# Red River Authority of Texas

# 2019 Drinking Water Quality Report

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This report is a summary of the quality of the water provided to our customers for the period of January 1 to December 31, 2019. The summary was made using data from the most recent U.S. Environmental Protection Agency (EPA) required tests, and is presented in the attached pages. This report is available online at: www.rra.texas.gov/2019WaterReport.pdf.

## En Español

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (866) 723-8697.

**ENVIRONMENTAL PROTECTION AGENCY**

**SAFE DRINKING WATER HOTLINE   (800) 426-4791**

## Information About Your Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, 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.

## Unregulated Contaminants

Unregulated contaminants do not have EPA established drinking water standards. The purpose of monitoring these contaminants is to assist the EPA in determining if future regulation is warranted. For more information visit epa.gov/dwucmr.

## Secondary Constituents

Many constituents (such as calcium, sodium, or iron), which are often found in drinking water, can cause taste, color, and odor problems. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not the EPA. These constituents are not causes for health concerns. Therefore, secondary constituents are not required to be reported in this document, but they may greatly affect the appearance and taste of your water.

## Special Notice for the ELDERLY, INFANTS, CANCER PATIENTS, people with HIV/AIDS or other immune problems:

Some people may be more vulnerable to certain microbial contaminants such as Cryptosporidium, in drinking water. Infants, some elderly or immunocompromised persons such as those undergoing chemotherapy for cancer; those 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. These people should seek advice about drinking water from a physician or health care provider.

Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the EPA's Safe Drinking Water Hotline (800-426-4791).

## Special Information About 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 Authority is responsible for providing 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 two 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 EPA's Safe Drinking Water Hotline (800-426-4791) or at epa.gov/safewater/lead.

## Public Participation Opportunities

The Authority's Board of Directors regularly meet on the third Wednesday of January, April, July, and September of each

year. Specific times and locations of these and/or any special meetings can be obtained by contacting the Authority at (866) 723-8697.

For more information about the water quality of your water system, public participation programs, water conservation programs, and/or general operations policies, call (866) 723-8697 or e-mail the Authority at: info@rra.texas.gov.

## System Information

The Authority maintains a Water Conservation and Drought Contingency Plan for the Utility Division. Information on the plan is available on the Authority's web page at www.rra.texas.gov or can be obtained by calling (866) 723-8697.

The Texas Commission on Environmental Quality (TCEQ) has completed Source Water Susceptibility Assessments for all drinking water systems that own their source. These reports describe the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. For more information on source water assessments and protection efforts for our system contact Mr. Ronald A. Mullins, Utility Supervisor, at (866) 723-8697.

## Utility Service Area

The Authority's primary service area consists of 43 Texas counties lying within the watershed of the Red River Basin. However, the regional service area of the Utility Division is comprised of 15 counties scattered throughout the primary service area. The area served is under the Certificate of Convenience and Necessity #10202. All of the technical, accounting and administrative functions are performed at the headquarters of the Authority in Wichita Falls for the 29 water systems, while the operational and maintenance functions are keyed to a District Manager who is responsible for several water systems within the district boundaries. Potable water service is provided directly to the consumer via a transmission and distribution network of over 2,180 miles of pipeline. Refer to the Regional Water Supply Facilities map, Figure 1 for further description of the service area.

## The Existing Water Supplies

The Utility Division utilizes water for distribution to the public from three basic sources: surface water, groundwater and water purchased from others. The RRA-Preston Shores Water System (Preston Shores) utilizes raw water from Lake Texoma. The RRA-Arrowhead Lake Lots Water System (ARE) utilizes raw water from Lake Arrowhead. Groundwater is produced from various formations through Authority-owned water supply well fields, where it is treated and distributed to the public. Groundwater formations include the Ogallala Aquifer, the Alluvium formation, the Seymour Aquifer, and the Trinity Aquifer. Water is purchased from others through direct contract for supply from the City of Wichita Falls in Wichita County, the City of Turkey in Hall County, the City of Vernon in Wilbarger County, the City of Wellington in Collingsworth County, and the Greenbelt Municipal and Industrial Water Authority (GMIWA) in Donley County. Purchased water is then

processed and distributed through Authority-owned facilities for service to the public.

## Definitions and Abbreviations:

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

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.

Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Level 1 Assessment: A 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

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.

Maximum Contaminant Level (MCL): The highest level of a contaminant in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal or 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 or 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 known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

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

NTU: Nephelometric Turbidity Units

MFL: million fibers per liter

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 (ug/l)

ppt: parts per trillion, or nanograms per liter

ppq: parts per quadrillion, or pictograms per liter (pg/L)

MG - million gallons

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

na: Not applicable.

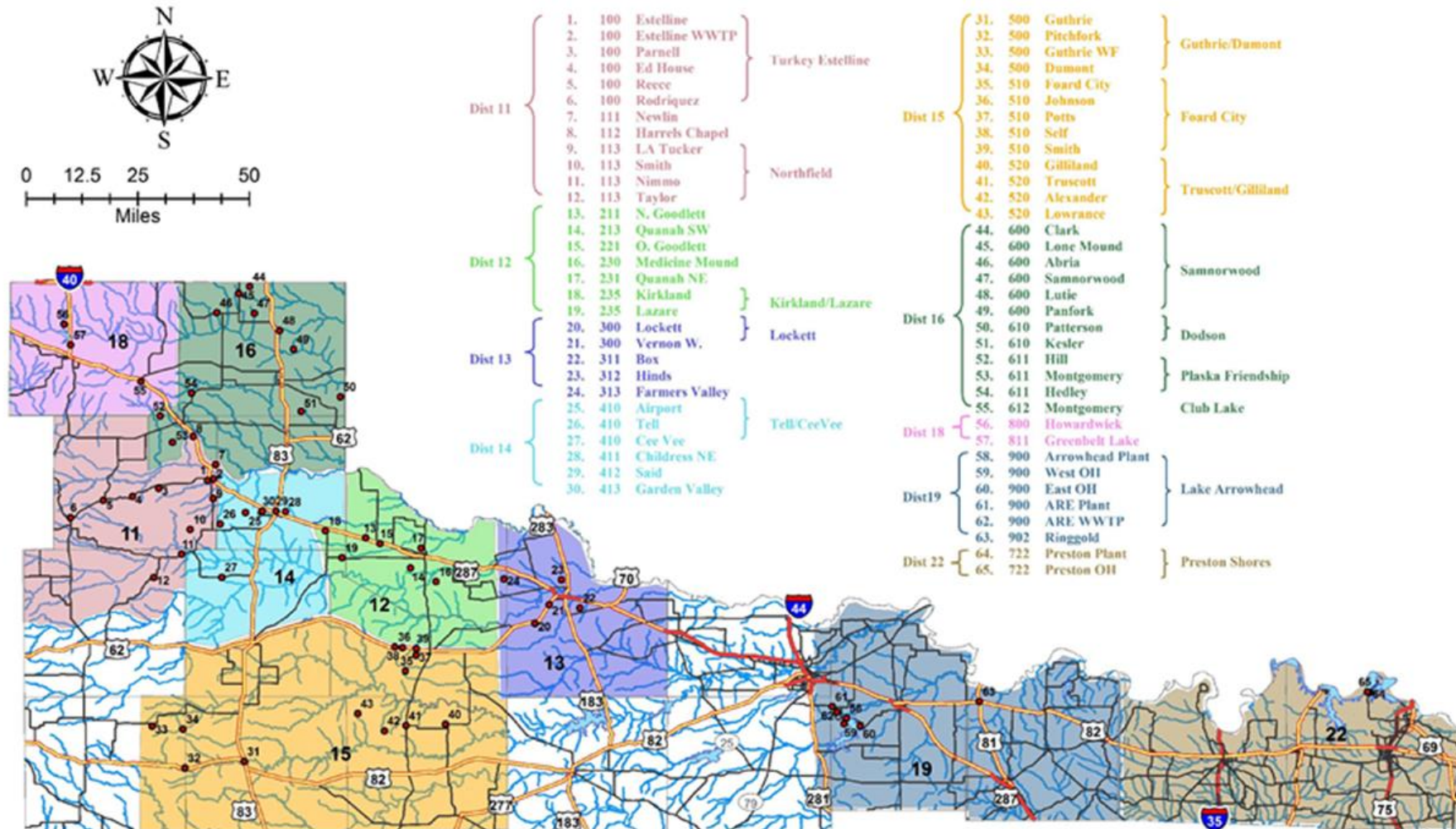# Red River Authority of Texas
## Regional Water Supply Facilities



Figure 1

# Water System Data

| SYSTEM NAME | County | TCEQ I.D. NO. | Water Producer | Water Source | Number of Customers | Report Data Pages |
|---|---|---|---|---|---|---|
| RRA - Turkey-Estelline | Hall | 0960001 | RRA Wells/Greenbelt MIWA/Turkey MWS | Seymour Aquifer/Greenbelt Lake | 250 | 8, 55, 57 |
| RRA - Newlin | Hall | 0960016 | Greenbelt MIWA | Greenbelt Lake | 27 | 10, 55 |
| RRA - Carey-Northfield | Childress | 0380015 | Greenbelt MIWA | Greenbelt Lake | 132 | 11, 55 |
| RRA - New Goodlett | Hardeman | 0990003 | Greenbelt MIWA | Greenbelt Lake | 75 | 12, 55 |
| RRA - Quanah Southwest | Hardeman | 0990044 | Greenbelt MIWA | Greenbelt Lake | 52 | 13, 55 |
| RRA - Old Goodlett | Hardeman | 0990012 | Greenbelt MIWA | Greenbelt Lake | 100 | 15, 55 |
| RRA - Medicine Mound | Hardeman | 0990013 | Greenbelt MIWA | Greenbelt Lake | 120 | 16, 55 |
| RRA - Quanah Northeast | Hardeman | 0990004 | Greenbelt MIWA | Greenbelt Lake | 265 | 17, 55 |
| RRA - Kirkland-Lazare | Hardeman | 0380012 | Greenbelt MIWA | Greenbelt Lake | 119 | 18, 55 |
| RRA - Lockett | Wilbarger | 2440008 | City of Vernon | Seymour Aquifer | 702 | 19, 60 |
| RRA - Box | Wilbarger | 2440006 | City of Vernon | Seymour Aquifer | 123 | 20, 60 |
| RRA - Hinds Wildcat | Wilbarger | 2440005 | City of Vernon | Seymour Aquifer | 180 | 21, 60 |
| RRA - Farmers Valley | Wilbarger | 2440007 | RRA Wells/Greenbelt MIWA | Seymour Aquifer/Greenbelt Lake | 130 | 23, 55 |
| RRA - Tell- Cee Vee | Childress | 0380013 | Greenbelt MIWA | Greenbelt Lake | 390 | 26, 55 |
| RRA - Northeast Childress | Childress | 0380014 | Greenbelt MIWA | Greenbelt Lake | 305 | 27, 55 |
| RRA - Saied | Childress | 0380019 | Greenbelt MIWA | Greenbelt Lake | 67 | 28, 55 |
| RRA - Garden Valley | Childress | 0380017 | Greenbelt MIWA | Greenbelt Lake | 122 | 29, 55 |
| RRA - Guthrie-Dumont | King | 1350001 | RRA Wells | Alluvium Aquifer | 325 | 30 |
| RRA - Foard County | Foard | 0780014 | Greenbelt MIWA | Greenbelt Lake | 260 | 32, 55 |
| RRA - Truscott-Gilliland | Knox | 1380006 | RRA Wells/Greenbelt MIWA | Seymour Aquifer/Greenbelt Lake | 215 | 34, 55 |
| RRA - Samnorwood | Collingsworth | 0440016 | RRA Wells | Seymour Aquifer | 146 | 37 |
| RRA - Dodson | Collingsworth | 0440018 | RRA Wells/Wellington Municipal WS | Seymour Aquifer | 262 | 38, 61 |
| RRA - Donley Co. Rest Area/Plaska | Donley | 0680018 | Greenbelt MIWA | Greenbelt Lake | 30 | 40, 55 |
| RRA - Club Lake-Memphis NE | Collingsworth | 0960020 | Greenbelt MIWA | Greenbelt Lake | 76 | 40, 55 |
| RRA - Howardwick | Donley | 0650004 | RRA Wells | Ogallala Aquifer | 675 | 42 |
| RRA - Greenbelt Lake Lots | Donley | 0650014 | Greenbelt MIWA | Greenbelt Lake | 195 | 43, 55 |
| RRA - Arrowhead Lake Lots | Clay | 0390021 | RRA Surface Water | Arrowhead Lake | 1725 | 45 |
| RRA - Ringgold | Montague | 1690005 | RRA Wells | Trinity Aquifer | 160 | 50 |
| RRA - Preston Shores | Grayson | 0910037 | RRA Surface Water | Lake Texoma | 1707 | 51 |

## About the Following Tables

**The following tables contain all of the federally regulated or monitored constituents which have been found in your drinking water. The tables are organized by system. Data for water purchased from other providers (source water not produced by RRA) is noted in each applicable system with the page referenced where the data can be found.**

### RRA ESTELLINE TURKEY WATER SYSTEM TX0960001

RRA ESTELLINE TURKEY WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County. A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA ESTELLINE TURKEY WATER SYSTEM purchases water from TURKEY MUNICIPAL WATER SYSTEM. The TURKEY MUNICIPAL WATER SYSTEM provides ground water from the Seymour Aquifer located in Hall County. A table containing contaminants detected by Turkey MWS in their facilities is provided on Page 57.

RRA ESTELLINE TURKEY WATER SYSTEM also produces ground water from the Seymour Aquifer located in Hall County. Detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2018 | 1.3 | 1.3 | 0.053 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 2018 | 0 | 15 | 3 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 6 | 5.5 – 5.5 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Total Trihalomethanes (TTHM) | 2019 | 12 | 12.3 – 12.3 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2019 | 1.8 | 1.8 – 1.8 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2019 | 0.23 | 0.23 - 0.23 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Cyanide | 2019 | 74.2 | 74.2-74.2 | 200 | 200 | ppb | N | Discharge from plastic and fertilizer factories; Discharge from steel/metal. |
| Fluoride | 1/30/2018 | 0.692 | 0.692 - 0.692 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate [measured as Nitrogen] | 2019 | 3 | 1.58 – 2.81 | 10 | 10 | ppm | Y | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| Nitrite [measured as Nitrogen] | 10/14/2015 | 0.267 | 0 - 0.267 | 1 | 1 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Radioactive Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Beta/photon emitters | 01/29/2014 | 9.2 | 9.2 - 9.2 | 0 | 50 | pCi/L* | N | Decay of natural and man-made deposits. |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Combined Radium 226/228 | 01/29/2014 | 2.4 | 2.4 - 2.4 | 0 | 5 | pCi/L | N | Erosion of natural deposits. |
| Uranium | 01/29/2014 | 4.2 | 4.2 - 4.2 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.22 | 0.52-1.90 | 4 | 4 | ppm | N | Water additive used to control microbes. |

## RRA NEWLIN TX0960016

RRA NEWLIN WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA NEWLIN WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2019 | 1.3 | 1.3 | 0.026 | 0 | ppm | Y | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
|  |  |  |  |  |  |  |  |  |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 24 | 11.8 -14.9 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Total Trihalomethanes (TTHM) | 2019 | 35 | 9.6 -25.7 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Nitrate [measured as Nitrogen] | 2019 | 2 | 1.61 – 1.61 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

**Disinfectant Residual**

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.42 | 0.60-1.92 | 4 | 4 | ppm | N | Water additive control microbes. |

## RRA CAREY NORTHFIELD TX0380015

RRA CAREY NORTHFIELD WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA CAREY NORTHFIELD WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2019 | 1.3 | 1.3 | 0.026 | 0 | ppm | Y | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing |
|  |  |  |  |  |  |  |  |  |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 15 | 8.9 – 13.6 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Total Trihalomethanes (TTHM) | 2019 | 26 | 11.5 – 27.4 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |
|---|---|---|---|---|---|---|---|---|

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Nitrate [measured as Nitrogen] | 2019 | 2 | 1.61 – 1.61 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.33 | 0.51-2.34 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA NEW GOODLET TX0990003

RRA NEW GOODLETT WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA NEW GOODLETT WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2018 | 1.3 | 1.3 | 0.0641 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 2018 | 0 | 15 | 1 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 9 | 9.2 – 9.2 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Total Trihalomethanes (TTHM) | 2019 | 28 | 28.2 – 28.2 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |
|---|---|---|---|---|---|---|---|---|

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Nitrate [measured as Nitrogen] | 2019 | 3 | 3.11- 3.11 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.15 | 0.56 – 1.76 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA SOUTHWEST QUANAH TX0990044

RRA SOUTHWEST QUANAH WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA SOUTHWEST QUANAH WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 07/25/2017 | 1.3 | 1.3 | 0.19 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 07/25/2017 | 0 | 15 | 1.3 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 4 | 3.8 – 3.8 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Total Trihalomethanes (TTHM) | 2019 | 29 | 29 - 29 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |
|---|---|---|---|---|---|---|---|---|

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Nitrate [measured as Nitrogen] | 2019 | 3 | 3.11 – 3.11 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 0.88 | 0.49-1.9 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA OLD GOODLET TX0990012

RRA GOODLETT WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County. A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA GOODLETT WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2018 | 1.3 | 1.3 | 0.0856 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 2018 | 0 | 15 | 1.2 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 14 | 14.2 – 14.2 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Total Trihalomethanes (TTHM) | 2019 | 27 | 27.4 – 27.4 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.5 | 0.49-8.80 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA MEDICINE MOUND TX0990013

RRA MEDICINE MOUND WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA MEDICINE MOUND WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2018 | 1.3 | 1.3 | 0.1887 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2018 | 0 | 15 | 1.2 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 33 | 11.8 – 33.3 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total Trihalomethanes (TTHM)** | 2019 | 83 | 46.3 – 82.5 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 3 | 3.17 – 3.17 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 3.13 | 0.49-10.60 | 4 | 4 | ppm | N | Water additive to control microbes. |

# RRA QUANAH NORTHEAST TX0990004

RRA NORTHEAST QUANAH WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County. A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA NORTHEAST QUANAH WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2019 | 1.3 | 1.3 | 0.16 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2019 | 0 | 15 | 2.8 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 13 | 13.4 – 13.4 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total Trihalomethanes (TTHM)** | 2019 | 30 | 29.5 – 29.5 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 3 | 3.11 – 3.11 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.09 | 0.49-2.01 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA KIRKLAND-LAZARE TX0380012

RRA KIRKLAND LAZARE WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County. A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA KIRKLAND LAZARE WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2019 | 1.3 | 1.3 | 0.047 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 2019 | 0 | 15 | 0.7 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 13 | 13.2 – 13.2 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Total Trihalomethanes (TTHM) | 2019 | 28 | 28.3 – 28.3 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |
|---|---|---|---|---|---|---|---|---|

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Nitrate [measured as Nitrogen] | 2019 | 3 | 3.19- 3.19 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.39 | 0.54-3.09 | 4 | 4 | ppm | N | Water additive to control microbes. |

# RRA LOCKETT TX2440008

RRA LOCKETT WATER SYSTEM purchases water from the CITY OF VERNON. The CITY OF VERNON provides ground water pumped from wells in the Seymour Aquifer in Wilbarger County.  A table containing contaminants detected by the CITY OF VERNON in their facilities is provided on Page 60.

RRA LOCKETT WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2018 | 1.3 | 1.3 | 0.1229 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2018 | 0 | 15 | 1.9 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 5 | 0 - 10.3 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

\* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total Trihalomethanes (TTHM)** | 2019 | 14 | 4.06 – 19.8 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

\* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 10 | 6.67 – 9.6 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

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.

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.94 | 0.94-2.96 | 4 | 4 | ppm | N | Water additive to control microbes. |

# RRA BOX TX2440006

RRA BOX COMMUNITY WATER SYSTEM purchases water from the CITY OF VERNON. The CITY OF VERNON provides ground water pumped from wells in the Seymour Aquifer in Wilbarger County.  A table containing contaminants detected by the CITY OF VERNON in their facilities is provided on Page 60.

RRA BOX COMMUNITY WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2018 | 1.3 | 1.3 | 0.1553 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2018 | 0 | 15 | 2 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 1 | 1 - 1 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| **Total Trihalomethanes (TTHM)** | 2019 | 3 | 3 - 3 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

\* The value in the Highest Level Detected column is the highest average of all HAA5 or TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 9 | 7.07 – 8.54 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

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.

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.14 | 0.65-1.83 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA HINDS WILDCAT TX2440005

RRA HINDS WILDCAT WATER SYSTEM purchases water from the CITY OF VERNON. The CITY OF VERNON provides ground water pumped from wells in the Seymour Aquifer in Wilbarger County.  A table containing contaminants detected by the CITY OF VERNON in their facilities is provided on Page 60.

RRA HINDS WILDCAT WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2019 | 1.3 | 1.3 | 0.1 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing |
| Lead | 2019 | 0 | 15 | 3.5 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 2.6 | 2.6 – 2.6 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM) | 2019 | 6.83 | 6.83 – 6.83 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2018 | 1.1 | 1.1 - 1.1 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2018 | 0.23 | 0.23 - 0.23 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Fluoride | 2018 | 0.491 | 0.491 - 0.491 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |

| Nitrate [measured as Nitrogen] | 2019 | 20 | 0 – 19.5 | 10 | 10 | ppm | Y | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
|---|---|---|---|---|---|---|---|---|

| Radioactive Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Gross alpha excluding radon and uranium | 2018 | 2 | 2 - 2 | 0 | 15 | pCi/L | N | Erosion of natural deposits. |
| Uranium | 2018 | 3.3 | 3.3 - 3.3 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 2.54 | 0.8-3.5 | 4 | 4 | ppm | N | Water additive to control microbes. |

**Violations**

| Nitrate [measured as Nitrogen] | | | |
|---|---|---|---|
| Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome. | | | |
| Violation Type | Violation Begin | Violation End | Violation Explanation |
| MCL, SINGLE SAMPLE | 01/01/2019 | 03/31/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, SINGLE SAMPLE | 07/01/2019 | 09/30/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, SINGLE SAMPLE | 10/01/2019 | 12/31/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |

| Public Notification Rule | | | |
|---|---|---|---|
| The Public Notification Rule helps to ensure that consumers will always know if there is a problem with their drinking water. These notices immediately alert consumers if there is a serious problem with their drinking water (e.g., a boil water emergency). | | | |
| Violation Type | Violation Begin | Violation End | Violation Explanation |
| PUBLIC NOTICE RULE LINKED TO VIOLATION | 05/22/2019 | 06/24/2019 | We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations. |

## RRA FARMERS VALLEY TX2440007

RRA FARMERS VALLEY WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County. A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA FARMERS VALLEY WATER SYSTEM also produces ground water from the Seymour Aquifer located in Wilbarger County. Detected contaminants are as follows:

**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 monthly sample. | 1 | | 0 | N | Naturally present in the environment. |

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2019 | 1.3 | 1.3 | 0.14 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2019 | 0 | 15 | 1 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 11 | 10.5 - 10.5 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Total Trihalomethanes (TTHM)** | 2019 | 15 | 15.4 – 15.4 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Arsenic** | 2018 | 1.2 | 1.2 - 1.2 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| **Barium** | 2018 | 0.16 | 0.16 - 0.16 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| **Fluoride** | 2019 | 0.578 | 0.578 - 0.578 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| **Nitrate [measured as Nitrogen]** | 2019 | 8 | 7.78 - 8.02 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

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 Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Gross alpha excluding radon and uranium** | 2018 | 1 | 1 - 1 | 0 | 15 | pCi/L | N | Erosion of natural deposits. |
| **Uranium** | 2018 | 3.5 | 3.5 - 3.5 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Synthetic organic contaminants including pesticides and herbicides | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Di (2-ethylhexyl) phthalate** | 2017 | 1.2 | 1.2 - 1.2 | 0 | 6 | ppb | N | Discharge from rubber and chemical factories. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 2.82 | 1.00-8.20 | 4 | 4 | ppm | N | Water additive to control microbes. |

**Violations**

| E. coli |
|---|
| Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems. |

| Violation Type | Violation Begin | Violation End | Violation Explanation |
|---|---|---|---|
| **MONITOR GWR TRIGGERED/ADDITIONAL, MAJOR** | **08/20/2019** | **2019** | **We failed to collect follow-up samples within 24 hours of learning of the total coliform-positive sample. These needed to be tested for fecal indicators from all sources that were being used at the time the positive sample was collected.** |

## RRA TELL CEE VEE TX0380013

RRA TELL CEE VEE WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA TELL CEE VEE WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2017 | 1.3 | 1.3 | 0.087 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2017 | 0 | 15 | 2 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 16 | 10.2 - 16.0 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Total Trihalomethanes (TTHM) | 2019 | 24 | 14.8 – 26.8 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |
|---|---|---|---|---|---|---|---|---|

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 3 | 3.04 – 3.04 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.20 | 0.50-1.70 | 4 | 4 | ppm | N | Water additive to control microbes. |

RRA NORTHEAST CHILDRESS WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County. A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA NORTHEAST CHILDRESS WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2018 | 1.3 | 1.3 | 0.0867 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2018 | 0 | 15 | 0.8 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 5 | 4.5 – 4.5 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Total Trihalomethanes (TTHM) | 2019 | 28 | 27.6 - 27.6 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |
|---|---|---|---|---|---|---|---|---|

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 3 | 3.15 – 3.15 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| **Nitrite [measured as Nitrogen]** | 2015 | 0.237 | 0.237 - 0.237 | 1 | 1 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.10 | 0.50-1.40 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA SAIED TX0380019

RRA SAIED WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA SAIED WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2017 | 1.3 | 1.3 | 0.19 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 2017 | 0 | 15 | 2.7 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 12 | 12.1 – 12.1 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Total Trihalomethanes (TTHM) | 2019 | 27 | 26.9 – 26.9 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Nitrate [measured as Nitrogen] | 2019 | 3 | 3.12 – 3.12 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| Nitrite [measured as Nitrogen] | 2015 | 0.0685 | 0.0685 - 0.0685 | 1 | 1 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.47 | 0.70-2.20 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA GARDEN VALLEY TX0380017

RRA GARDEN VALLEY WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County. A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA GARDEN VALLEY WATER SYSTEM detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2019 | 1.3 | 1.3 | 0.6 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 5 | 4.9 – 4.9 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total Trihalomethanes (TTHM)** | 2019 | 14 | 13.7 – 13.7 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 3 | 3.14- 3.14 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| **Nitrite [measured as Nitrogen]** | 2015 | 0.236 | 0.236 - 0.236 | 1 | 1 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 0.86 | 0.50-1.30 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA GUTHRIE-DUMONT TX1350001

RRA GUTHRIE-DUMONT WATER SYSTEM produces groundwater from the Alluvium Aquifer located in King County.  Detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2019 | 1.3 | 1.3 | 0.053 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2016 | 0 | 15 | 0.9 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2017 | 1.7 | 1.7 - 1.7 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2017 | 0.042 | 0.042 - 0.042 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Chromium | 2017 | 2 | 2 - 2 | 100 | 100 | ppb | N | Discharge from steel and pulp mills; Erosion of natural deposits. |
| Fluoride | 2018 | 0.0755 | 0.0755 - 0.0755 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate [measured as Nitrogen] | 2019 | 15 | 14.1 - 15.4 | 10 | 10 | ppm | Y | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| Selenium | 2017 | 8.4 | 8.4 - 8.4 | 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 Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Uranium | 2016 | 1.1 | 1.1 - 1.1 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 0.92 | 0.72-1.23 | 4 | 4 | ppm | N | Water additive to control microbes. |

**Violations**

| Nitrate [measured as Nitrogen] | | | |
|---|---|---|---|
| Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome. | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| MCL, SINGLE SAMPLE | 01/01/2019 | 03/31/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, SINGLE SAMPLE | 04/01/2019 | 06/30/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, SINGLE SAMPLE | 07/01/2019 | 09/30/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, SINGLE SAMPLE | 10/01/2019 | 12/31/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |

| Public Notification Rule | | | |
|---|---|---|---|
| The Public Notification Rule helps to ensure that consumers will always know if there is a problem with their drinking water. These notices immediately alert consumers if there is a serious problem with their drinking water (e.g., a boil water emergency). | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| PUBLIC NOTICE RULE LINKED TO VIOLATION | 06/11/2019 | 07/01/2019 | We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations. |

# RRA FOARD COUNTY TX0780014

RRA FOARD COUNTY WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County. A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA FOARD COUNTY WATER SYSTEM detected contaminants are as follows:

**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 monthly sample. | 1 | | 0 | N | Naturally present in the environment. |

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2018 | 1.3 | 1.3 | 0.0458 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2018 | 0 | 15 | 0.5 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 45 | 3.3 – 52.2 | No goal for the total | 60 | ppb | Y | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total Trihalomethanes (TTHM)** | 2019 | 99 | 31.6- 116 | No goal for the total | 80 | ppb | Y | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 3 | 2.56 - 2.56 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.02 | 0.31 – 1.66 | 4 | 4 | ppm | N | Water additive to control microbes. |

**Violations**

| Public Notification Rule | | | |
|---|---|---|---|
| The Public Notification Rule helps to ensure that consumers will always know if there is a problem with their drinking water. These notices immediately alert consumers if there is a serious problem with their drinking water (e.g., a boil water emergency). | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| PUBLIC NOTICE RULE LINKED TO VIOLATION | 06/20/2019 | 07/19/2019 | We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations. |

| Total Trihalomethanes (TTHM) | | | |
|---|---|---|---|
| Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| MCL, LRAA | 01/01/2019 | 03/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 04/01/2019 | 06/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |

## RRA TRUSCOTT-GILLILAND TX1380006

RRA TRUSCOTT-GILLILAND WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA TRUSCOTT-GILLILAND WATER SYSTEM also produces groundwater from the Seymour Aquifer located in Knox County.  Detected contaminants are as follows:

**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 monthly sample. | 1 | | 0 | N | Naturally present in the environment. |

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2019 | 1.3 | 1.3 | 0.1023 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2019 | 0 | 15 | 4.5 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 1 | 1 - 1 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| **Total Trihalomethanes (TTHM)** | 2019 | 45.6 | 45.6 – 45.6 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Arsenic** | 2019 | 2 | 2 - 2 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Barium** | 2019 | 0.16 | 0.16 - 0.16 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| **Fluoride** | 2018 | 0.478 | 0.478 - 0.478 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| **Nitrate [measured as Nitrogen]** | 2019 | 5 | 2.18 – 4.83 | 10 | 10 | ppm | Y | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Radioactive Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Beta/photon emitters** | 2018 | 8.1 | 8.1 - 8.1 | 0 | 50 | pCi/L* | N | Decay of natural and man-made deposits. |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Gross alpha excluding radon and uranium** | 2018 | 6 | 6 - 6 | 0 | 15 | pCi/L | N | Erosion of natural deposits. |
| **Uranium** | 2018 | 11.9 | 11.9 - 11.9 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.07 | 0.76 - 1.66 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA SAMNORWOOD TX0440016

RRA SAMNORWOOD WATER SYSTEM produces groundwater from the Seymour Aquifer located in Collingsworth County.  Detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 08/01/2017 | 1.3 | 1.3 | 0.027 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 3.1 | 3.1 – 3.1 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM) | 2019 | 12.4 | 12.4 – 12.4 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2019 | 2.2 | 2.2 - 2.2 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2019 | 0.028 | 0.028 - 0.028 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Fluoride | 2017 | 0.316 | 0.316 - 0.316 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate [measured as Nitrogen] | 2019 | 2 | 2.05 - 2.05 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Radioactive Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Gross alpha excluding radon and uranium | 2018 | 5 | 5 - 5 | 0 | 15 | pCi/L | N | Erosion of natural deposits. |
| Uranium | 2018 | 3.6 | 3.6 - 3.6 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 0.92 | 0.6-1.50 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA DODSON TX0440018

RRA DODSON WATER SYSTEM purchases water from the Wellington Municipal Water System. The Wellington Municipal Water System provides groundwater from the Seymour Aquifer located in Collingsworth County. A table containing contaminants detected by the Wellington Municipal Water System in their facilities is provided on Page 61.

RRA DODSON WATER SYSTEM also produces ground water from Seymour Aquifer located in Collingsworth County. Detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2017 | 1.3 | 1.3 | 0.02 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 1.6 | 1.6 – 1.6 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

| Total Trihalomethanes (TTHM) | 2019 | 6.97 | 6.97 – 6.97 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |
|---|---|---|---|---|---|---|---|---|

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2019 | 3 | 3 - 3 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2019 | 0.091 | 0.091 - 0.091 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Chromium | 2019 | 1.8 | 1.8 - 1.8 | 100 | 100 | ppb | N | Discharge from steel and pulp mills; Erosion of natural deposits. |
| Fluoride | 2018 | 0.237 | 0.237 - 0.237 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate [measured as Nitrogen] | 2019 | 10 | 8.49 - 9.98 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

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 Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Uranium | 2016 | 2.1 | 2.1 - 2.1 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 0.97 | 0.60-1.40 | 4 | 4 | ppm | N | Water additive to control microbes. |

# RRA DONLEY COUNTY REST AREAS TX0650018

RRA DONLEY COUNTY REST AREAS WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA DONLEY COUNTY REST AREAS WATER SYSTEM detected contaminants are as follows:

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 2 | 1.55 - 1.55 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.25 | 0.9 - 1.50 | 4 | 4 | ppm | N | Water additive to control microbes. |

# RRA CLUB LAKE TX0960019

RRA CLUB LAKE WATER SYSTEM purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA CLUB LAKE WATER SYSTEM detected contaminants are as follows:

**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 monthly sample. | 1 | | 0 | N | Naturally present in the environment. |

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2017 | 1.3 | 1.3 | 0.02 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Total Trihalomethanes (TTHM)** | 2019 | 15 | 15.3 - 15.3 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 3 | 3.25 – 3.25 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.20 | 0.90 - 1.40 | 4 | 4 | ppm | N | Water additive to control microbes. |

# RRA HOWARDWICK TX0650004

RRA HOWARDWICK WATER SYSTEM produces groundwater from the Ogallala Aquifer located in Donley County.  Detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2017 | 1.3 | 1.3 | 0.022 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 1.5 | 1.5 - 1.5 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM) | 2019 | 5.7 | 5.7 - 5.7 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2019 | 1.1 | 1.1 - 1.1 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2019 | 0.05 | 0.05 - 0.05 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Fluoride | 2018 | 0.915 | 0.915 - 0.915 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate [measured as Nitrogen] | 2019 | 8 | 6.4 - 7.51 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

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.

| Selenium | 2019 | 8.9 | 8.9 - 8.9 | 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 Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Beta/photon emitters | 2019 | 7.3 | 5.8 - 7.3 | 0 | 50 | pCi/L* | N | Decay of natural and man-made deposits. |

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

| Gross alpha excluding radon and uranium | 2018 | 16 | 16 - 16 | 0 | 15 | pCi/L | N | Erosion of natural deposits. |
| Uranium | 2019 | 13 | 9.7 - 15.1 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.27 | 0.4 – 1.9 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA GREENBELT LAKE LOTS TX0650014

RRA GREENBELT LAKE purchases water from GREENBELT MIWA. GMIWA provides surface water from Greenbelt Lake in Donley County.  A table containing contaminants detected by GMIWA in their facilities is provided on Page 55.

RRA GREENBELT LAKE WATER SYSTEM detected contaminants are as follows:

**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 monthly sample. | 1 | | 0 | N | Naturally present in the environment. |

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2019 | 1.3 | 1.3 | 0.14 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 12 | 11.5 - 11.5 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total Trihalomethanes (TTHM)** | 2019 | 19 | 18.5 - 18.5 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Nitrate [measured as Nitrogen]** | 2019 | 2 | 1.75 - 1.75 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.4 | 0.64 - 2.80 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA ARROWHEAD LAKE LOTS TX0390021

RRA ARROWHEAD LAKE LOTS WATER SYSTEM produces surface water from Arrowhead Lake purchased as raw water from the City of Wichita Falls in Clay County. Detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2018 | 1.3 | 1.3 | 0.0696 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 2018 | 0 | 15 | 0.7 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 76 | 22.4 - 96.7 | No goal for the total | 60 | ppb | Y | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM) | 2019 | 169 | 106 - 184 | No goal for the total | 80 | ppb | Y | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 or TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2019 | 2 | 1.8 - 1.8 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2019 | 0.067 | 0.067 - 0.067 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Cyanide | 2019 | 42 | 42 - 42 | 200 | 200 | ppb | N | Discharge from plastic and fertilizer factories; Discharge from steel/metal factories. |
| Fluoride | 2019 | 0.2 | 0.219 - 0.219 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate [measured as Nitrogen] | 2019 | 0.423 | 0.423 - 0.423 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Radioactive Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Beta/photon emitters | 2018 | 9.7 | 9.7 - 9.7 | 0 | 50 | pCi/L* | N | Decay of natural and man-made deposits. |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Combined Radium 226/228 | 2018 | 1.5 | 1.5 - 1.5 | 0 | 5 | pCi/L | N | Erosion of natural deposits. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 2.72 | 0.7-5.0 | 4 | 4 | ppm | N | Water additive to control microbes. |

Information Statement: 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 system and disinfectants.

| Turbidity | Level Detected | Limit | Violation | Likely Source of Contamination |
|---|---|---|---|---|
| **Highest single measurement** | 0.54 NTU | 1 NTU | N | Soil runoff. |
| **Lowest monthly % meeting limit** | 88% | 0.3 NTU | Y | Soil runoff. |

**Total Organic Carbon**

The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set, unless a TOC violation is noted in the violations section.

**Violations**

| Haloacetic Acids (HAA5) | | | |
|---|---|---|---|
| Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| MCL, LRAA | 01/01/2019 | 03/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 04/01/2019 | 06/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 07/01/2019 | 09/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 10/01/2019 | 12/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |

| Interim Enhanced SWTR |
|---|
| The Interim Enhanced Surface Water Treatment Rule improves control of microbial contaminants, particularly Cryptosporidium, in systems using surface water, or ground water under the direct influence of surface water. The rule builds upon the treatment technique requirements of the Surface Water Treatment Rule. |

| Violation Type | Violation Begin | Violation End | Violation Explanation |
|---|---|---|---|
| MONTHLY COMB FLTR EFFLUENT (IESWTR/LT1) | 12/01/2019 | 12/31/2019 | Turbidity levels, though relatively low, exceeded a standard for the month indicated. Turbidity (cloudiness) levels are used to measure effective filtration of drinking water. |

**Violations**

| Total Trihalomethanes (TTHM) | | | |
|---|---|---|---|
| Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| MCL, LRAA | 01/01/2019 | 03/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 04/01/2019 | 06/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 07/01/2019 | 09/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 10/01/2019 | 12/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |

## RRA RINGGOLD TX1690005

RRA RINGGOLD WATER SYSTEM produces groundwater from the Trinity Aquifer located in Montague County.  Detected contaminants are as follows:

**Coliform Bacteria**

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

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2018 | 1.3 | 1.3 | 0.05 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2018 | 0 | 15 | 0.3 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 1 | 1 - 1 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| **Total Trihalomethanes (TTHM)** | 2019 | 6.19 | 6.19 - 6.19 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 or TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Barium** | 2019 | 0.014 | 0.014 - 0.014 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Chromium** | 2019 | 5.7 | 5.7 - 5.7 | 100 | 100 | ppb | N | Discharge from steel and pulp mills; Erosion of natural deposits. |
| **Fluoride** | 2018 | 2.1 | 2.1 - 2.1 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| **Nitrate [measured as Nitrogen]** | 2019 | 0.0671 | 0.0671 - 0.0671 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| **Radioactive Contaminants** | **Collection Date** | **Highest Level Detected** | **Range of Samples** | **MCLG** | **MCL** | **Units** | **Violation** | **Likely Source of Contamination** |
|---|---|---|---|---|---|---|---|---|
| **Combined Radium 226/228** | 2016 | 1.5 | 1.5 - 1.5 | 0 | 5 | pCi/L | N | Erosion of natural deposits. |

| **Disinfectant Residual** | **Year** | **Average Level** | **Range of Levels** | **MRDL** | **MRDLG** | **Unit of Measure** | **Violation (Y/N)** | **Source in Drinking Water** |
|---|---|---|---|---|---|---|---|---|
| **Chlorine** | 2019 | 1.67 | 0.61-5.5 | 4 | 4 | ppm | N | Water additive to control microbes. |

## RRA PRESTON SHORES TX0910037

RRA PRESTON SHORES WATER SYSTEM produces surface water from Lake Texoma in Grayson County.  Detected contaminants are as follows:

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2018 | 1.3 | 1.3 | 0.3587 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| Lead | 2018 | 0 | 15 | 1.9 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 71 | 50.5 - 76.3 | No goal for the total | 60 | ppb | Y | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM) | 2019 | 182 | 142 - 213 | No goal for the total | 80 | ppb | Y | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 or TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2019 | 2 | 2.1 - 2.1 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2019 | 0.12 | 0.12 - 0.12 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Cyanide | 2019 | 89 | 89 - 89 | 200 | 200 | ppb | N | Discharge from plastic and fertilizer factories; Discharge from steel/metal factories. |

| Fluoride | 2019 | 0.2 | 0.172 - 0.172 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
|---|---|---|---|---|---|---|---|---|
| Nitrate [measured as Nitrogen] | 2019 | 1 | 0.502 - 0.502 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Radioactive Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Beta/photon emitters | 2015 | 6.8 | 6.8 - 6.8 | 0 | 50 | pCi/L* | N | Decay of natural and man-made deposits. |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Combined Radium 226/228 | 2015 | 1.5 | 1.5 - 1.5 | 0 | 5 | pCi/L | N | Erosion of natural deposits. |
| Uranium | 2015 | 1.1 | 1.1 - 1.1 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

| Synthetic organic contaminants including pesticides and herbicides | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Di (2-ethylhexyl) phthalate | 2019 | 1 | 0.6 - 0.6 | 0 | 6 | ppb | N | Discharge from rubber and chemical factories. |

| Disinfectant Residual | Year | Average Level | Range of Levels | MRDL | MRDLG | Unit of Measure | Violation (Y/N) | Source in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| Chlorine | 2019 | 1.74 | 0.6 - 3.5 | 4 | 4 | ppm | N | Water additive to control microbes. |

Information Statement: 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 system and disinfectants.

| Turbidity | Level Detected | Limit | Violation | Likely Source of Contamination |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **Highest single measurement** | 0.34 NTU | 1 NTU | N | Soil runoff. |
| **Lowest monthly % meeting limit** | 100% | 0.3 NTU | N | Soil runoff. |

**Total Organic Carbon**

The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set, unless a TOC violation is noted in the violations section.

**Violations**

| Haloacetic Acids (HAA5) | | | |
|---|---|---|---|
| Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| MCL, LRAA | 01/01/2019 | 03/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 04/01/2019 | 06/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 07/01/2019 | 09/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 10/01/2019 | 12/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |

| Public Notification Rule | | | |
|---|---|---|---|
| The Public Notification Rule helps to ensure that consumers will always know if there is a problem with their drinking water. These notices immediately alert consumers if there is a serious problem with their drinking water (e.g., a boil water emergency). | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |

| PUBLIC NOTICE RULE LINKED TO VIOLATION | 10/22/2019 | 11/27/2019 | We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations. |
|---|---|---|---|

**Total Trihalomethanes (TTHM)**

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

| Violation Type | Violation Begin | Violation End | Violation Explanation |
|---|---|---|---|
| MCL, LRAA | 01/01/2019 | 03/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 04/01/2019 | 06/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 07/01/2019 | 09/30/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, LRAA | 10/01/2019 | 12/31/2019 | Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |

# Source Water Data for Purchased Water

**The following is data for the source water of RRA's purchased water provider.**

## Greenbelt MIWA TX0650013          **Surface Water Source: Greenbelt Lake in Donley County**

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 8 | 8.2 - 8.2 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM) | 2019 | 13 | 13.3 - 13.3 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

\* The value in the Highest Level Detected column is the highest average of all HAA5 or TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2019 | 3 | 3.1 - 3.1 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2019 | 0.21 | 0.21 - 0.21 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Chromium | 2019 | 1.7 | 1.7 - 1.7 | 100 | 100 | ppb | N | Discharge from steel and pulp mills; Erosion of natural deposits. |
| Fluoride | 2019 | 0.7 | 0.743 - 0.743 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate [measured as Nitrogen] | 2019 | 2 | 1.63 - 1.63 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

| Radioactive Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Beta/photon emitters** | 2015 | 6.9 | 6.9 - 6.9 | 0 | 50 | pCi/L* | N | Decay of natural and man-made deposits. |

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

| Radioactive Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Combined Radium 226/228** | 2015 | 1.5 | 1.5 - 1.5 | 0 | 5 | pCi/L | N | Erosion of natural deposits. |
| **Uranium** | 2015 | 3.1 | 3.1 - 3.1 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

Information Statement:  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 system and disinfectants.

| Turbidity | Level Detected | Limit | Violation | Likely Source of Contamination |
|---|---|---|---|---|
| **Highest single measurement** | 0.7 NTU | 1 NTU | N | Soil runoff. |
| **Lowest monthly % meeting limit** | 100% | 0.3 NTU | N | Soil runoff. |

**Total Organic Carbon**
The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set, unless a TOC violation is noted in the violations section.

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2018 | 11 | 10.5 - 10.5 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |

'* The value in the Highest Level Detected column is the highest average of all HAA5 sample results collected at a location over a year'

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Trihalomethanes (TTHM) | 2018 | 26 | 25.9 - 25.9 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

'* The value in the Highest Level Detected column is the highest average of all TTHM sample results collected at a location over a year'

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2018 | 4.2 | 4.2 - 4.2 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2018 | 0.019 | 0.019 - 0.019 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| Chromium | 2018 | 2.1 | 2.1 - 2.1 | 100 | 100 | ppb | N | Discharge from steel and pulp mills; Erosion of natural deposits. |
| Fluoride | 2018 | 1.49 | 1.49 - 1.49 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate [measured as Nitrogen] | 2019 | 19 | 15.7 - 18.8 | 10 | 10 | ppm | Y | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| Selenium | 2018 | 29 | 29 - 29 | 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 Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Beta/photon emitters** | 2018 | 5.5 | 5.5 - 5.5 | 0 | 50 | pCi/L* | N | Decay of natural and man-made deposits. |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Uranium** | 2018 | 16.6 | 16.6 - 16.6 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

**Violations**

| Chlorine |
|---|

Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose.  Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

| Violation Type | Violation Begin | Violation End | Violation Explanation |
|---|---|---|---|
| Disinfectant Level Quarterly Operating Report (DLQOR). | 01/01/2019 | 03/31/2019 | 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 during the period indicated. |
| Disinfectant Level Quarterly Operating Report (DLQOR). | 04/01/2019 | 06/30/2019 | 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 during the period indicated. |

| 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 |
|---|---|---|---|
| FOLLOW-UP OR ROUTINE TAP M/R (LCR) | 01/01/2019 | 2019 | 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 during the period indicated. |
| FOLLOW-UP OR ROUTINE TAP M/R (LCR) | 07/01/2019 | 2019 | 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 during the period indicated. |

| Nitrate [measured as Nitrogen] | | | |
|---|---|---|---|
| Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome. | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| MCL, SINGLE SAMPLE | 01/01/2019 | 03/31/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, SINGLE SAMPLE | 04/01/2019 | 06/30/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, SINGLE SAMPLE | 07/01/2019 | 09/30/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |
| MCL, SINGLE SAMPLE | 10/01/2019 | 12/31/2019 | A water sample showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL) for the period indicated. |

| Revised Total Coliform Rule (RTCR) | | | |
|---|---|---|---|
| The Revised Total Coliform Rule (RTCR) seeks to prevent waterborne diseases caused by E. coli. E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, | | | |
| **Violation Type** | **Violation Begin** | **Violation End** | **Violation Explanation** |
| MONITORING, ROUTINE, MAJOR (RTCR) | 06/01/2019 | 06/30/2019 | 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 during the period |
| MONITORING, ROUTINE, MAJOR (RTCR) | 08/01/2019 | 08/31/2019 | 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 during the period |

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Copper** | 2019 | 1.3 | 1.3 | 0.2005 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |
| **Lead** | 2019 | 0 | 15 | 3.7 | 0 | ppb | N | Corrosion of household plumbing systems; Erosion of natural deposits. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Haloacetic Acids (HAA5)** | 2019 | 1 | 0 - 1 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| **Total Trihalomethanes (TTHM)** | 2019 | 1 | 0 - 1.15 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

\* The value in the Highest Level Detected column is the highest average of all HAA5 and TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Barium** | 2019 | 0.22 | 0.22 - 0.22 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| **Fluoride** | 01/31/2017 | 0.473 | 0.473 - 0.473 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| **Nitrate [measured as Nitrogen]** | 2019 | 8 | 6.41 - 8.03 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

*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.

## Wellington Municipal Water System TX0440001      Groundwater Source: Seymour Aquifer in Collingsworth County

| Lead and Copper | Date Sampled | MCLG | Action Level (AL) | 90th Percentile | # Sites Over AL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Copper | 2017 | 1.3 | 1.3 | 0.039 | 0 | ppm | N | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |

| Disinfection By-Products | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Haloacetic Acids (HAA5) | 2019 | 1 | 1.1 - 1.1 | No goal for the total | 60 | ppb | N | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM) | 2019 | 4 | 3.52 - 3.52 | No goal for the total | 80 | ppb | N | By-product of drinking water disinfection. |

* The value in the Highest Level Detected column is the highest average of all HAA5 and TTHM sample results collected at a location over a year

| Inorganic Contaminants | Collection Date | Highest Level Detected | Range of Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 2018 | 2.9 | 2.9 - 2.9 | 0 | 10 | ppb | N | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| Barium | 2018 | 0.064 | 0.064 - 0.064 | 2 | 2 | ppm | N | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Chromium** | 2018 | 3.8 | 3.8 - 3.8 | 100 | 100 | ppb | N | Discharge from steel and pulp mills; Erosion of natural deposits. |
| **Fluoride** | 2017 | 0.213 | 0.213 - 0.213 | 4 | 4.0 | ppm | N | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| **Nitrate [measured as Nitrogen]** | 2019 | 10 | 8.3 - 9.93 | 10 | 10 | ppm | N | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |

*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.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Selenium** | 2018 | 7.3 | 7.3 - 7.3 | 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 Samples | MCLG | MCL | Units | Violation | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|---|
| **Beta/photon emitters** | 2018 | 6.7 | 6.7 - 6.7 | 0 | 50 | pCi/L* | N | Decay of natural and man-made deposits. |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Gross alpha excluding radon and uranium** | 2018 | 6 | 6 - 6 | 0 | 15 | pCi/L | N | Erosion of natural deposits. |
| **Uranium** | 2018 | 11.5 | 11.5 - 11.5 | 0 | 30 | ug/l | N | Erosion of natural deposits. |

# Potential Health Effects of Contaminants

**Microbiological Contaminants**

**Coliforms** are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

**Escherichia (E. coli)** are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.

**Total organic carbon**. Total organic carbon (TOC) has no health effects. However, TOC provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by-products in excess of the maximum contaminant level (MCL) may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

**Turbidity.** 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.

**Radioactive Contaminants**

**Beta/photon emitters**. Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.

**Alpha emitters**. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

**Combined Radium 226/228**. Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

**Uranium**. Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

**Inorganic Contaminants**

**Arsenic**. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

**Barium**. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

**Chloramines**. Some people who use water containing chloramines well in excess of the maximum residual disinfectant level (MRDL) could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.

**Chlorine**. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

**Chromium.** Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

**Copper.** Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

**Cyanide**. Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

**Fluoride**. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

**Lead.** Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

**Nitrate.** Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

**Nitrite.** Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

**Selenium.** Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

**Synthetic Organic Contaminants** Including Pesticides and Herbicides

**Atrazine.** Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

**Di (2-ethylhexyl) phthalate**. Some people who drink water containing di (2-ethylhexyl) phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.

**Volatile Organic Contaminants**

**Haloacetic acids (HAAs).** Some people who drink water containing HAAs in excess of the MCL over many years may have an increased risk of getting cancer. (76) Styrene. Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

**TTHMs (Total Trihalomethanes)**. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.