 - 8.2	units	Measure of corrosivity of water.
Sodium	2016	15.6	11.0 - 15.6	ppm	Erosion of natural deposits, by-product of oil field activity.
Sulfate	2016	78.5	57.1 - 78.5	ppm	Naturally occurring, common industrial by-product, by-product of oil field activity.
Total Alkalinity as CaCO3	2016	71	55.3 - 71.0	ppm	Naturally occurring, soluble mineral salts.
Total Dissolved Solids	2016	220	150 - 220	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO3	2016	149	97.9 - 149.0	ppm	Naturally occurring calcium.
Zinc	2016	0.006	0 - 0.006	ppm	Moderately abundant naturally occurring element used in the metal industry.

### Crypto/Giardia

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Cryptosporidia	2016	0	0	(OO)/cyst/L	Naturally occurring in the environment
Giardia	2016	0	0	(OO)/cyst/L	Naturally occurring in the environment

**NOTE:** Crypto/Giardia measured in the raw water.