2013 Annual Drinking Water Quality Report

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, 2013.

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 aqua 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.

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, 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. 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 TCEQ. 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.tcdq.texas.gov/DWW

Public Participation Opportunities:

The Public is invited to attend monthly Denton County FWSD #1-A Board of Directors meetings in order to participate in decisions that may affect the quality of water in Castle Hills. The Board meets on the 3rd Tuesday of each month at 11 a.m. These meetings are conducted at 2540 King Arthur Blvd., Suite 220, Lewisville, TX 75056.

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)
mrem/year:	millirems per year (a measure of radiation absorbed by the body)
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)

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 Contamination
Chloramines	2013	3.13	.50	3.90	4.0	4.0	ppm	N	Water additive 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	1 positive sample	1	-	0	N	Naturally present in the environment.

2013 Regulated Contaminants Detected

Lead and Copper

Definitions:

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

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

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2013	1.3	1.3	0.816	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of

								household plumbing systems.
Lead	2013	0	15	1.56	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 Contamination*
Haloacetic Acids (HAA5) - District	2013	11	3.8 – 17.5	No goal for the total.	60	ppb	N	By-product of drinking water disinfection.
Haloacetic Acids (HAA5) - UTRWD	2013	4	4.2 – 4.2	No goal for the total.	60	ppb	N	By-product of drinking water disinfection.
Haloacetic Acids (HAA5) - COL	2013	15	8.6 – 18.2	No goal for the total.	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM) - District	2013	25	6.6 – 32.6	No goal for the total.	80	ppb	N	By-product of drinking water distribution.
Total Trihalomethanes (TTHM) - UTRWD	2013	17	0 – 16.8	No goal for the total.	80	ppb	N	By-product of drinking water distribution.
Total Trihalomethanes (TTHM) - COL	2013	13	0 – 15.8	No goal for the total.	80	ppb	N	By-product of drinking water distribution.
Bromate	2013	5.8	2.1 – 5.8	0	10	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	2013	2	0.487 – 1.95	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrate (measured as Nitrogen) – District	2013	1	0.566 – 0.566	1	1	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrate (measured as Nitrogen) – UTRWD	2013	0.5	0.222 – 0.5	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrate (measured as Nitrogen) – COL	2013	1	0.11 – 1.3	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Antimony – COL	2013	0.221	0 – 0.221	6	6	ppb	N	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; test addition.
Arsenic - UTRWD	2013	2	0 – 1.61	0	10	ppb	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium – UTRWD	2013	0.0473	0.0332 – 0.0473	2	2	ppm	N	Discharge of drilling wastes; Discharge from

								metal refineries; Erosion of natural deposits.
Barium – COL	2013	0.0435	0.0162 – 0.0435	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chromium - COL	2013	0.69	0 – 0.69	100	100	ppb	N	Discharge from steel and pulp mills; Erosion of natural deposits.
Fluoride – UTRWD	2013	0.32	0.19 – 0.32	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Fluoride – COL	2013	0.4	0.34 – 0.415	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Selenium – UTRWD	2013	3.25	0 – 3.25	50	50	ppb	N	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Radioactive Contaminants	*Collection Date*	*Highest Level Detected*	*Range of Levels Detected*	*MCLG*	*MCL*	*Units*	*Violation*	*Likely Source of Contamination*
Beta/photon emitters - UTRWD	06/20/2011	4.4	4.4 – 4.4	0	50	pCi/L *(1)*	N	Decay of natural and man-made deposits.
Beta/photon emitters - COL	03/16/2011	4.3	4.3 – 4.3	0	50	pCi/L *(1)*	N	Decay of natural and man-made deposits.
Combined Radium 226/228 – UTRWD	06/20/2011	1	1 – 1	0	5	pCi/L	N	Erosion of natural deposits.
Combined Radium 226/228 – COL	03/16/2011	1	1 – 1	0	5	pCi/L	N	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*
Atrazine – UTRWD	2013	0.32	0.24 – 0.32	3	3	ppb	N	Runoff from herbicide used on row crops.
Atrazine – COL	2013	0.39	0.16 – 0.39	3	3	ppb	N	Runoff from herbicide used on row crops.
Simazine – UTRWD	2013	0.12	0 – 0.12	4	4	ppb	N	Herbicide runoff.
Simazine – COL	2013	0.25	0.25 – 0.25	4	4	ppb	N	Herbicide runoff.

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

Turbidity

	Limit (Treatment Technique)	*Level Detected*	*Violation*	*Likely Source of Contamination*
Highest single measurement – UTRWD	1 NTU	0.13 NTU	N	Soil runoff.
Highest single measurement – COL	1 NTU	0.17 NTU	N	Soil runoff.
Lowest monthly % meeting limit – UTRWD	0.3 NTU	100%	N	Soil runoff.
Lowest monthly % meeting limit – COL	0.3 NTU	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

Consumer Confidence Rule – The Consumer Confidence Rule requires community water systems to prepared and provide to their customers annual consumer confidence reports on the quality of the water delivered by the systems.			
Violation Type	*Violation Begin*	*Violation End*	*Violation Explanation*
CCR REPORT	07/01/2012	06/21/2013	We failed to provide to you, our drinking water customers, an annual report that informs you about the quality of our drinking water and characterizes the risks from exposure to contaminants detected in our drinking water.

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 corrosivity. Lead and copper enter drinking water mainly from corrosion of lead and copper containing plumbing materials.			
Violation Type	*Violation Begin*	*Violation End*	*Violation Explanation*
LEAD CONSUMER NOTICE (LCR)	12/30/2013	2013	We failed to provide the results of lead tap water monitoring to the consumers at the location water was tested. These were supposed to be provided no later than 30 days after learning the results.