UNREGULATED CONTAMINANTS – CITY OF FORT WORTH SAMPLING

Contaminant	Measure	Range	2015 Level	MCL	MCLG	Common Source of Substance
Chloral Hydrate	ppb	0.30 to 0.67	0.67	Not regulated	None	By-product of drinking water disinfection
Bromoform	ppb	1.5 to 9.9	9.9	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
Bromodichloromethane	ppb	2.6 to 8.9	8.9	Not regulated	None	
Chloroform	ppb	2.8 to 15.2	15.2	Not regulated	None	
Dibromochloromethane	ppb	1.9 to 9.0	9.0	Not regulated	None	
Monochloroacetic Acid	ppb	2.0 to 5.0	5.0	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Haloacetic Acids
Dichloroacetic Acid	ppb	7.3 to 9.3	9.3	Not regulated	None	
Trichloroacetic Acid	ppb	1.2 to 6.8	6.8	Not regulated	None	
Monobromoacetic Acid	ppb	0 to 2.4	2.4	Not regulated	None	
Dibromoacetic Acid	ppb	0 to 3.8	3.8	Not regulated	None	

UNREGULATED CONTAMINANTS – CITY OF KELLER SAMPLING

Contaminant	Measure	Range	2015 Level	MCL	MCLG	Common Source of Substance
Bromoform	ppb	0 to 1.45	1.45	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
Bromodichloromethane	ppb	1.94 to 11.7	11.7	Not regulated	None	
Chloroform	ppb	1.4 to 11.3	11.3	Not regulated	None	
Dibromochloromethane	ppb	2.0 to 7.81	7.81	Not regulated	None	
Monochloroacetic Acid	ppb	2.7 to 5.1	5.1	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Haloacetic Acids
Dichloroacetic Acid	ppb	3.3 to 12.9	12.9	Not regulated	None	
Trichloroacetic Acid	ppb	1.1 to 1.3	1.3	Not regulated	None	
Monobromoacetic Acid	ppb	0 to 0	0	Not regulated	None	
Dibromoacetic Acid	ppb	0 to 0	0	Not regulated	None	

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. Any unregulated contaminants detected are reported in the following table. For additional information and data visit http://water.epa.gov/drink/index.cfm, or call the Safe Drinking Water Hotline at (800) 426-4791.

SECONDARY CONSTITUENTS-CITY OF FORT WORTH SAMPLING

Contaminant	Measure	2015 Range
Bicarbonate	ppm	96.4 to 120
Calcium	ppm	33.3 to 42.1
Chloride	ppm	12.5 to 25.9
Conductivity	umhos/cm	333 to 427
pH	units	8.0 to 8.2
Magnesium	ppm	3.55 to 6.79
Sodium	ppm	12.3 to 28.5
Sulfate	ppm	20.2 to 29.0
Total Alkalinity as CaCO3	ppm	96.4 to 120
Total Dissolved Solids	ppm	163 to 234
Total Hardness as CaCO3	ppm	101 to 133
Total Hardness in Grains	grains/gallon	6 to 8

Secondary constituents are items that do not relate to public health but rather to the aesthetic effects. These items are often important to industrial users.

MICROORGANISM TESTING SHOWS LOW DETECTIONS IN RAW WATER

Tarrant Regional Water District (TRWD) 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 2015 sampling showed low level detections of *Cryptosporidium, 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. Presence in raw water does not mean presence in the finished water. Treatment processes are designed to kill or remove these contaminants. Viruses are treated through disinfection processes. *Cryptosporidium* and *Giardia Lamblia* are removed through a combination of disinfection and/or filtration.

Intake Location	Cryptosporidium	Giardia Lamblia	Adenovirus	Enterovirus	Astrovirus	Rotavirus
Richland-Chambers Reservoir	Not detected	Not detected	January	Not detected	Not detected	Not detected
Cedar Creek Lake	Not detected	Not detected	January & March	Not detected	Not detected	Not detected
Lake Benbrook	Not detected	Not detected	January & March	Not detected	Not detected	Not detected
Eagle Mountain Lake	June	June	January	September	Not detected	Not detected
Lake Worth	Not detected	Not detected	January & March	Not detected	Not detected	Not detected
Clearfork of Trinity River	Not detected	June	January & March	Not detected	Not detected	Not detected

ALLEGED VIOLATION(S) ASSOCIATED TO A NOTICE OF VIOLATION

In August 2015, the City of Keller was investigated by the Texas Commission on Environmental Quality for alleged violations related to City's Cross Connection Control Program. Two alleged violations were noted: 1) failure to install a proper backflow prevention assembly at a location where one is required to provide protection against a health hazard; 2) failure to have an effective cross connection program. The alleged violations were resolved in December 2015. The City of Keller re-evaluated its Cross Connection Control Program and made necessary improvements to ensure compliance is achieved.

2015 WATER LOSS AUDIT

The City of Keller's Water Conservation Plan addresses several measures in reducing water loss and improving the efficiency in the use of water. In the water loss audit submitted to the Texas Water Development Board for the time period of Jan-Dec 2015, the system lost an estimated 81,560,182 gallons of water from the 2,778,921,561 gallons of water purchased. Leaks, line breaks, unmetered fire protection, hydrant flushing for health and safety purposes, unauthorized consumption, data discrepancies, and other factors all contribute to water loss. The City will continue to audit its water supply and implement water conservation controls to minimize system losses.

TWICE PER WEEK WATERING ALWAYS IN EFFECT

Maximum twice per week watering and prohibition on watering any day between 10 a.m. and 6 p.m. is a year-round water conservation measure. Under the Water Conservation Plan, residential addresses ending in an even number (0, 2, 4, 6, or 8) may water on Wednesdays and Saturdays. Residential addresses ending in an odd number (1, 3, 5, 7 or 9) may water on Thursdays and Sundays. All non-residential locations (apartment complexes, businesses, industries, parks, medians, etc.) may water on Tuesdays and Fridays. No watering on Mondays.

WATER CONSERVATION TIPS

Conserving water inside your home:

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets, and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Turn off water while saving or brushing teeth.
- Soak dishes before washing.

Conserving water outdoors:

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water-saving nozzles.
- Use water from a bucket to wash your car; save the hose rinsing.

STORMWATER QUALITY

Stormwater is water that originates during precipitation events and snow/ice melt. Stormwater can pick up dirt, debris, and other contaminants and carry the pollutants to streams, creeks, and lakes. The major contribution of pollution to local watersheds is caused by stormwater runoff from urbanized areas.

Stormwater Pollution Prevention Measures:

- Pick up after your pet.
- Never fertilize your lawn before rain event.
- Use organic lawn care methods.
- Do not blow grass clippings, leaves, or other yard waste to streets or storm drains; mulch lawn clippings and leafs and leave it on the lawn.
- Do not wash your vehicle on paved surface; wash it on the grass or in designated commercial car wash.
- Recycle household paint, motor oil, antifreeze, tires, and batteries.
- Do not overwater your lawn to prevent the excess water runoff.
- Report littering/illegal dumping to your local authority (City Hall).

Please call our office (817-743-4080) if you have questions. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

2015 Annual Drinking Water Quality Report
CITY OF KELLER
Public Water System # 2200096

This report is a summary of the quality of the water provided to Keller customers. The analysis was made by using the data from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in the attached pages. This information helps you become more knowledgeable about what's in your drinking water. Keller's constant goal is to provide you with safe and dependable supply of drinking water. If you have any questions about this report or concerning your water utility, please contact Oleksandra Bikman at 817-743-4092 or Randy Worthen at 817-743-4218.

En Español: Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en español, por favor de llamar al telefono (817) 743-4200.

Public Participation Opportunities: Keller City Council Meetings are held on the first and third Tuesday of each month. Meetings generally start with a Pre-Council meeting at 5 p.m. followed by the regular City Council meeting at 7 p.m. All Keller City Council meetings are open to the public. For scheduling and information, call 817-743-4007 or email townhall@cityofkeller.com.

The City of Keller purchases its water from the City of Fort Worth. 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 (TRWD).

The Texas Commission on Environmental Quality completed an assessment of Fort Worth's source waters. TCEQ classified the risk to these source waters as high for most contaminants. High susceptibility means there are activities near the sources of water and/or watersheds 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 about our sources of water, please refer to the Source Water Assessment Viewer available at **https://www.tceq.texas.gov/gis/swaview**. Further details about sources of water and source-water assessments are available online in TCEQ's Texas Drinking Water Watch at **http://dww2.tceq.texas.gov/DWW/**.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. 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 might have 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 byproducts 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 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 that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

ABBREVIATIONS AND DEFINITIONS

NTU	Nephelometric Turbidity Units (a measure of water turbidity or clarity)
pCi/L	picocuries per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/L)
ppb	parts per billion, or micrograms per liter (µg/L)
umhos/cm	micromhos per centimeter
grains/gallon	unit of water hardness
N/A	not applicable

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

Maximum Contaminant Level (MCL): The highest permissible level of a contaminant in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) The highest level of 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 (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 contamination.

Minimum Report Level (MRL): The lowest concentration of a contaminant that can be measured by a laboratory.

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

The City of Keller routinely monitors for constituents in your drinking water according to Federal and State laws. The following pages show results of our monitoring for the period of January 1st to December 31st, 2015.

LIST OF REGULATED CONTAMINANTS – CITY OF FORT WORTH SAMPLING

Contaminant	Measure	MCL	2015 Level	Range	MCLG	Common Source of Substance
Gross Beta Particles & photon emitters	pCi/L	50	5.6	4 to 5.6	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
Radium 226/228	pCi/L	5	1	1 to 1	0	Erosion of natural deposits
Arsenic	ppb	10	1.70	0.96 to 1.70	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronic production wastes
Antimony	ppb	6	0.21	0 to 0.21	6	Discharge from petroleum refineries, fire retardants, ceramics, electronics, solder, test addition
Barium	ppm	2	0.07	0.05 to 0.07	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (Total)	ppb	100	1	0.87 to 1	100	Discharge from steel and pulp mills, erosion of natural deposits
Cyanide	ppb	200	145	13.4 to 145	200	Discharge from plastic and fertilizer factories; discharge from steel and metal factories
Fluoride	ppm	4	0.56	0.12 to 0.56	4	Water additive, which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	ppm	10	0.67	0.2 to 0.67	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	1	0.04	0 to 0.04	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Bromate	ppb	10	6.22	0 to 6.22	0	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	15.6	8.8 to 15.6	N/A	By-product of drinking water disinfection
Total Trihalomethanes	ppb	80	27.8	12.4 to 27.8	N/A	By-product of drinking water disinfection

Contaminant	High	Low	Average	MCL	MCLG	Common Source of Substance
Total Organic Carbon	1	1	1	TT = % removal	N/A	Naturally occurring
Total Organic Carbon is used to determine disinfection byproduct precursors.						

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.

Contaminant	Measure	MCL	2015 Highest single result	Lowest monthly % of samples ≤ 0.3 NTU	MCLG	Common Source of Substance
Turbidity	NTU	TT	0.50	98.9%	N/A	Soil runoff
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.						

LIST OF REGULATED CONTAMINANTS – CITY OF KELLER SAMPLING

Contaminant	Measure	MCL	2015 Level	Range	MCLG	Volation	Common Source of Substance
Nitrate (measured as Nitrogen)	ppm	10	0.41	0 to 0.41	10	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	1	0.5	0 to 0.5	1	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Disinfectant	Measure	MRDL	2015 Average Level	2015 Lowest Level	2015 Highest Level	Range	MRDLG	Common Source of Substance
Chloramines	ppm	4	2.62	0.8	3.4	0.8 to 3.4	4	Water additive used to control microbes

Disinfectant By-Product	Measure	MCL	2015 Level	Range	MCLG	Violation	Common Source of Substance
Haloacetic Acids	ppb	60	14.2	3.6 to 14.2	N/A	N	By-product of drinking water disinfection
Total Trihalomethanes	ppb	80	32.3	5.9 to 32.3	N/A	N	By-product of drinking water disinfection

Contaminant	Date Sampled	Measure	Action Level (AL)	90th Percentile	# Sites Over AL	MCLG	Violation	Likely Source of Contaminant
Copper	2013	ppm	1.3	0.63	0	1.3	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead	2013	ppm	0.015	0	0	0	N	Corrosion of household plumbing systems; Erosion of natural deposits

Historically, Keller has had low lead and copper levels in its water, thus the TCEQ requires this monitoring to occur only every three years. The test results shown above are from 2013. The next monitoring will occur in 2016.
90th percentile value: 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 their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Keller's drinking water does not have elevated lead levels. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Keller 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 at the Safe Drinking Water Hotline or at **http://www.epa.gov/safewater/lead**.

TOTAL COLIFORMS – CITY OF FORT WORTH SAMPLING

Contaminant	Measure	MCL	2015 Level	Range	MCLG	Common Source of Substance
Total Coliforms (including fecal coliform & E. coli)	% positive samples	Presence in 5% or less of monthly samples	Presence in 2% of monthly samples	0 to 2%	0	Naturally present in the environment as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste

TOTAL COLIFORMS – CITY OF KELLER SAMPLING

Contaminant	Measure	MCL	2015 Level	Range	MCLG	Violation	Common Source of Substance
Total Coliforms (including fecal coliform & E. coli)	% positive samples	Presence in 5% or less of monthly samples	Presence in 2% of monthly samples	0 to 2%	0	N	Naturally present in the environment as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste

Total coliform bacteria are used as indicators of microbial contamination of drinking water because testing for them is easy. While not disease-causing organisms themselves, they are often found in association with other microbes that are capable of causing disease. Coliform bacteria are hardier than many disease-causing organisms; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption.