2014 Annual Drinking Water Quality Report

June 22, 2015

To: All Castle Hills Water Customers
From: Charles R. Brewer, Director of Public Works
Denton County FWSD No. 1-A

Please find attached the 2014 Annual Drinking Water Quality Report (Consumer Confidence Report "CCR") for water customers here within the Castle Hills Master Planned Community. This report is produced in order to provide you information about the Denton County FWSD No. 1-A water system, including the sources of water being distributed, the levels of detected contaminants, and compliance with drinking water rules. As shown within this report, the water here within Castle Hills **meets or exceeds** all State and Federal requirements for water quality, and is safe to drink.

The source of drinking water used by Denton County FWSD No. 1-A is purchased, surface treated waters from the City of Lewisville (COL) and from the Upper Trinity Regional Water District (UTRWD). All water customers west of FM 2281/Old Denton Road or north of Parker Road/FM 544 receive surface treated waters from the COL. All water customers south of Parker Road/FM 544, north of Hebron Parkway, east of FM 2281 and west of Josey Lane receive surface treated waters from the UTRWD.

If you have any questions or concerns with this 2014 Annual Drinking Water Quality Report or about the Denton County FWSD No. 1-A water distribution system, please feel free to call me directly at (972) 899-9752.

Consumer Confidence Report (CCR)

DENTON COUNTY F.W.S.D. #1-A CASTLE HILLS

PWS ID NUMBER: TX0610264 PWS NAME: DENTON COUNTY FWSD #1-A CASTLE HILLS PHONE NUMBER: (972) 899-9752

Annual Water Quality Report is for the period of January 1 to December 31, 2014

This report is intended to provide you with important information about your drinking water and the efforts made by your water system to provide safe drinking water. The source of drinking water used by DENTON COUNTY FWSD #1A CASTLE HILLS is Purchased Surface Water from both the City of Lewisville (PWS #TX0610004) and from the Upper Trinity Regional Water District (PWS #TX0610213). For more information regarding this report contact:

Name: Charles R. Brewer/Director of Public Works

Phone: (972) 899-9752

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en espanol, favor de llamar al telefono: (972) 899-9752.

Source 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.

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, order, 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.

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.

Denton County FWSD #1-A 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.

Information about Source Water Assessments

A Source Water 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.

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 (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 (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 (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 (MRDLG):	The level of a drinking water disinfectant below which there is no know 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)
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 pictograms per liter (pg/L)

Water Loss

In the water loss audit submitted to the Texas Water Development Board for the time period of January 1, 2014 to December 31, 2014, Denton County FWSD No. 1-A's water system lost an estimated 10% of the system input volume. If you have any questions about the water loss audit, please call (972) 899-9752.

Disinfectant Residual

Type of Disinfectant	Year	Average Level of Disinfectant Residuals	Minimum Level of Disinfectant Residuals	Maximum Level of Disinfectant Residuals	MRDL	MRDLG	Units	Violation	Likely Source of Contaminations
Chloramines	2014	2.36	.50	4.30	4.0	4.0	ppm	N	Water additive to control microbes.

2014 Regulated Contaminants Detected

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 Contaminations
0	1 positive monthly sample	1	-	0	N	Naturally present in the environment.

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 Contaminations
Copper	2014	1.3	1.3	0.86	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2014	0	15	2.1	0	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Regulated Contaminants

Denton County FSWD #1-A Castle Hills (District); Upper Trinity River Regional Water Dist. (UTRWD); City of Lewisville (COL)

Disinfectants and Disinfections By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violations	Likely Source of Contaminations
Haloacetic Acids (HAA5) - District	2014	9	5.7 - 10.6	No goal for the total.	60	ppb	N	By-product of drinking water disinfection.
Haloacetic Acids (HAA5) – UTRWD	5/12/2014	39.0	2.5 – 39.0	No goal for the total.	60	ppb	N	By-product of drinking water disinfection.
Haloacetic Acids (HAA5) – COL/Dallas	2014	23.8	<1.0 – 23.8	N/A	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM) - District	5/12/2014	32	27.9 - 36.1	No goal for the total.	80	ppb	N	By-product of drinking water distribution.
Total Trihalomethanes (TTHM) - UTRWD	2014	73.0	21.0 – 73.0	No goal for the total.	80	ppb	N	By-product of drinking water distribution.
Total Trihalomethanes (TTHM) – COL/Dallas	2014	35.0	3.5 – 35.0	N/A	80	ppb	N	By-product of drinking water distribution.
Inorganic Contaminants	**Collection Date**	**Highest Level Detected**	**Range of Levels Detected**	**MCLG**	**MCL**	**Units**	**Violation**	**Likely Source of Contaminations**
Nitrate (measured as Nitrogen) – District	2014	1	0.612 – 1.18	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrate (measured as Nitrogen) – UTRWD	7/22/2014	0.88	0.31 – 0.88	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrate (measured as Nitrogen) – COL/Dallas	2014	1.62	0.42 – 1.62	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrite (measured as Nitrogen) - District	2014	0.352	0 – 0.352	1	1	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Arsenic – COL/Dallas	2014	1.51	0.98 – 1.51	10	0	ppb	N	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium – UTRWD	7/22/2014	0.051	0.046 – 0.051	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Barium – COL/Dallas	2014	39.9	16.0 – 39.9	2000	2000	ppb	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Bromate – UTRWD	4/4/2014	8.9	<1.0 – 8.9	10	0	ppb	N	Byproduct of drinking water disinfection.
Bromate – COL/Dallas	2014	<1.0	<0.003 - <1.0	10	0	ppb	N	By-product of drinking water disinfection.
Copper – UTRWD	4/22/2014	0.0076	0.0016 – 0.0076	1.3	1.3	ppm	N	Erosion of natural deposits, runoff from orchards; runoff from glass and electronics production waste.
Chloramines - UTRWD	12/2/2014	4.0	2.0 – 4.0	4.0	4.0	ppm	N	Water additive used to control microbes.
Chromium (Total) – COL/Dallas	2014	3.760	1.600 – 3.760	100	100	ppb	N	Discharge from steel and pulp mills; Erosion of natural deposits.
Cyanide – UTRWD	7/22/2014	11.2	<5.0 – 11.2	200	200	ppm	N	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
Cyanide – COL/Dallas	2014	0.1530	0.0503 – 0.1530	0.02	0.2	ppm	N	Discharge from steel/metal factories; discharge from plastic and fertilizer factories.
Fluoride – UTRWD	2014	0.335	0.186 – 0.335	4	4.0	ppm	N	Water additive; erosion of natural deposits; discharge from fertilizer and aluminum factories.
Fluoride – COL/Dallas	2014	0.64	0.4 – 0.64	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth.
Selenium – COL/Dallas	2014	3.81	2.00 – 3.81	50	50	ppb	N	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
TOC - UTRWD	5/12/2014	6.21	3.62 – 6.21	TT	N/A	ppm	N	Naturally present in the environment.
Total Organic Carbon	**Collection Date**	**Highest Level Detected**	**Range of Levels Detected**	**Treated Water Alkalinity**		**Units**	**Violation**	**Likely Source of Contaminations**
Total Organic Carbon – COL/Dallas	**2014**	**4.96**	**3.65 – 4.96**	**<60 mg/L as CaCO3**		**ppm**	**N**	**Naturally present in the environment.**
Radioactive Contaminants	**Collection Date**	**Highest Level Detected**			**MCL**	**Units**		**Likely Source of Contaminations**
Gross Beta Emitters - UTRWD	**06/20/2011**	**4.4**	**N/A**	**5**	**0**	**pCi/L(1)**	**N**	**Decay of natural and man-made deposits.**
Gross beta particle activity – COL/Dallas	**2011**	**7.2**	**4 – 7.2**	**0**	**50**	**pCi/L(1)**	**N**	**Decay of natural and man-made deposits.**
Combined Radium – UTRWD	**06/20/2011**	**1**	**N/A**	**5**	**0**	**pCi/L(1)**	**N**	**Erosion of natural deposits.**
Combined Radium 226/228 – COL/Dallas	**2011**	**1**	**1 – 1**	**0**	**5**	**pCi/L**	**N**	**Erosion of natural deposits.**
Synthetic organic contaminants including pesticides and herbicides	**Collection Date**					**Units**	**Violation**	**Likely Source of Contaminations**
Atrazine – UTRWD	**7/22/2014**	**0.43**	**0.l4 – 0.43**	**3**	**3**	**ppb**	**N**	**Herbicide runoff.**
Atrazine – COL/Dallas	**2014**	**0.25**	**<0.08 – 0.25**	**3**	**3**	**ppb**	**N**	**Runoff from herbicide used on row crops.**
Simazine – UTRWD	**7/29/2014**	**0.13**	**<0.05 – 0.13**	**4**	**4**	**ppb**	**N**	**Herbicide runoff.**
Simazine – COL/Dallas	**2014**	**0.24**	**0.08 – 0.24**	**4**	**4**	**ppb**	**N**	**Herbicide runoff.**
Di(2-Ethylhexyl)phthalate – COL/Dallas	**2014**	**0.5**	**<0.5 – 0.5**	**0**	**6**	**ppb**	**N**	**Discharge from rubber and chemical factories.**

(1) EPA considers 50 pCi/L to be the level of concern for beta particles.

Turbidity

	Collection Date		Violation	Likely Source of Contaminations
Highest single measurement – UTRWD	2014	0.16	N	Soil runoff.
Highest single measurement – COL/Dallas	2014	0.17	N	Soil runoff.
Lowest monthly % meeting limit – UTRWD	2014	3%	N	Soil runoff.
Lowest monthly % meeting limit – COL/Dallas	2014	100%	N	Soil runoff.

Information Statement: Turbidity is a measurement of the cloudiness of water caused by suspended particulars. It is monitored because it is a good indicator of water quality and the effectiveness of the treatment plants filtration process.

Violations

Violation Type	Violation Begin	Violation End	Violation Explanation
Disinfectant Level Quarterly Operating Report (DLQOR) – District	04/01/2014	06/30/2014	While the District successfully maintained acceptable disinfection residuals within its water distribution system and successfully monitored the disinfectant residuals at various location throughout the water distribution system, the District failed to submit its 2nd Quarter DLQOR to TCEQ for the monitoring period of April 1, 2014 through June 30, 2014 as required by Title 30, Texas Administrative Code (30 TAC), Section 290 Subchapter F. [The 2nd Quarter DLQOR was successfully submitted by the District to TCEQ on January 19, 2015. A Public Notice was successfully mailed by the District to all water customers on January 19, 2015.]
Disinfectant Level Quarterly Operating Report (DLQOR) – District	07/01/2014	09/30/2014	While the District successfully maintained acceptable disinfection residuals within its water distribution system and successfully monitored the disinfectant residuals at various location throughout the water distribution system, the District failed to submit its 3rd Quarter DLQOR report to TCEQ for the monitoring period of July 1, 2014 through September 30, 2014 as required by Title 30, Texas Administrative Code (30 TAC), Section 290 Subchapter F. [The 3rd Quarter DLQOR was successfully submitted by the District to TCEQ on January 21, 2015. A Public Notice was successfully mailed by the District to all water customers on February 9, 2015.]