

2018 Consumer Confidence Report for Public Water System RICE WSC

This is your water quality report for January 1 to December 31, 2018

RICE WSC provides surface water from Navarro Mills Lake, Lake Halbert and Lake Bardwell located in Navarro and Ellis Counties.

For more information regarding this report contact:

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Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (903)326-5551.

Definitions and Abbreviations

Definitions and Abbreviations

The following tables contain scientific terms and measures, some of which may require explanation.

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 system.

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 or MCL:

The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal 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 or 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 contaminants.

MFL

million fibers per liter (a measure of asbestos)

mrem:

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

na:

not applicable.

NTU

nephelometric turbidity units (a measure of turbidity)

pCi/L

picocuries per liter (a measure of radioactivity)

Definitions and Abbreviations

ppb:	micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.
ppm:	milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.
ppq	parts per quadrillion, or picograms per liter (pg/L)
ppt	parts per trillion, or nanograms per liter (ng/L)
Treatment Technique or TT:	A required process intended to reduce the level of a contaminant in drinking water.

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. For more information on taste, odor, or color of drinking water, please contact the system's business office.

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; persons who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders, can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care providers. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

In the water loss audit submitted to the Texas Water Development Board for the time period of Jan.-Dec. 2018, our system lost an estimated 9,981,036 gallons of water or 3.6%.

Information about Source Water

RICE WSC purchases water from CITY OF CORSICANA. CITY OF CORSICANA provides purchase surface water from Navarro Mills Lake and Lake Halbert located in Navarro County.

RICE WSC purchases water from CITY OF ENNIS. CITY OF ENNIS provides purchase surface water from **Lake Bardwell** located in Ellis County.

TCEQ completed a Source Water Susceptibility for all drinking water systems that own their sources. This report describes the susceptibility and types of constituents that may come into contact with the drinking water source based on human activities and natural conditions. The system(s) from which we purchase our water received the assessment report. For more information on source water assessments and protection efforts at our system contact Ada Garza (903) 326-5551.

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	08/09/2016	1.3	1.3	0.176	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	08/09/2016	0	15	2.43	1	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

2018 Water Quality Test Results

Disinfection By-Products	Collection Date	Highest Level Detected	Range of Individual Samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Haloacetic Acids (HAA5)	2018	23	9.5 - 27.8	No goal for the total	60	ppb	N	By-product of drinking water disinfection.

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

Total Trihalomethanes (TTHM)	2018	46	35.1 - 53.4	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
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* The value in the Highest Level or Average 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 Individual Samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Nitrate [measured as Nitrogen]	2018	1	0.471 - 0.654	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 Detected	MRDL	MRDLG	Unit of Measure	Violation (Y/N)	Source in Drinking Water
DLQOR	2018	2.07	.55-3.30	4	4	mg/L	ppm	Water additive used to control microbes.

Detected Regulated Contaminates for 2018

EP2 Lake Halbert

SOC Pesticide	Detected Quantity	MCL	Date Collected	Analytical Method
Atrazine	0.4 ug/l	N/A	1/31/2018	E525.2 GC/MS
VOC's				
VOC's	Detected Quantity	MC/L	Date Collected	Analytical Method
Acetone	5.8 ug/l	N/A	7/17/2018	E524.2 GC/MS
Chloroform	12.0 ug/l	N/A	7/17/2018	E524.2 GC/MS
Bromodichloromethane	11.0 ug/l	N/A	7/17/2018	E524.2 GC/MS
Dibromochloromethane	5.27 ug/l	N/A	7/17/2018	E524.2 GC/MS
2-Butanone	2.28 ug/l	N/A	7/17/2018	E524.2 GC/MS
Inorganics				
Chloride	16.4 mg/l	300.0 mg/l	1/31/2018	E300.0 Anions
Fluoride	0.49 mg/l	4.0 mg/l	1/31/2018	E300.0 Anions
Nitrate (as N)	0.352 mg/l	10.0 mg/l	1/31/2018	E300.0 Anions
Sulfate	52.7 mg/l	300.0 mg/l	1/31/2018	E300.0 Anions
Total Dissolved Solids	210 mg/l	1000.0 mg/l	1/31/2018	SM2540C
Inorganics				
Metals Trace Elements				
Calcium Total	37.6 mg/l	N/A	1/31/2018	E200.7 Metals, Trace
Potassium Total	4.02 mg/l	N/A	1/31/2018	E200.7 Metals, Trace
Magnesium Total	3.08 mg/l	N/A	1/31/2018	E200.7 Metals, Trace
Sodium Total	18.6 mg/l	N/A	1/31/2018	E200.7 Metals, Trace
E200.8 ICP-MS				
Aluminum Total	0.020 mg/l	0.2 mg/l	1/31/2018	E200.8 IC-MS
Barium Total	0.057 mg/l	2.0 mg/l	1/31/2018	E200.8 IC-MS
Chromium Total	0.001 mg/l	0.1 mg/l	1/31/2018	E200.8 IC-MS
Copper Total	.0011 mg/l	1.3 mg/l	1/31/2018	E200.8 IC-MS
Manganese Total	.0041 mg/l	0.05 mg/l	1/31/2018	E200.8 IC-MS
Cyanide Total	0.0530 mg/l	0.2 mg/l	1/31/2018	E355.4 CN

DEFINITIONS

ug/l parts per billion or micrograms per liter

mg/l parts per million or milligrams per liter

Average Chlorine Residual
2018

Month	Average Residual (mg/L)
January	2.46
February	2.45
March	2.37
April	2.45
May	2.36
June	1.98
July	2.00
August	2.20
September	2.07
October	2.16
November	2.39
December	2.32
2018 Yearly Average	2.27 mg/L

Min reading 0.6 mg/l
Max Reading 3.4 mg/l

Detected Regulated Contaminates for 2018

EP 1 Navarro Mills

SOC Pesticide	Detected Quantity	MCL	Date Collected	Analytical Method
Atrazine	0.3 ug/l	N/A	1/31/2018	E525.2 GC/MS

VOC's

Acetone	5.98 ug/l	N/A	7/19/2018	E524.2 GC/MS
2-Butatone	2.49 ug/l	N/A	7/19/2018	E524.2 GC/MS
Cholroform	17.2 ug/l	N/A	7/19/2018	E524.2 GC/MS
Bromodichloromethane	16.9 ug/l	N/A	7/19/2018	E524.2 GC/MS
Dibromochloromethane	10.0 ug/l	N/A	7/19/2018	E524.2 GC/MS
Bromoform	1.52 ug/l	N/A	7/19/2018	E524.2 GC/MS

Inorganics

Chloride	13.7 mg/l	300.0 mg/l	1/31/2018	E300.0 Anions
Fluoride	0.662 mg/l	4.0 mg/l	1/31/2018	E300.0 Anions
Nitrate (as N)	0.0722 mg/l	10.0 mg/l	1/31/2018	E300.0 Anions
Sulfate	46.5 mg/l	300.0 mg/l	1/31/2018	E300.0 Anions
Total Dissolved Solids	200 mg/l	1000.0 mg/l	1/31/2018	SM2540C

Inorganics

Metals Trace Elements

Calcium	39.9 mg/l	20,000.0 mg/l	1/31/2018	E200.7 Metals, Trace
Magnesium	2.78 mg/l	20,000.0 mg/l	1/31/2018	E200.7 Metals, Trace
Potassium	3.75 mg/l	20,000.0 mg/l	1/31/2018	E200.7 Metals, Trace
Sodium Total	18.6 mg/l	20,000.0 mg/l	1/31/2018	E200.7 Metals, Trace

E200.8 ICP-MS

Aluminum Total	0.030 mg/l	0.2 mg/l	1/31/2018	E200.8 IC-MS
Barium Total	0.050 mg/l	2.0 mg/l	1/31/2018	E200.8 IC-MS
Copper Total	.0049 mg/l	1.3 mg/l AL	1/31/2018	E200.8 IC-MS
Manganese Total	.0012 mg/l	0.05 mg/l	1/31/2018	E200.8 IC-MS
Nickel Total	.0010 mg/l	.1 mg/l	1/31/2018	E200.8 IC-MS

E245.1 Mercury water

Mercury Total	0.030 mg/l	0.2 mg/l	1/31/2018	E245.1 Mercury water
Cyanide Total	0.103 mg/l	0.2 mg/l	1/31/2018	E355.4 CN

DEFINITIONS

ug/l parts per billion or micrograms per liter

mg/l parts per million or milligrams per liter

Regulated Substances

These substances are regulated or are required to be monitored and were detected in Ennis tap water. None of the detected substances exceeded the regulated limits.

Year	Substance	Units	Average	Minimum	Maximum	MCL	MCLG	Possible Source
2018	Barium	ppm	0.066	0.066	0.066	2	2	Erosion of natural deposits, discharge from drilling and metal refineries
2018	Cyanide	ppb	140	140	140	200	200	Discharge from plastic and fertilizer factories, Discharge from steel/metal factories
2018	Atrazine	ppb	0.2	0.2	0.2	3	3	Runoff from herbicide used on row crops
2018	Fluoride	ppm	0.506	0.506	0.506	4	4	Erosion of natural deposits, water additive which promotes strong teeth, discharge from fertilizer and aluminum factories
2018	Nitrate (measured as Nitrogen) *1	ppm	0.392	0.392	0.392	10	10	Runoff from fertilizer, septic tanks, sewage, natural deposits
2017	Beta/photon emitters*2	pCi/L	6.5	6.5	6.5	50	0	Decay of natural and man – made deposits
2017	Combined Radium 226/228	pCi/L	1.5	1.5	1.5	5	0	Erosion of natural deposits
2018	Chloramines *3	ppm	3.2	2.5	3.45	MRDL=4	MRDLG=4	Disinfectant used to control microbes
2018	Total Haloacetic Acids (HAA5) *4	ppb	16	10	20	60	No goal for the total	Byproduct of drinking water disinfection
2018	Total Trihalomethanes (TTHM) *4	ppb	35	23	44	80	No goal for the total	Byproduct of drinking water disinfection

Total Organic Carbon (TOC) *5

2018	Source Water	ppm	4.67	4.16	5.76			Naturally present in the environment
2018	Drinking Water	ppm	2.77	2.1	4.47			Naturally present in the environment
2018	Removal Ratio	%	1.33	1	1.9	%Removal*		NA

Turbidity *6

Year	Substance	Units	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limit	Turbidity Limits	Possible Source
2018	Turbidity	NTU	0.12	100	0.3	Soil runoff

Lead and Copper *7

Year	Substance	Units	Action Level (AL)	Number of Sites AL	MCLG	90th Percentile	Possible Source
2016	Lead	ppb	15	0	0	1.3	Corrosion of household plumbing systems, erosion of natural deposits
2018	Copper	ppm	1.3	0	1.3	0.32	Corrosion of household plumbing systems, corrosion of natural deposits, leaching from wood preservatives.

Coliform Bacteria *8

Year	Total Bacteriological Samples Collected	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	Possible Source
2018	240	0	0	0	*8	0	Naturally present in the environment

Notes: *1 Nitrate Advisory - 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. *2 EPA considers 50 pCi/L to be the level of concern for beta particles. *3 Systems must complete and submit disinfection data on the Surface Water Monthly Operations Report (SWMOR). On the CCR report, the system must provide disinfection type, minimum, maximum, and average level. **4 Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future. *5 Total organic carbon (TOC) no health effects. The disinfectant can combine with TOC to form disinfection byproducts. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. Byproducts of disinfection include Trihalomethanes (THMs) and haloacetic acids (HAA) which are reported elsewhere in this report. Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed. *6 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. *7 Definitions: Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety. Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. 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. This water supply is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800) 426-4791 or at <http://www.epa.gov/safewater/lead> *8 Coliform Bacteria Fecal Coliform or E.coli MCL: A routine sample and a repeat sample are total coliform positive and one is also fecal coliform or E.coli positive

Unregulated, and secondary drinking water standards

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Any unregulated contaminants detected are reported in the following table. For additional information and data visit <http://www.epa.gov/safewater/ucmr/ucmr2/index.html>, or call the Safe Drinking Water Hotline at (800)426-4791.

Year	Substance	Units	Average	Minimum	Maximum	MCL	MCLG	Possible Source
2018	Chloroform	ppb	14.8	7.07	16.2	Not Regulated	Not Regulated	By-product of drinking water disinfection not regulated individually included in Total Trihalomethanes
2018	Bromoform	ppb	2.04	0	3.38	100	100	
2018	Bromochloromethane	ppb	13.28	8.44	15.8	Not Regulated	Not Regulated	
2018	Dibromochloromethane	ppb	7.15	6.5	11.73	Not Regulated	Not Regulated	
2018	Aluminum	ppm	0.012	0.012	0.012	0.05	0.05	Abundant naturally occurring element
2018	Hardness as Ca/Mg	ppm	116	116	116	NA	NA	Naturally occurring calcium and magnesium
2018	pH	ppm	7.62	7.4	7.79	>7.0	>7.0	Measure of corrosiveness of water
2018	Sodium	ppm	37.9	37.9	37.9	NA	NA	Erosion of natural deposits, by-product of oil field activity
2018	Calcium	ppm	42.3	42.3	42.3	NA	NA	Abundant naturally occurring element
2018	Magnesium	ppm	2.58	2.58	2.58	NA	NA	Abundant naturally occurring element
2018	Sulfate	ppm	62.2	62.2	62.2	300	300	Naturally occurring; common industrial by-product; by-product of oil field activity
2018	Total Alkalinity as CaCO3	ppm	107	84	134	NA	NA	Naturally occurring soluble mineral salts
2018	Total Dissolved Solids	ppm	266	266	266	1000	1000	Total dissolved mineral constituents in water

Source Water Monitoring: The Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule) requires public water systems that use surface water to monitor their source water (influent water prior to treatment) for Cryptosporidium, Giardia, E. coli, and turbidity for 24 month period beginning in October of 2016. Definitions: ND= Analyte not detected in sample. PQL= Practical Quantitation Limit- the method reporting limit (MRL) adjusted for any dilutions or other changes to the sample to deal with interferences/ matrix effects

Year	Substance	Units	Average	Minimum	Maximum	MCL	MCLG	Possible Source
2018	Turbidity	NTU	15.95	7.43	30	NA	NA	Soil runoff
2018	Cryptosporidium	oocysts/L	ND	ND	ND	NA	NA	Septic tanks and animal waste
2018	Giardia	cysts/L	ND	ND	ND	NA	NA	Septic tanks and animal waste
2018	E Coli	MPN/100mL	5 BPQL	0 BPQL	12.1 BPQL	NA	NA	Septic tanks and animal waste