



Drinking Water Quality Report

Year 2013 Data

Table Of Contents

Water Sources
Page 1

*Information for
Immuno-compromised
People*
Page 1

The Treatment Process
Page 2

Understanding the Tables
Page 3

Water Quality Data Tables
Pages 3-5

BWA is committed to providing residents with a safe and reliable supply of high quality drinking water. The water that is delivered to your tap meets or exceeds all state and federal water quality standards. The analysis was made by using the data from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in these pages.

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.

Many constituents 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 and are not required to be reported in this document, but may greatly affect the appearance and taste of your water. The Tarrant Regional Water District and BWA continually study the best way to remove these tastes and odors and treat the water.

Water Sources

BWA obtains its drinking water from ground and surface water sources. It comes from Lake Benbrook, the Paluxy and Trinity Aquifers and from the Clear Fork Trinity River. The Texas Commission on Environmental Quality (TCEQ) completed an assessment of our source water and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for our water system are based on this susceptibility and previous sample data. Any detection of these contaminants will be found in this report. If we receive or purchase water from another system, their susceptibility is not included in the assessment. For more information on source water assessments and protection efforts at our system, please contact us.

Information for Immuno-compromised People

The Texas Commission on Environmental Quality (TCEQ) requires the following statement be printed in all annual water quality reports.

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

The Treatment Process



BWA's Water Treatment Plant continues to receive recognition from TCEQ for its participation in the Texas Optimization Program. Ours is one of only 6 water treatment plants in Texas that have been in the program for more than 6 years without a lapse in recognition.

1. **Reservoirs:** Benbrook water comes primarily from Benbrook Lake.
2. **Raw Water Pump Station:** When high production is needed (over 8.0 MGD) pumps are used to bring water from Benbrook Lake to the treatment plant.
3. **Algae and Taste and Odor Control:** Chemicals are added to the raw water to help reduce algae and taste and odor causing compounds in the water.
4. **Primary Disinfection:** Chlorine Dioxide is added to the raw water to kill bacteria and viruses.
5. **Pre-Sedimentation:** Heavy solids such as sand settle out of the raw water.
6. **Rapid Mixing Chamber:** Chemicals called coagulants are added to the water and cause small particles in the water to adhere to each other.
7. **Flocculation Chambers:** These particles are slowly mixed in a series of chambers that cause them to become large and heavy enough to sink.
8. **Sedimentation Basin:** The large particles travel down a long basin and sink to the bottom in a process called clarification. The particles are collected by a scraper system at the bottom of the basin, then are removed and sent to the sanitary sewer collection system.
9. **Filtration:** The clarified water is treated with a small dose of chlorine then passes through filters which contain 24" of granular activated carbon and 12" of silica sand for ultra fine particle removal and additional taste and odor control.
10. **Final Disinfection:** Chlorine is added to the filtered water to provide final disinfection and residual disinfection that remains in the water all the way to our customers.
11. **Storage:** The finished water is then transferred into 2 storage tanks that can hold up to 3 million gallons. The water is then pumped into the distribution system and to the customer.

BWA's dedicated water treatment plant operators and maintenance personnel work diligently to ensure that all treated water leaving the plant meets or exceeds all state and federal requirements.



Water Quality Results

The water quality data table shows the results of our water quality analyses. Every regulated contaminant that we detected in the water, even in the minutest traces, is listed. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the amount detected, the usual sources of such contamination, and a key to unit of measure.

Contaminant	2013 Highest Level Detected	Range of Levels Detected	MCLG	MCL	Measure	Common Sources of Substance
Haloacetic Acids	23.8	0—23.8	N/A	60	ppb	Byproduct of drinking water chlorination
Total Trihalomethanes	58.9	0—58.9	N/A	80	ppb	Byproduct of drinking water chlorination
Arsenic	1.01	0-1.01	0	10	ppb	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium	0.0587	0.0467-0.0587	2	2	ppm	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	0.21	0.156-0.21	4	4	ppm	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	0.407	0.02-0.407	10	10	ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium	1.74	0-1.74	50	50	ppb	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Gross Beta Emitters	7.5	4.2 - 7.5	0	50	pCi/L	Decay of natural and man-made deposits
Combined Radium 226/228	2.63	2 - 2.63	0	5	pCi/L	Erosion of natural deposits
Alpha particles	2.4	2.4 - 2.4	0	15	pCi/L	Erosion of natural deposits

Understanding the Tables

NTU—Nephelometric Turbidity Units

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 picograms per liter.

MCLG (Maximum Contaminant Level Goal)—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.

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

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

Turbidity—a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or EColi Maximum Contaminant Level	Total No. Positive Fecal Coliform or EColi Samples	Common Sources of Substance
0	1 positive monthly sample	1		0	Naturally present in the environment

Maximum Residual Disinfectant Level

Year	Disinfectant	Avg. Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Source of Chemical
2013	Free Cl ₂	.99	.20	3.50	4.00	1-2	Mg/l	Disinfectant used to control microbes

MRDL (Maximum Residual Disinfectant Level)—the highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal)—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.

Total Organic Carbon (TOC)

TOC has no health effects. Disinfectants can combine with TOC to form disinfection byproducts. Disinfection is necessary to ensure that the water does not have unacceptable levels of pathogens. Byproducts of disinfection include trihalomethanes and haloacetic acids which are reported elsewhere in this report.

Year	Contaminant	Average Level	Minimum Level	Maximum Level	Unit	Source of Constituent
2013	Source Water	4.99	3.70	6.0	ppm	Naturally present in the environment
2013	Drinking Water	2.60	1.30	3.50	ppm	Naturally present in the environment
2013	Removable Ratio	47.85	35.14	71.74	% removal	NA

Year 2013	Treated TOC mg/l	Source TOC mg/l	% Removed (1-a/b)x100	Source Water Alkalinity mg/l	Required TOC Removal (%)	C/E
January	3.0	5.7	47.37	108	35	1.35
February	3.5	6.0	41.67	109	35	1.19
March	3.5	5.8	39.66	115	35	1.13
April	2.4	3.7	35.14	117	25	1.41
May	1.3	4.6	71.74	119	35	2.05
June	1.6	4.7	65.96	96	35	1.88
July	1.9	4.9	61.22	108	35	1.75
August	2.8	5.4	48.15	107	35	1.38
September	2.8	4.9	42.86	92	35	1.22
October	2.9	4.8	39.58	90	35	1.13
November	2.7	4.7	42.55	92	35	1.22
December	2.9	4.7	38.30	91	35	1.09
					Sum	16.81
					Average	1.40

Lead and Copper

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

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

Lead and Copper	Year Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Common Sources of Substance
Copper	2013	0	15	2.97	0	ppm	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2013	1.3	1.3	0.107	0	ppb	Corrosion of household plumbing systems; Erosion of natural deposits.

<i>Turbidity</i>	Limit (Treatment Technique)	Level Detected	Violation	Common Sources of Substance
Highest single measurement	1 NTU	0.09 NTU	N	Soil runoff
Lowest monthly % meeting limit	0.3 NTU	100%	N	Soil runoff

Unregulated Compounds

The 1996 Safe Drinking Water Act amendments require that once every five years the EPA issue a new list of up to 30 unregulated contaminants to be monitored by public water systems. This testing helps determine whether these contaminants are found in drinking water, at what levels they are found and in which parts of the country.

Depending on how prevalent the contaminants are and at what levels they are found, EPA may conduct further research to determine whether to begin regulating some of all of them.

Currently, EPA requires monitoring of 21 chemical contaminants, seven hormones and two viruses. The virus testing did not impact BWA and was limited to small groundwater systems that do not disinfect. BWA's testing detected only 6 of the chemical contaminants and none of the hormones. The results from the 6 chemicals detected are shown in the table below.

Compound	Range of Detects	Average	MCL	Unit of Measure	Common Sources of Substance
Chlorate	0—764	108	Not Regulated	ppb	Agricultural defoliant/desiccant; disinfection byproduct
Chromium-6	0—0.068	0.004	Not Regulated	ppb	Naturally occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Chromium	0—0.227	0.006	Not Regulated	ppb	Naturally occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Molybdenum	0—2.26	1.059	Not Regulated	ppb	Naturally occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent
Strontium	0—2460	794.6	Not Regulated	ppb	Naturally occurring element; Historically, commercial use of strontium has been in the faceplate class of cathode-ray tube TVs to block x-ray emissions
Vandium	0—1.07	0.205	Not Regulated	ppb	Naturally occurring elemental metal; Used as vanadium pentoxide which is a chemical intermediate and a catalyst.

**BENBROOK WATER
AUTHORITY**

1121 Mercedes Street
Benbrook, TX 76126

817.249.1250
817.249.6965

bwsa@benbrookwater.com

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www.benbrookwater.com

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Only Tap Water DeliversSM

BWA is still under Stage 1 drought restrictions. The following watering schedule is recommended for Benbrook residents:

Monday—no watering recommended

Tuesday & Friday—non-residential sites (apartments, businesses, parks, common areas)

Wednesday & Saturday—residential addresses ending in 0, 2, 4, 6, 8

Thursday & Sunday—Residential addresses ending in 1, 3, 5, 7, 9

All residents should avoid watering between 10am and 6pm

Watering by hand, soaker hoses and drip irrigation is allowed at any time on any day of the week.