

2017 WATER QUALITY REPORT

Consumer Confidence Report for the period of January 1 to December 31, 2017



CITY OF HORSESHOE BAY
PWS ID NUMBER: 1500015

PHONE: 830-598-8741
EMAIL: city@horseshoe-bay-tx.gov
WEBSITE: www.horseshoe-bay-tx.gov



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.

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.

For more information regarding this report contact:

Jeff Koska, Utilities Director

Office: 830-598-9981

Email: city@horseshoe-bay-tx.gov

Este informe contiene información importante sobre el origen y la calidad de su agua potable.
Para información en Español llame 830-598-8741.

The source of drinking water used by the City of Horseshoe Bay is
Surface Water from Lake Lyndon B. Johnson (LBJ).

Information about Source Water Assessments

A Source Water Susceptibility Assessment for your drinking water was completed by the Texas Commission on Environmental Quality (TCEQ). This information describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The information contained in the assessment allows us to focus source water protection strategies. 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 Confidence Report. For more information on source water assessments and protection efforts at our system, contact Jeff Koska, Utilities Director.

- For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL:
<https://www.tceq.texas.gov/gis/swaview>
- Further details about sources and source water assessments are available in Drinking Water Watch at the following URL: <http://dww2.tceq.texas.gov/DWW/>

SPECIAL NOTICE

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.

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; and,

- 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, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (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 water department at 830-598-8741.

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 the 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>.

Definitions (The following tables contain scientific terms and measures used in this report, some of which may require explanation.)			
MCL	Maximum Contaminant Level	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.	
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.	
MRDL	Maximum Residual Disinfectant Level	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.	
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 contaminants.	
AL	Action Level	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.	
ALG	Action Level Goal	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	Average	Regulatory compliance with some MCLs are based on running annual average of monthly samples.	
NTU	Nephelometric Turbidity Units	A measure of turbidity.	
mg/L ppm	Milligrams per liter or parts per million – or one ounce in 7,350 gallons of water.	ug/L ppb	Micrograms per liter or parts per billion – or one ounce in 7,350,000 gallons of water.
MAX	Maximum	MIN	Minimum
NA	Not Applicable	YEAR	Collection Date; the year in which sample(s) were collected.
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 <i>E. coli</i> MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.	

2017 WATER QUALITY TEST RESULTS

2017 REGULATED CONTAMINANTS DETECTED

Coliform Bacteria

MCLG	Total Coliform MCL	Highest No. of Positive	Fecal Coliform or E.Coli MCL	Total No. of Positive E.Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	1 positive monthly sample	2	0	0	No	Naturally present in the environment.

Lead and Cooper - Testing Required Every 3 Years

Year	Contaminant (Unit)	MCLG	Action Level (AL)	90 th Percentile	# Sites over AL	Violation	Likely Source of Contamination
2017	Copper (ppm)	1.3	1.3	0.49	0	No	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.
2017	Lead (ppb)	0	15	2.67	0	No	Corrosion of household plumbing systems, erosion of natural deposits.

Disinfectants and Disinfection By-Products

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels	Detection Limit	MCLG	MCL	Violation	Source of Contaminant
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**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.

2017	Haloacetic Acids Total (HAA5) ppb	29	19 – 34.2	NA	No goal	60	No	Disinfection Byproduct
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**The value in the Highest Level or Detected Column is the highest average of all TTHM sample results collected at a location over a year.

2017	Total Trihalomethanes (TTHM) ppb	57	25.9 – 75.8	NA	No goal	80 ug/L	No	Disinfection Byproduct
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Inorganic Contaminants

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels Detected	MCL G	MCL	Violation	Likely Source of Contamination
2017	Barium (ppm)	0.0683	0.0628-0.0683	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
2017	Cyanide (ppb)	100	90 - 100	200	200	No	Discharge from plastics and fertilizer factories; Discharge from steel/metal factories.
2017	Fluoride (ppm)	0.80	0.23 - 0.79	4	4.1	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
2017	Nitrate [measured as Nitrogen (ppm)]	0.21	0.05 - 0.21	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Radioactive Contaminants

Year	Radioactive Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
4/14/2016	Combined Radium 226/228 (pCi/L)	1.5	1.5 - 1.5	0	5	No	Decay of natural and man-made deposits.

Volatile Organic Contaminants

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
2017	Toluene (ppm)	0.0007	0.0-0.0007	1	1	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.

Disinfectant Residual

Year	Constituent (Unit)	AVG Level	MIN	MAX	MRDL	MRDLG	Violation	Likely Source of Contamination
2017	Free Chlorine / Chloramines (ppm)	1.58	0.50	4.4	5.0	4.0	No	Water additive used to control microbes.

Secondary Constituents and Other Unregulated 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 concern. Therefore, secondaries are not required to be reported in this document but they may greatly affect the appearance and taste of your water.

Year	Constituent (Unit)	AVG Level	MIN Level	MAX Level	Limit	Likely Source of Contamination
2017	Aluminum (mg/L)	0.114	< Detection Limit (0.02)	0.151	0.2	Abundant naturally occurring element.

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Year	Constituent (Unit)	AVG Level	MIN Level	MAX Level	Limit	Likely Source of Contamination
2017	Chloride (mg/L)	32.5	32	33	300	A chemical compound of chlorine used in water purification.
2017	Manganese (mg/L)	0.006	< Detection Limit	0.006	0.05	Occurs naturally in the environment as solids in soils and small particles in water.
2017	Sulfate (mg/L)	28	23	34	300	Naturally occurring; low to moderate concentrations of both chloride and sulfate ions add palatability to water.
2017	Total Dissolved Solids (mg/L)	253	250	256	500	Total dissolved mineral constituents in water.
2017	Total Hardness as Calcium Carbonate (mg/L) or grains/gal	175	166	184	No MCL	The presence of calcium and magnesium in water is a factor contributing to the formation of scale and insoluble soap curds which are a means of clearly identifying hard water.

Organic Compounds

Year	Contaminant (Unit)	AVG	MIN	MAX	MCL	Violation	Source of Contamination
2017	Carbon	4.99	1.8	7.52	No MCL	No	Herbicide runoff.

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.

Year	Turbidity	Level Detected	Limit Treatment Technique	Violation	Likely Source of Contamination
2017	Highest Single Measurement	0.70	1 NTU	No	Soil runoff
2017	Lowest Monthly % Meeting Limit	100%	0.30 NTU	No	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.

REPORTING VIOLATIONS FOR 2017

2017 WATER SYSTEM USAGE DATA

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. The City was involved in a management change and failed to ensure the samples were taken as required. We regret this error and have taken corrective measures to ensure all samples will be taken in the future. Previous samples taken prior and after the indicated period did not yield any elevated levels or violation.

Maximum Month: July - 79 MG

Minimum Month: February - 34 MG

Violation Type	Violation Begin	Violation End
MONITORING, ROUTINE MAJOR	04/01/2017	06/30/2017

Water Produced in 2017: 603,813,000 million gallons (MG) or 1853.03 acre/ft

2,4,5-TP (Silvex)
Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

Average Day: 1.650 MGD

2,4-D
Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

Water Loss: 4%

Dalapon
Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

Water Going Toward Outside Use: 61%

Dinoseb
Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

Lead and Copper
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.

Water Entering Sewer: 35%

Picloram
Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

WATER CONSERVATION AND DROUGHT INFORMATION

To check current restriction status or for additional water conservation information please refer to the City's website at:

<http://www.horseshoe-bay-tx.gov>