

Annual Drinking Water Quality Report

TX0270049

CITY OF GRANITE SHOALS

Annual Water Quality Report for the period of January 1 to December 31, 2016

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

CITY OF GRANITE SHOALS is Surface Water from Lake LBJ in Burnet County.

For more information regarding this report and to find out about public participation activities or scheduled meetings contact:

Name Peggy Smith

Phone (830) 598-2424 ext. 3009

City Council Meeting on 2nd & 4th Tuesday of month at 6:00 pm at Granite Shoals City Hall, 2221 N. Phillips Ranch Road

Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (830) 5982424.

Sources of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can 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 EPAs 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>.

Information about Source Water Assessments

A Source Water Susceptibility Assessment for your drinking water source(s) is currently being updated by the Texas Commission on Environmental Quality. This information describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The information contained in the assessment allows us to focus source water protection strategies.

The TCEQ completed an assessment of your source water and results indicate that some of your sources are susceptible to certain contaminants. The sampling requirements for your water system are based on this susceptibility and previous sample data. Any detections of these contaminants may be found in this Consumer Confident Report. For more information on source water assessments and protection efforts at our system, contact Peggy Smith.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: <http://gis3.tceq.state.tx.us/swav/Controller/index.jsp?wtrsrc=>

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: <http://dww.tceq.texas.gov/DWW>

Source Water Name	Type of Water	Report Status	Location
INTAKE 2 - NEW PLANT	SW	Active	Lake LBJ

2016

Regulated Contaminants Detected

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	1 positive monthly sample.	3		0	Y	Naturally present in the environment.

Disinfectant Residual Table

Disinfectant	Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Violation (Y/N)	Likely Source of Contamination
Chlorine, Total	2016	3.82	0.5	5.0	4	4	ppm	N	Water additive used to control microbes.

Lead and Copper

Definitions:

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

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

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2016	1.3	1.3	0.075	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead	2016	0	15	2.4	1	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Water Quality Test Results

Definitions:	The following tables contain scientific terms and measures, some of which may require explanation.
Avg:	Regulatory compliance with some MCLs are based on running annual average of monthly samples.
Maximum Contaminant Level 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.
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.
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.
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 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)
na:	not applicable.
mrem:	millirems per year (a measure of radiation absorbed by the body)
NTU	nephelometric turbidity units (a measure of turbidity)
pCi/L	picocuries per liter (a measure of radioactivity)
ppb:	micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.
ppm:	milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.
Treatment Technique or TT:	A required process intended to reduce the level of a contaminant in drinking water.
ppt	parts per trillion, or nanograms per liter (ng/L)
ppq	parts per quadrillion, or picograms per liter (pg/L)

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Haloacetic Acids (HAA5)	2016	82	17.5 - 233	No goal for the total	60	ppb	Y	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2016	92	39.7 - 201	No goal for the total	80	ppb	Y	By-product of drinking water disinfection.
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Barium	2016	0.0593	0.0593 - 0.0593	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	2016	0.3	0.25 - 0.25	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]	2016	0.14	0.14 - 0.14	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Dalapon	2016	4.4	0 - 4.4	200	200	ppb	N	Runoff from herbicide used on rights of way.

Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.4 NTU	N	Soil runoff.
Lowest monthly % meeting limit	0.3 NTU	99%	N	Soil runoff.

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

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 Table

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	07/01/2016	09/30/2016	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. Actions we took: Increased flushing of water lines to reduce the potential for disinfection byproducts and increased monitoring of sites for disinfection levels. LRAA reflects the chemical concentrations of HAA5 on one day out of the quarter. HAA5 are a group of volatile organic compounds that are formed during the disinfection process when chlorine reacts with naturally occurring organic matter in the water. A Public Notice was issued on 2-26-2017 to customers.
MCL, LRAA	10/01/2016	12/31/2016	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. Actions we took: Increased flushing of water lines to reduce the potential for disinfection byproducts and increased monitoring of sites for disinfection levels. LRAA reflects the chemical concentrations of HAA5 on one day out of the quarter. HAA5 are a group of volatile organic compounds that are formed during the disinfection process when chlorine reacts with naturally occurring organic matter in the water. A Public Notice was issued on 23-26-2017 to customers.

Lead and Copper Rule			
The Lead and Copper Rule protects public health by minimizing lead and copper levels in drinking water, primarily by reducing water corrosivity. Lead and copper enter drinking water mainly from corrosion of lead and copper containing plumbing materials.			
Violation Type	Violation Begin	Violation End	Violation Explanation
LEAD CONSUMER NOTICE (LCR)	12/30/2016	2016	We failed to provide the results of lead tap water monitoring to the consumers at the location water was tested. These were supposed to be provided no later than 30 days after learning the results. We took this action: Due to a rule change in the lead/copper program of the TCEQ, we were unaware of the need to notify multiple departments within the TCEQ of the notification actions we took to our customers. Upon learning of the deficiencies, we took the actions to comply with the new public notification rules.

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	10/19/2014	2016	We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations. Our actions: We provided required Public Notice upon being notified of the deficiency.
PUBLIC NOTICE RULE LINKED TO VIOLATION	04/12/2015	03/13/2017	We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations. Our actions: We provided required Public Notice upon being notified of the deficiency.
PUBLIC NOTICE RULE LINKED TO VIOLATION	06/10/2016	2016	We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations. Our actions: We provided required Public Notice upon being notified of deficiency.
PUBLIC NOTICE RULE LINKED TO VIOLATION	12/01/2016	03/09/2017	We failed to adequately notify you, our drinking water consumers, about a violation of the drinking water regulations. Our actions: We provided required Public Notice upon being notified of deficiency.

Violations Table

Revised Total Coliform Rule (RTCR)			
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.			
Violation Type	Violation Begin	Violation End	Violation Explanation
MONITORING, ROUTINE, MINOR (RTCR)	04/01/2016	04/30/2016	We failed to collect some of the required routine samples of 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. required number of bacteriological samples for coliform monitoring of the water distribution system during February 2016. This monitoring is required by the Texas Commission on Environmental Quality's "Drinking Water Standards" and the federal "Safe Drinking Water Act," Public Law 95-523. Bacteriological samples are used to monitor water quality and indicate if the water is free of coliform bacteria. Our water system is required to submit 7 bacteriological samples each month. Failure to collect all required bacteriological samples is a violation of the monitoring requirements and we are required to notify you of this violation. What we did: All systems were required to file a new monitoring plan based on the Revised Total Coliform Rule (RTCR). In evaluating our system for this new plan, we discovered we were collecting more samples than was required by the rule, TAC 290.109, and in the new plan submitted we made the adjustment to collect the correct number for our system which was six samples per month instead of seven. By filing the new plan with TCEQ, it was our understanding that we were in compliance by collecting six samples per month. TCEQ notified us of non-compliance as their data still reflected seven samples required and the filing of the new plan did not change our current requirement for seven samples per month. We had collected six samples in February, March, and April of 2016. This means we received a violation of the TCR rule for these periods. In March 2016, due to having three positive coliform samples and by collecting repeat samples as required, we were credited with seven samples since one of the repeats required was at a coliform site. We discussed this issue in length with the TCEQ Compliance Inspector in April 2017 to determine the steps required to make the number of sample sites change to the regulatory number and the steps we needed to take to ensure we would be in compliance with regulatory rules.

Total Coliform			
Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.			
Violation Type	Violation Begin	Violation End	Violation Explanation
MCL (TCR), MONTHLY	03/01/2016	03/31/2016	Total coliform bacteria were found in our drinking water during the period indicated in enough samples to violate a standard. Actions we took: For systems our size, no more than one sample per month may be coliform positive to be in compliance. In March, we had three samples test positive. Repeat samples were taken at each of the locations as required and these samples did not contain coliform bacteria. We issued a Public Notice to our customers on March 25, 2016.
MONITORING (TCR), ROUTINE MINOR	02/01/2016	02/29/2016	We failed to complete all the required tests of our drinking water for the contaminant and period indicated. Required Mandatory Language by Texas Commission on Environmental Quality (TCEQ): Granite Shoals failed to collect the required number of bacteriological samples for coliform monitoring of the water distribution system during February 2016. This monitoring is required by the Texas Commission on Environmental Quality's "Drinking Water Standards" and the federal "Safe Drinking Water Act," Public Law 95-523. Bacteriological samples are used to monitor water quality and indicate if the water is free of coliform bacteria. Our water system is required to submit 7 bacteriological samples each month. Failure to collect all required bacteriological samples is a violation of the monitoring requirements and we are required to notify you of this violation. What we did: All systems were required to file a new monitoring plan based on the Revised Total Coliform Rule (RTCR). In evaluating our system for this new plan, we discovered we were collecting more samples than was required by the rule, TAC 290.109, and in the new plan submitted we made the adjustment to collect the correct number for our system which was six samples per month instead of seven. By filing the new plan with TCEQ, it was our understanding that we were in compliance by collecting six samples per month. TCEQ notified us of non-compliance as their data still reflected seven samples required, and the filing of the new plan did not change our current requirement for seven samples per month. We had collected six samples in February 2016. This means we received a violation of the TCR rule for February. We discussed this issue in length with the TCEQ Compliance Inspector in April 2017 to determine the steps required to make the number of sample sites change to the regulatory number and the steps we needed to take to ensure we would be in compliance with regulatory rules.

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	07/01/2016	09/30/2016	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. Actions we took: Increased flushing of water lines to reduce the potential for disinfection byproducts and increased monitoring of sites for disinfection levels. LRAA reflects the chemical concentrations of TTHMs on one day out of the quarter. TTHMs are a group of volatile organic compounds that are formed during the disinfection process when chlorine reacts with naturally occurring organic matter in the water. A Public Notice was issued on 23-26-2017 to customers.
MCL, LRAA	10/01/2016	12/31/2016	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. Actions we took: Increased flushing of water lines to reduce the potential for disinfection byproducts and increased monitoring of sites for disinfection levels. LRAA reflects the chemical concentrations of TTHMs on one day out of the quarter. TTHMs are a group of volatile organic compounds that are formed during the disinfection process when chlorine reacts with naturally occurring organic matter in the water. A Public Notice was issued on 23-26-2017 to customers.